PATTERNS OF SPECIALIZATION AND ESCALATION IN CRIME: A LONGITUDINAL ANALYSIS OF JUVENILE AND ADULT ARREST TRANSITIONS IN THE GLUECK DATA

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Chapter One

Introduction

Whether or not there exists a "criminal career" has been the subject of much debate (Blumstein et al., 1986, 1988b, 1988c; Hirschi and Gottfredson, 1983; Gottfredson and Hirschi, 1986, 1987, 1988, 1990; Le Blanc and Frechette, 1989). This debate has ensued in part over the use of the term "career" to describe a history of criminal activity versus one of occupational or vocational activity (Blumstein et al., 1988a). As recently noted by Le Blanc and Frechette (1989) the use of the term career implies the study of the attributes of individuals (rather than behaviors) such as roles and attitudes which contribute to a whole lifestyle. In order not to confound the study of individuals and their behaviors, Le Blanc and Frechette have recommended the term "patterns of offending" be substituted for criminal career.

There has also been debate concerning the meaning and usefulness of specific terms used by criminal career researchers to characterize various aspects of the criminal career. Blumstein and his colleagues have used terms such as lambda- the frequency of offending for active offenders, prevalence- the proportion of a group involved in offending, onset- the initiation of criminal activity, and desistance- the termination of criminal activity- to represent the different parameters of the criminal career. Between the stages of onset and desistance

there may be variation in offending patterns. According to the criminal career perspective, these variations may reflect different causal processes.

By contrast, Gottfredson and Hirschi (1986) argue that distinctions between prevalence and incidence rates as well as other dimensions of career criminal research do not deserve the theoretical, research or policy attention that they have received. The work of Gottfredson and Hirschi (1987; 1988; 1990) rejects the career approach to studying criminal behavior and instead suggests that the focus of criminological research should be the substantive, theoretical aspects of crime causation. It is their theoretical focus that leads Gottfredson and Hirschi to conclude that all criminal activity is the result of an underlying criminal tendency ("criminality") and that the disaggregation of the various aspects of the criminal career is unnecessary as they are all a result of the same causal factors. Any observed differences among individual offending patterns would be due to situational factors such as opportunity rather than different theoretical constructs that would contribute to a violence potential or property offending potential.

Loeber and Le Blanc (1990) recently provided additional descriptors of offending which reflect both the static dimensions of offending (e.g., prevalence and incidence) and dynamic concepts such as activation, aggravation and desistance. Activation refers to such processes as the increased frequency of offending over time. Aggravation refers to a developmental

dimension of offending such as the escalation in seriousness of offending over time. Desistance may be conceptualized as a slowing down in offending over time or a change in the nature of offending that is indicative of deceleration, de-escalation or termination in offending.

The static and dynamic concepts as conceptualized by Loeber and Le Blanc (1990: 376) are generated by the perspective of developmental criminology which focuses on temporal within-individual changes in offending. This approach offers a dynamic dimension that much of the research generated by the criminal career approach lacks and focuses on the study of within-individual changes in offending that the Gottfredson and Hirschi perspective has neglected (Loeber and Le Blanc, 1990: 390). Analyzing within-individual changes allows for the possibility that the trajectories of offending may vary across offenders. The developmental perspective agrees that the underlying propensity for deviance may remain stable as is suggested by Gottfredson and Hirschi (1990) but that the manifestations of this propensity may vary over the life course.

The criminal career approach of Blumstein et al. (1986) and Gottfredson and Hirschi (1990) generates two competing theoretical perspectives in criminology concerning the patterns of offending we should expect from individual offenders. The of perspective of Gottfredson and Hirschi predicts a generality of deviance across offenders as different deviant behaviors are all manifestations of the same construct. More specifically, persons

with low self-control will engage in a variety of deviant behaviors as opportunities present themselves and thus the nature of offending will be diverse both within the individual offending process and across individuals. According to Gottfredson and Hirschi (1990) the focus of research should be the explanation of this general tendency towards deviance (i.e. criminality or low self-control) and not any particular aspect or manifestation of this behavior (Osgood et al., 1988).

In reference to escalation, whereas the criminal career perspective suggests that we may expect escalation in offending seriousness over the life course, Gottfredson and Hirschi (1990) predict that de-escalatory processes will occur as all offenders "age-out" of criminality. Gottfredson and Hirschi claim that aging out is invariant across all social variables (e.g., race, sex) and societies (Hirschi and Gottfredson, 1983). If all juveniles do commit less crime as they age then we should not expect escalation in adult offending patterns but rather de-escalation both in reference to the nature and frequency of offending.

According to the criminal career perspective, various dimensions such as the age of onset and desistance, the frequency and seriousness of offenses committed, and career length, are all thought to represent different dimensions of offending which may be influenced by different causal factors as well as one another. In addition, these different dimensions of the criminal career represent different policy issues concerning the prevention of

criminal behavior such as intervention, incapacitation and deterrence (Blumstein et al., 1986).

The agenda for future research as suggested by the National Academy of Sciences (Blumstein et al., 1986) proposes a comprehensive examination of all of the dimensions of the criminal career. Recent work has assessed the level and age of initiation into criminal activity, the frequency of offending and the level and age of desistance from criminal activity for individual offenders (see the National Academy of Sciences "Criminal Careers and "Career Criminals" Volume I and II). Once a group of active offenders has been isolated, the patterns of their offending can be investigated in reference to the types of offenses that have been committed and the sequence of these offenses. Offense sequences can be analyzed to detect possible patterns of specialization, diversity, escalation or de-escalation. Specialization refers to a pattern of offending where the same offense or offense type is repeated as the offending continues. Careers lacking in a pattern of specialization would be characterized by diversity in offending. Escalation is the progressional pattern of moving from less serious to more serious types of offending and de-escalation refers to the opposite pattern i.e., a decrease in the seriousness of offending over time (Blumstein et al., 1986). Once various trajectories of offending are detected, the criminal career perspective suggests further investigation into the factors that may be related to the diversity found in individual

criminal careers.

Whereas the work of Gottfredson and Hirschi and Blumstein and his colleagues present rather polar versions of the nature of the offending process, the recent developmental perspective as articulated by the work of Le Blanc and Frechette (1989) and Loeber and Le Blanc (1990) offers a view of offending that may provide an alternative theoretical view of the offending process as it has been previously represented by traditional criminological theory. The theoretical perspectives of criminality, career criminals and developmental criminology will all be evaluated in terms of their usefulness in reference to the present findings.

Although the debate concerning the usefulness of the career criminal approach is far from over, the present research will employ many of the methods and terminology previously used by criminal career researchers. Specifically, this research pays particular attention to possible escalation and specialization patterns as defined by Blumstein et al. (1986) for a group of offenders from the juvenile phase into adulthood. In addition to describing the patterns of offending that exist, these patterns will also be interpreted in reference to the theoretical image of offending that is suggested.

A. Offending Patterns and Intervention Policies

The combination of concern for public protection and crime control and pressure upon criminal justice resources suggests

that there should be an emphasis on more effective resource allocation. Hirschi (1986) argues that for policy purposes the important distinction is that between criminals and noncriminals (i.e., prevalence). Others have suggested crime control may also be effective when used to reduce the frequency (i.e., incidence) of offending for already active offenders and to intervene at the appropriate time for those types of offenders who may be escalating or beginning to specialize in their offending patterns.

There are many assumptions made by laymen and criminologists alike concerning patterns of criminality. These assumptions generate a theoretical imagery of offending about how the criminal career, if it exists, develops and how the criminal justice system can most effectively respond. One image of offending is that of the offender devoted to a life of crime (i.e., the career criminal) who escalates in the seriousness of and/or becomes more specialized in his offending over the life course. This view of criminal behavior suggests that the processes of offending will be characterized by progressional and developmental trends over time. An alternative view of offending is that of a process whereby an offender becomes less serious and less active in his offending as part of a maturational "aging out" process. These two different patterns would suggest two entirely different crime control policies. If we can find patterns of specialization in offending then our most effective crime-specific intervention policies will be those that are aimed

at individuals who have previously committed these types of offenses. If our intent is to control more serious crimes and we find that offenders become more serious offenders later in the life course i.e. adulthood, then our point of intervention may be delayed. However, if de-escalation is the pattern of offending then early intervention such as during the juvenile stage, would be suggested.

Selective incapacitation policies attempt to identify certain high risk offenders who may be escalating in the seriousness of their activity and those at risk of repeating similar behaviors (specialists), and to incapacitate these individuals (as opposed to all such offenders) once identified. The effectiveness of a policy of selective incapacitation hinges upon the identification of persons who pose a future risk and are not on the downward decline in the frequency and/or seriousness of their offending. A selective incapacitation program would incapacitate individuals who were either escalating or maintaining the frequency and seriousness of their offending. Thus, it is crucial that we identify if and at what point in the life cycle offenders begin to specialize and/or escalate in the seriousness of their offending. If we are unable to identify points of specialization, escalation or de-escalation then our policies of selective incapacitation that are based on these images of offending will be ineffective.

Recent research suggests that the fundamental assumptions of a policy of selective incapacitation- that criminal behavior is

patterned as opposed to diverse and that we can predict the nature of future criminal activity (particularly serious crimes) - are not supported (Gottfredson and Gottfredson, 1991). Since incapacitation is a major crime control strategy, it is essential that we further assess the efficacy of this policy.

Related to the issues of incapacitation and intervention is the question of how to process juvenile status offenders. A major focus of reform within the juvenile justice system during the 1970's concerned whether or not status offenders should be removed from the jurisdiction of the juvenile court. Status offenders are those individuals who engage in behaviors which would not be defined as criminal if they were adults (such as truancy, running away, consensual sexual behavior, smoking, drinking, curfew violation, disobeying authority, incorrigibility and waywardness) (National Council on Crime and Delinquency, 1975). The National Council on Crime and Delinquency (NCCD) as well as a number of independent researchers (e.g.; Ketchum, 1977; Clarke, 1975) suggested that subjecting a juvenile to judicial processes for a status offense does not help the juvenile and may cause further harm as a result of stigmatization processes (NCCD, 1975). The deinstitutionalization movement has similarly suggested a separate track for status offenders to avoid what labeling theorists would see as stigmatization resulting from exposure to the same systems as those who have committed criminal offenses (Lemert, 1951).

In addition to the stigmatization argument it has also been

suggested that status offenders are a different type of offender than other delinquents and that escalatory processes do not occur for these individuals (Clarke, 1975). In contrast to the argument for the removal of status offenders from the jurisdiction of the juvenile justice system other research has found that status offenders are troubled youth that be even more difficult to help than those charged with delinquent offenses (Martin and Snyder, 1976). Either of these arguments depend on being able to identify juveniles who at some point are committing only status offenses and linking their escalation into criminal activity with exposure to the juvenile justice system (Kobrin et al., 1980). Much research suggests the contrary and finds that the majority of status offenders cannot be distinguished from other juvenile offenders in terms of the type of offenses they commit over the course of juvenile offending (Thomas, 1976; Klein, 1971). Based on his own research, Thomas (1976: 430) suggested that 1) many of the juveniles charged with status offenses were previously charged with more serious offenses 2) status offenders were more likely to recidivate than juveniles charged with misdemeanors or felonies and 3) there is little evidence that criminal justice processing is associated with more serious delinquency.

In reference to the issue of the existence of different types of juvenile offenders, the Serious Habitual Offender Comprehensive Action Program (SHOCAP) suggests that the failure of some intervention programs and policies may be due to the mix

of offenders in these programs. Therefore, according to SHOCAP, it is essential for the success of these programs that offenders such as those who specialize or are escalating in the seriousness of their criminal activity, including status offenders, be identified (OJJDP, 1988).

As noted by Kobrin et al. (1980) the samples used by some researchers such as Klein (1971) may have been biased in favor of not finding a group of individuals who specialize in status offending. Klein's (1971) sample of gang members or other samples who draw their members from correctional school records (e.g.; Glueck and Glueck, 1950; Bursik, 1980) suggest that serious behavior may be a requirement of their membership in that group.

Although the more recent focus is the removal of status offenders from detention facilities rather than the full divesture of status offenders from the juvenile justice system, both of these policies assumes that there exists an identifiable population of status offenders and that exposure to some level of the juvenile justice system causes a progression from status offending to more serious types of delinquency. Part of the focus of this research will be to identify specialization in status offending and examine the direction of status offending over time.

B. Data Requirements

The potential for criminal behavior exists across various life

phases including adolescence, young adulthood and middle age and it is essential to collect longitudinal data following the same individuals throughout these phases. Recent research including the work of Blumstein et al. (1986), Hindelang et al (1981) and Farrington et al. (1988) suggests that longitudinal research is required to disentangle the potential time-dependent relationships among variables throughout the course of development for an individual.

In reference to the debate over what data are needed to study criminal activity, Gottfredson and Hirschi (1987) argue that longitudinal research is not superior to cross-sectional research in its ability to reflect patterns of offending and longitudinal research has not offered additional insight into the causes and correlates of crime nor the appropriate intervention strategies. However as noted by Le Blanc and Frechette (1989: ix) static dimensions such as the distribution and correlates of crime may be assessed with cross-sectional surveys but the dynamic issues of offending such as continuity, stability, the sequence of events and the causal factors associated with changes in offending can only be measured with longitudinal data. However, if the rate of offending at one point is indicative of the rate of future offending and, the nature of criminal behavior cannot be predicted as it is diverse and random, then cross-sectional data may serve the needs of modeling offending patterns.

C. Offending Patterns and Criminological Theory

Various imageries of the nature of offending are generated by traditional criminological theories. For example, as conceptualized by Gottfredson and Hirschi (1986; 1987; 1988; 1990), low self-control is the core causal mechanism of criminality, and will be manifested as diverse events as determined by the opportunities to commit crime.

The theoretical perspective of Blumstein et al. (1988a) suggests that there may be a progressional trend over time for some offenders (and offense types) towards more serious offending (escalation) and specialization (rather than diversity). These different offending trajectories may be indicative of different causal processes as well. The specific processes and principles of behavior that create paths of offending have not been clearly articulated by the criminal career approach. The recent work of Loeber and Le Blanc (1990) criticizes current criminological theory for its lack of a developmental focus which has the ability to explain the complex patterns of offending both across time and individuals.

In addition to these perspectives, the theoretical imagery present in many ethnographic works suggests a specialized offender for some crime types such as robbery and burglary (Hartjen and Gibbons, 1969; Glaser, 1974; Shover, 1971). It is the task for criminology to reconcile the ethnographic descriptions of an individual safecracker who commits hundreds of crimes of the same type throughout the life course, with the

quantitative findings that suggest more diverse offending patterns. Based on the abundance of theoretical imageries concerning the nature of offending it is essential to assess their usefulness in describing the empirical findings of current research.

D. Summary

All of the points of debate concerning whether or not a "criminal career" exists, or whether there is such a person as a career criminal, cannot be resolved within the context of this research. However, the issue of offense seriousness and whether or not certain individuals do escalate and specialize in their offending can be assessed and potentially offer insight into the nature of offending.

This study will review the previous research on the nature of offending and test one aspect of the debate about the nature of criminal activity; specifically, whether or not there is specialization and escalation in offending patterns for a group of offenders throughout a major portion of their lives. A review of the literature in this area will illustrate diverse findings in part due to the nature of the samples used as most of the studies reviewed here used samples consisting of either juvenile or adults. Before we can begin to close the book on the debate about the nature of offending processes further tests which include analyses of offense patterns for a common sample of offenders who begin as juveniles and continue through adulthood

are needed. The data used for the present research includes offending histories for a group of individuals during both the juvenile and adult phase. Describing the nature of their offending is important theoretically, practically and methodologically.

Chapter Two

Review of the Literature

This chapter will review studies that have empirically investigated whether or not there is evidence of specialization and escalation in offending patterns. In addition to reviewing the methodologies and findings of these studies, I discuss sampling and methodological restrictions that limit the generalizability and comparability of their findings. This review contributes to the identification of problems and prospects in existing research on the analysis of crime switching patterns as well as directions for future research.

A. Definitions of Specialization and Escalation

Many of the studies included in this review have been previously reviewed by other researchers (Bursik, 1980; Klein, 1984; Kempf, 1987; see especially Cohen, 1986) and I will rely on their work as well as supplement it with additional studies and reviews.

Most studies of crime switching patterns have focused on both escalation and specialization because both processes reflect the nature of offending over time. One potential problem for this area of research would be the definitions of escalation and specialization that have been used by researchers. However, most studies of crime switching have employed the same broad definitions of escalation and specialization as defined by the

work of Blumstein et al. (1986).

Studies using matrix analysis to assess crime switching have measured specialization by higher probabilities of repeating the same offense versus a different type of offense on the next arrest. This represents only one manifestation of a process of specialization in offending over a specific period of time. As recently noted by Le Blanc and Frechette (1989) specialization implies a reduction in the versatility of offending over time and may be assessed by methods other than matrix analysis and probabilities of crime switching.

Escalation refers to the tendency to move towards more serious types of offending across time and specialization as the tendency for an individual to repeat the same type of offense. When categories of offending are broad, processes of specialization and escalation within these categories are lost. For example, when burglary is included within a broader category of property offending, information specifically about patterns of burglary offending would not be reflected. Research that employs crime categories such as property offenses rather than individual crimes such as burglary is likely to find more specialization as the possibilities for repeat offending increases as does the number of offenses included in each category.

Up until very recently there has been little debate in this area as to the definitions that should be used and the definitions of specialization and escalation as conceptualized by Blumstein et al. (1986) has dominated most empirical work. The

studies reviewed here generally use these same definitions of escalation and specialization but the offense categories of possible crime switching (e.g., property, personal), have varied. One neglected area of research is the extent to which the composition of these categories affects the findings. This issue as well as the usefulness of a legal classification scheme will be assessed as part of the analysis for this research.

B. Previous Research

Virtually all of the studies that will be reviewed here used longitudinal data, but other earlier studies ranging from and including the autobiographical, descriptive, correlational, and factor analytic have used cross-sectional data to model the nature offending. These studies have been previously reviewed elsewhere (see Cohen, 1986) and the focus of the present review is the more recent research that has used longitudinal data to assess patterns of offending across time. The dominant mode of analysis involves transition matrices made up of individual transition probabilities reflecting the extent to which one type of offense is followed by the same or different type of offense. I will review studies employing this method and present the specific assumptions and techniques of transition matrix analysis in the discussion of the data and measures used in the present research.

One of the earliest escalation studies (Frum, 1958) used a cross-sectional sampling frame, and after constructing criminal

profiles of the sequence of crime types for each individual, sorted these sequences to form subsets that exhibited the same general pattern. Frum concluded that there was a general pattern of escalation but as noted by Cohen (1986), because of the nature of the Frum sample (prison inmates) there will be a bias towards more serious offense types at the end of their criminal history and directly prior to imprisonment. Offenders who were committing less serious crimes were less likely to be in prison and thus less likely to appear in this sample. I note this early study because of the relevance of this issue to more recent work that employs samples of adjudicated delinquents or adult prisoners.

Using a much larger sample of juveniles (4,079), Shannon (1968) examined police contacts to determine if there was evidence of escalation. Shannon performed various factor analyses to see if there was any meaningful clustering of contacts and also assessed what he referred to as "continuation probabilities" i.e. the probability that certain offenses would occur on successive contacts by age at contact. Shannon reported no evidence that the seriousness of contacts increased with contact order. Shannon also noted that most of the contacts in his sample were single contacts for minor violations. This issue is also relevant to current research as the type of offender at least in terms of the frequency of their offending should be considered when profiling offending patterns. We must allow for the possibility that the nature of offending could be different

for those offenders who commit only a few offenses as opposed to many offenses. However, the potential exists that although there are differences in the frequency of offending for offenders, the nature of offending may be similar for high-rate and low-rate offenders.

Many of the more recent studies of crime switching patterns across time analyze transition matrices that reflect potential escalation and specialization patterns that may occur throughout a criminal career. These transition matrices consist of individual transition probabilities which reflect the frequency that an offense of type "j" will follow an offense of type "i". Individual matrices reflect for a particular pair of arrests the probability that one arrest was followed by the same or a different type of subsequent arrest. Data permitting, subgroup variation in these probabilities can be analyzed for groups such as different categories of age, sex, race, and arrest number. In addition to modeling offense switching patterns as the raw transition probabilities of a matrix, recent work suggests that these matrices may be better viewed as contingency tables (Bursik, 1980; Blumstein et al., 1989). This approach will enable the researcher to control for the fact that the general prevalence of some offenses are skewed and thus some offenses are more likely or less likely to occur than others. The raw probabilities indicating a repeat probability (specialization) would be higher for these more prevalent behaviors simply due to their frequency rather than any crime-specific processes.

A study prepared for the President's Crime Commission by the Institute for Defence Analysis (as cited by Hood and Sparks, 1970) was one of the earliest attempts at assessing the probability of being re-arrested for a similar crime. Again employing a transition matrix method of analyzing crime switching patterns, Wolfgang et al. (1972) analyzed patterns of offending as represented by police contacts of a subset (3,475) of larger sample of 9,945 juveniles from their cohort study. Wolfgang et al. collapsed individual crime types into six categories of offending that were intended to represent homogeneous types of offenses. These categories or "states" were: nonindex crimes, personal injury crimes, theft offenses, property crimes, offenses that combined some aspects of the first four states (e.g., robbery), and desistance. Wolfgang et al. (1972) found no significant evidence of specialization or escalation in offending for this sample of juveniles.

Other studies have used the official court records of juveniles in their assessment of specialization and escalation (Bursik, 1980; Thomas, 1976; Rojek and Erikson, 1982; Smith and Smith, 1984). Bursik (1980) used a random sample of 750 youths who had been adjudicated delinquent by the Cook County, Illinois juvenile court and had reached their 17th birthday by the time of the data collection. Bursik defined four possible states of offending: personal injury, personal property, impersonal property, and "all others". As noted by Cohen (1986) it is unclear as to what this "all others" category includes. Using a

more refined analytic technique than did Wolfgang et al. (1972) who only looked at the raw probabilities contained within the matrices, Bursik viewed the transition matrices as contingency tables and tested to see if the observed probabilities departed from what could be expected by chance.[1] Thus, Bursik tested to see if there was a tendency for youths to specialize in their offending more than would randomly be expected. Although the Bursik study found some evidence of specialization, it was not the dominant feature of the offending patterns of most of his sample.

The Wolfgang research used police contacts as the indicator of criminal activity and Bursik used the court records of adjudicated delinquents. The further along in the system that the sample of events is selected such as arrest versus conviction, the greater the likelihood that the sample includes more serious offenses and offenders and we should also be cautious in comparing the results of studies using cohort samples to those that focus on a group of more habitual offenders. In reference to the usefulness of official records, any official records may actually over-represent the degree of specialization as police may look for a certain individual in connection with a particular crime based on that individual's previous record.

Although Bursik's research did not specifically look at the offending patterns of those juveniles who commit status offenses

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[1] Bursik employed the Chi-square test of independence to assess the degree of specialization in offending. This technique will be discussed further in the data and measures section.

other studies have considered the extent to which status offenders, those juveniles who commit such offenses as running away, truancy, waywardness, etc., represent a separate category of juvenile offender. Based on inconsistent findings, one side of this debate suggests that juvenile status offenders do not become involved in other kinds of misconduct (Clarke, 1975). It is also suggested that if status offenders do become involved in other and possibly more serious types of delinquent behavior, this is due to the stigmatization they have suffered due to their juvenile justice system contact as status offenders. In response to this argument, almost all states have removed status offenders from juvenile detention centers at least in the extent to which they are incarcerated with delinquent juveniles. This policy shift seems intended to both reduce their contact with more serious delinquents, to avoid the institutionalization stigma of juvenile justice system processing, and to respond to a lack of space in juvenile detention centers. It is still unclear based on recent empirical evidence that avoiding the juvenile justice system processes will prevent escalation among status offenders.

Thomas (1976) analyzed the arrest records of a sample of juveniles, many of whom had been charged with status offenses. Thomas found that many of the juveniles who had been charged with status offenses had previously been charged with other types of offenses and that those juveniles for whom the first court appearance was for a status offense were more likely to recidivate than those first charged with a misdemeanor or a

felony. Thomas' (1976) findings suggest that status offenders do not constitute a "special" juvenile offender category and that legal processing is not the cause of their subsequent involvement in more serious delinquency. Recent evaluations of programs that have removed status offenders from detention facilities have found mixed results which are in part due to the finding that many status offenders have delinquent offenses that preceded their status offending.

In direct contrast to Thomas's (1976) findings, are the Clarke (1975) found that boys whose first official offense was a status offense were much less likely to recidivate than those boys whose first offense was a criminal act. These data indicated no pattern of specialization among status offenders and most of the boys committing criminal acts did not begin as status offenders.

Rojek and Erikson (1982) analyzed the transition probabilities of the offense histories of 1200 juveniles who had been processed by the juvenile court. This sample of offenders has potentially less of the "serious offender" bias as the offenders had only to have at least one arrest and been referred to juvenile court as opposed to having been sentenced or institutionalized. Rojek and Erikson (1982) suggested, as did Klein (1979)[2] that delinquency is a "cafeteria style" behavior

[2] Klein (1979) observed the behavior of gangs in Los Angeles from 1962-1968 and found that the gang members engaged in a variety of offending including theft, status offenses, assaults, drug and alcohol violations, etc., and that there was little evidence of any sort of specialized pattern.

and that neither status offenders nor other more serious types of juvenile offenders are likely to specialize in their offending nor escalate in the seriousness of their offending during the course of their delinquent career.

Using the arrest histories of 776 male juveniles who had been institutionalized in New Jersey between October 1977 and December 1978, Smith and Smith (1984) assessed specialization in offending among five offense categories: nonindex offenses, property offenses, damage offenses, robbery and personal injury. The results provided support for the diversification/situational delinquent career perspective. Movement occurred between all the offense categories and there was no evidence of movement into more serious crimes. However, some specialization tendencies were observed with delinquents showing a slight tendency to repeat more offenses in the same class as the initial offense than would be expected by chance (Smith and Smith, 1984: 155) Also these results indicated that the specific type of offender most likely to specialize was the robbery offender.

Various descriptive studies have suggested that some crimes such as robbery constitute a professional and thus specialized crime category (Gibbons, 1977). Shover's (1971) descriptive work on burglars was intended to supplement previous studies such as those which had focused on professional thieves (Sutherland, 1937), pickpockets (Maurer, 1964) drug users (Becker, 1953; 1955) armed robbers (Einstadler, 1966; 1969) and bank robbers (Camp, 1968). As illustrated by this work as well as Shover's, there is

the assumption (which has been supported by these descriptive studies) that there exists a group of offenders and their offenses which require some level of specialization. It is the task of criminological theory to reconcile findings from ethnographic studies with those of a more quantitative nature.

Kempf (1987) reanalyzed the 1958 Philadelphia Birth Cohort data in an attempt to begin to reconcile the empirical findings of specialization research with the current state of criminological theory. The Kempf research investigated the offense patterning of male chronic delinquents from Philadelphia, up to age 26. The findings supported minimal levels of specialization within an overall pattern of more versatile behavior. This research also pointed to the urgent need of theoretical development in the explanation of various offending patterns.

Another more recent study conducted by Farrington et al. (1988) studied the offending patterns of nearly 70,000 juveniles who had been referred to juvenile court in two different jurisdictions. In addition to the strength of their large sample size, this sample also included a sufficient number of females to allow for the analysis of gender differences in offending patterns. Also, instead of using crime categories that contained several offenses (e.g., property crime), the Farrington et al. analysis involved a large enough sample that it was possible to analyze offense switching among 21 different specific offenses. Thus, actual offense specialization could be tested versus the

prior analyses which combined various offenses to create categories of offending.

Using transition matrix analysis, Farrington found some evidence of specialization for the offenses of running away, liquor violations, incorrigibility, burglary, motor vehicle theft and drug offenses. Those offenses which were least likely to be found within a pattern of specialization were vandalism, possessing stolen property, traffic offenses and trespassing. These specialization and non-specialization patterns were present across both jurisdictions, sexes and age categories. Farrington et al. suggested that at least 20% of the sample were specialists and that females were more likely to specialize than males, particularly with runaway offenses. This finding may illustrate a juvenile justice system bias of a greater likelihood of prosecuting juvenile females for running away and reflects a more general concern about the extent to which arrest histories reflect offending processes or juvenile and criminal justice system processes.

The Farrington et al. (1988) research also found that offending was more specialized with each succeeding offense. If in fact, specialization is more likely to occur in later offense transitions the interpretation of this finding could be of a developmental nature or viewed as due to a selection/attrition process. Further analysis indicated that this was not due to less specialized offenders dropping out of the sample but rather an increase in specialization for all offenders as offending

continues. More serious offenses such as robbery, aggravated assault and motor vehicle theft increased with later referrals. As suggested by Farrington et al. (1988), criminological theory should be able to explain both specialization and non-specialization patterns and differences in the level of offending across different life stages.

More recently, Blumstein et al. (1989) provided insight into the crime-type switching patterns for a large sample of adults (n=32,197) arrested in two different Michigan jurisdictions in the 1970's. Due to the large number of individuals contained in their sample, this analysis was also able to analyze more specific crime switching trends. Blumstein et al. used ten crime categories consisting of: murder, rape, robbery, aggravated assault, drugs, burglary, larceny, auto theft, and fraud. Transition matrices were generated and tested for probabilities that appear which are greater than those expected by chance. The subgroups of comparison were those based on race, jurisdiction, and persister versus desister differentials. Results of the analysis identified racial differences in specialization with white offenders more likely to specialize in drugs and fraud and black offenders more likely to specialize in auto theft. The coefficients of specialization in general for black offenders were smaller than those for white offenders. Blumstein et al. provided a possible explanation of the race differences in the levels and types of specialization. They suggest that if as juveniles black offenders engage in more serious behaviors then

trends of escalation and specialization may occur earlier for blacks and thus not be reflected by adult offending histories. As noted by Blumstein et al. (1989) these sorts of hypotheses demand data that encompass both the juvenile and adult criminal histories for the same individuals. The specialization patterns found were similar across both jurisdictions and Blumstein et al. (1989) noted that this cross-jurisdictional consistency provides support for using arrest records for the study of criminal offending patterns as at least in this case, there appears to be no effect of specific jurisdictional processes.

The Blumstein findings indicated that there were few differences between the adult persisters (those with four or more arrests) and the "transient" (less than four arrests) offenders in this sample. However, for white offenders there was evidence that specialization increased over time (escalation) for burglary, fraud, and drug offenses and offending decreased in seriousness over time (de-escalation) for black auto theft offenders. The overall pattern of adult offending as reflected by the results of this research found evidence of specialization at some level for <u>all</u> crime types.

The only study using transition matrix analysis that examines offending patterns across both the juvenile and adult stages is Wolfgang et al's. recent (1987) analysis of a subgroup of 567 individuals who were part of the original Philadelphia Birth Cohort of 1945. Official criminal history information is available for this sample from birth to age 30. This analysis of

offense specialization divided the offenses into five types: nonindex, index, injury, theft, damage, and combination (miscellaneous). Previous analysis on part of this sample that included information only on their juvenile criminal history information (Wolfgang, 1972; Figlio, 1981) had found no evidence of either escalation or specialization. The inclusion of adult offenses generated results very similar to those that had been found in the juvenile only sample. Although there was some evidence of offense specialization with injury offenses, the evidence was weak. There is no greater likelihood within this sample for more serious offenses to appear in the later offense transitions (arrests) or for certain types of offenses to be repeated. It should be noted that Wolfgang et al.s' (1987) analysis did not involve any of the techniques suggested by other researchers for assessing whether or not the probabilities of the transition matrices were larger than might be expected by chance (Bursik, 1980; Kempf, 1987; Blumstein et al., 1989). Thus, it is difficult to compare the results of the Wolfgang et al. (1987) analysis to those that have employed analytic techniques which control for the prevalence of various offense types.

Tracy et al. (1990) calculated the probabilities of crime switching for the juvenile arrests of a 1958 birth cohort and tested these probabilities for significance using Bursik's residual method. Some level of specialization was found for virtually all categories with more chronic juveniles more likely to specialize. By examining the average severity of crimes at

each transition Tracy et al. suggest that in most cases when offenses were followed by a subsequent offense the severity of the latter was greater than that of the previous offense, indicating evidence of escalation in offending.

Until very recently, matrix analysis has dominated studies of specialization and escalation in offending. Based in part on the weaknesses of this analytic technique, the work of Le Blanc and Frechette (1989) employs multiple analytic techniques to assess the developmental processes of offending. It is beyond the scope of this research to detail all of the techniques used by these researchers but one of the guiding principles of their theory of offending is the orthogenetic principle. According to Le Blanc and Frechette (1989), development, including offending, can be expected to proceed from a state of lack of differentiation to a state of relative differentiation and that this process will be hierarchical in its progression. Their findings indicate that escalation starts at the onset of adolescence but did not progress sequentially into adulthood. They suggested that by the time offenders reach adulthood they have committed virtually all of the different offense types and begin to either specialize based on opportunity or follow the path of least resistance offered by some activities. The work of Le Blanc and Frechette (1989) analyzes offending patterns of individuals during both the juvenile and adult phase but does not employ the methods of analysis (e.g., transition matrix analysis) that have recently dominated this kind of research. Therefore,

although I will be unable to compare my findings from matrix analysis to this work, I will consider the work of recent developmental criminologists in reference to the construction of criminological theory and directions for future research.

C. Typology Development

Matrix analysis is but one technique that has been used to detect and describe patterns of offending. Typology development has a long history in criminology for describing both the behaviors (offense-types) of offenders and their biological, psychological and social characteristics. Behavioral typologies are based on the types of offenses committed and others are based on various characteristics of the offenders such as temperament, body type, and social factors. The social typologies of delinquency have included Merton's strain theory (1938) which suggested that delinquents may adapt to the inequality of goals and means by becoming retreatists, rebels or ritualists. Cohen's (1955) theory of delinquency suggested that boys will adopt one of three roles and become either delinquent boys, corner boys or college boys. Cloward and Ohlin (1960) presented a typology of delinquency based on the availability of opportunities that generate various behavioral adaptations. Gibbons (1965) presented a typology of offending based on the role played by the offender which was for the most part behavioral and based on the type of criminal activity that offender committed (e.g., professional thief, violent sex offenders).

More recently, typologies have been predominantly behavioral in that they have been used to reflect offending patterns found for a particular group of offenders (LeBlanc and Frechette, 1989). As with matrix analysis, the classification schemes may reflect a legal classification where categories reflect specific types of crimes i.e. burglary, crime categories such as property crimes or combinations of crimes such as "property and drug offenders" (see Chaiken and Chaiken, 1982). In addition to a type of behavior, typologies may also reflect the extent of involvement over the life course such as low-level or high-level offending (Chaiken and Chaiken, 1982) or persistence/desistance which considers whether or not the offending continued across various phases of the life course (Blumstein et al., 1989; Kempf, 1987; Le Blanc and Frechette, 1989).

Typology development offers an alternative measure of specialization and these findings will be compared to those of transition matrix analysis. The typology used in the present analysis is behavioral in nature and follows the individual offender across a significant portion of the life course.

D. Sampling Problems

Prior empirical findings in the area of offense patterning suffer from sampling and methodological restrictions which have contributed to the diverse findings of prior empirical work. The issue of sampling concerns not only the population from which the samples are drawn but also the sample of offenses to be studied.

Most offense patterning studies use some form of officially collected data such as police contacts (which may not lead to an arrest), arrest records, and convictions. There are several potential biases that may result from the use of official records. Official data reflect only those activities that come to the attention of official sources. Official statistics such as arrest records and court records reflect law-enforcement activities as an organizational process involving discretion in the decision-making activities. The procedures for handling police contacts and other pertinent aspects of record-keeping such as the operational definitions of terms (e.g, police contacts versus arrest) could affect both the reliability and validity of the data. The validity of official records has been assessed using various validation techniques and in many cases this research has found a high level of convergence between official sources and other independently collected sources of data such as teacher, parent and self-reports (Farrington, 1973; Laub, Sampson and Kiger, 1990).

In addition to these issues another source of bias in official records arises from the chance that more serious behavior may come to the attention of officials and thus more serious offenses as well as offenders may be over-represented by official data and likewise less serious offenses and offenders may be under-represented (Cohen, 1986). This issue certainly has ramifications for criminological theory if in fact criminological theory about offender motivations and background characteristics

is actually theory about police behavior and the criminal justice system.

Aside from the potential bias resulting from official data, another sampling restriction that has affected the generalizability of the findings of prior research is that these findings, for the most part, have used samples of juvenile males (Wolfgang et al., 1972; Rojek and Erickson, 1982; Smith and Smith, 1984). Samples that included females or blacks contain such small numbers of these groups that with few exceptions, it has been analytically impossible to examine race or sex differences in offense patterning (particularly with a technique such as matrix analysis).

Also of concern to the issue of generalizability is that the list of offenses used in these studies varies, with some reflecting only minor crimes or more serious crimes, and others including status offenses and desistance from crime as separate categories. Most studies collapse various offenses into offense categories such as violent, property, and status offenses. However, the composition of these categories varies from study to study.

The creation of these states of offending is necessary because of the relatively small samples of offenders. In cases where the number of cases was large-- such as the 32,000 adult offenders studied by Blumstein et al. (1989),-- finer distinctions may be made to represent the possible types of offense switching. The Blumstein et al. (1989) analysis was able

to use 10 different crime categories which represented limited crime-types such as homicide, burglary and robbery. As previously noted, some studies include the category of desistance i.e. the probability that the offender will desist his/her offending. The studies that employ a desistance category are usually juvenile samples where desisting from juvenile crime and thus contact with the juvenile justice system occurs at some point for all offenders because they either desist from criminal activity or enter the criminal justice system as adults. When constructing crime-type categories, it is necessary that the categories constructed be mutually exclusive and that these categories represent offenses that are comparable to those that appear in official records, as well as reflect meaningful distinctions among different types of offenses.

Although Blumstein et al's. (1989) recent analysis of crime-type switching patterns included specific offense categories, the results of their analysis indicated the presence of clusters of offenses, offering support for the types of categories used by previous researchers. The present research will use categories of offending that represent different policy issues and provide a basis of comparison to previous findings. An alternative classification will also be used to reflect more specific categories and the prevalence of certain types of offenses in the Glueck data.

E. Analytical Issues

In addition to sampling problems, another problem in conducting and interpreting the nature of offense patterning concerns the methods used to analyze the data. Aside from a few early studies (Frum, 1958; Peterson et al., 1962; Erickson and Empey, 1963) that used offense mixes to represent the frequency of certain behaviors for a group of offenders, the type of data that are used for dynamic analyses of crime type switching are longitudinal data. Although a cross-sectional representation of an offense mix for a group of offenders may provide information concerning the frequency of occurrence for various offense-types, the temporal ordering of offending is lost.

Studies using matrix analysis have for the most part focused on pairs of offenses. It is possible to look at offense triples and quadruples for offense specialization but this would require large samples of high-rate offenders. Based on the inadequacies of a single method of studying offending patterns across time, the present research will use multiple methods to compensate for the weaknesses of each.

F. Theoretical Rationale

In addition to the sampling and methodological restrictions of previous escalation and specialization studies is the lack of theoretical development in this area. Most studies have simply presented the results of their transition matrix analysis with no hypotheses as to what causal relationships and patterns might be

this area seems to be generated by "conventional wisdom" (Blumstein et al., 1989) and atheoretical or unexamined assumptions. The theoretical verdict in reference to the explanation of the diverse findings of the research on offending processes is not in. Until there are significant numbers of studies that have analyzed offending patterns for the same individuals from childhood through adulthood we are unable to provide a full description of the nature of offending over the life course.

The present research intends to provide theoretical rationale to the explanation of offending patterns by examining offending patterns in a way that has been in large part untapped. This includes following the same individuals across time as well as considering crime category composition and the usefulness of current imageries of the criminal lifestyle.

G. Summary

The objective of this review of prior research of offending patterns has been to describe the techniques, shortcomings and findings of previous research on specialization and escalation in offending. As has been illustrated, the diversity of findings are in large part a manifestation of technique and sample idiosyncracies. A review of the literature found some empirical support for all of the competing theoretical perspectives - diversity, specialization, and escalation. Some studies found specialization, sometimes within specific groups (Bursik, 1980;

Rojek and Erickson, 1982; Smith and Smith, 1984; Farrington et al., 1988; Blumstein et al., 1989), others found no indication of specialization and/or escalation (Wolfgang et al., 1972; Figlio, 1981), and still others found strong tendencies across various offense types for both escalation and specialization (Robins and Wish, 1977). Based on the diverse nature of the samples and methods used in these studies, the competing findings are not surprising. However, in addition to technical and sample variations, specialization and escalation patterns varied by crime type and life stage (i.e. juvenile versus adult data).

In addition to various sampling and methodological inadequacies there has been a lack of theoretical development concerning the diverse offending patterns that has been found in previous research. The next chapter will further review previous research with special attention to the contributions made to the development of a theoretical perspective that can explain the diverse nature of offending patterns as well as the differences in juvenile and adult patterns of offending.

Chapter Three

Theoretical Development and Hypotheses

This chapter presents a review of the theories that have attempted to explain the nature of offending across the life course. Current criminological theory can be viewed as a continuum in reference to the predicted levels of specialization and escalation. Relative to the attention paid to describing offending patterns there has been limited focus on the theoretical explanation of the diversity found in offending patterns.

The usefulness of current criminological theory in providing insight into the nature and direction of offending over the life course is of primary importance. The efficacy of criminal justice system policies are based on the fundamental assumptions of these theories. Our ability or (inability) to engage in crime control is limited to the extent that our assumptions about the nature of offending are flawed.

A. Criminological Theories: Images of Offending

Early sociological theories provided many perspectives on the patterns of delinquent and criminal behavior. These theories generate different and sometimes competing conceptualizations of offending patterns concerning whether or not escalation and/or specialization processes occur. The strongest position in favor of a generality of deviance versus multiple crime-specific causal

processes is that suggested by social control theory (Hirschi, 1969) and more recently by Hirschi and Gottfredson (1983; see also Gottfredson and Hirschi, 1986; 1990) they argue that there is one underlying theoretical construct known as "criminality" and that offenses that result from this propensity towards crime will be diverse as are the opportunities to engage in criminal activity. Gottfredson and Hirschi propose that the propensity towards criminality is a manifestation of low self-control. This lack of self-control results in a tendency towards immediate gratification as opposed to a delayed (more controlled) gratification of wants and desires. Low self-control will manifest itself in a number of ways not only limited to criminal behavior but to other non-criminal acts such as smoking, drinking, and sexual behavior (Gottfredson and Hirschi, 1990). Any specialization in behavioral patterns would only be due to having the same opportunities present themselves to the individual offender rather than reflect a more narrow crime-specific causal mechanism. Escalatory processes are not be expected according to this perspective, because although the propensity towards low self-control remains stable, the manifestation as criminal behavior "ages out" rather than intensifies over the life course.

Gottfredson and Hirschi have been highly critical of the research generated by the criminal career approach. They state that it is no longer reasonable based on a preponderance of empirical evidence to expect processes of specialization and/or

escalation in offending (1988: 39; 1990). According to Gottfredson and Hirschi (1990), from the initial findings of the Gluecks (1950; 1968) to the present day findings of criminal career researchers, patterns of specialization and escalation do not dominate offending patterns over the life course. These criticisms of the focus of criminal career research are not entirely unwarranted according to Le Blanc and Frechette (1989: viii) as much of the recent career criminal research has not added new empirical knowledge concerning the causes and correlates of crime.

In addition to the critique of specialization and escalation research, Gottfredson and Hirschi also suggest that the distinction between juvenile and adult offending is theoretically irrelevant. Criminality is a continuous variable and as this propensity increases all dimensions of criminality including participation, frequency, career length, and the age of desistance will increase as well (Gottfredson and Hirschi, 1986).

Gottfredson and Hirschi specifically cite the early findings of the Gluecks in support of their theory and these early findings were no doubt dated in their statistical rigor. A preliminary reanalysis of the Gluecks' published tables by Cohen (1986) indicate that there are distinct paths for different crime types as well as differences in frequency and prevalence rates for different age categories of offenders. Since both sides of the debate concerning the nature of the offending process cite the Glueck findings as supporting their theoretical perspectives

it will be particularly useful to use the Glueck data in an assessment of the extent of specialization and escalation in offending.

In part, the nature of offending seems to be generated by no specialization versus total specialization mindsets-- allowing for some gray area (some specialization, some diversity) may provide an alternative theoretical framework for interpreting offending patterns.

Much of the theoretical imagery of the criminal career perspective seems driven by "conventional wisdom" about the nature of criminality. The view of criminal activity generated by the work of Blumstein et al. (1986, 1988a) suggests that offenders will become more specialized in their offending over time and that the seriousness of their offending may also increase over the course of the criminal career. Although the criminal career perspective has not laid out the specific processes by which escalation and specialization are hypothesized to occur some suggestions have been made that these processes may be a result of maturational development. It seems that this perspective takes the "career" analogy a step further and assumes that over the course of their offending, offenders would become more adept at certain activities and begin to specialize and that as skills improve they will graduate to more serious types of offenses. Several issues are raised by this image of offending. If criminological theory is constructed from and offender motivation perspective (versus a victim/societal harm or legal

definition) then we must explain why an individual offender would be motivated to switch from profitable property crimes to less instrumental violent crimes. In addition, the most serious crimes (and crime categories) used by specialization and escalation research reflect behaviors that may have been the least premeditated or planned behaviors (e.g. assault).

The perspective presented by theories of criminal typologies and other descriptive work (Irwin, 1970; Shover, 1971; Gibbons, 1977) suggests that at least certain types of crimes such as robbery and burglary require specialized knowledge. Early subcultural theories (Cloward and Ohlin, 1960) suggested that individuals commit certain types of delinquent behavior such as criminal, conflict (fighting, vandalism) and retreatist (drug use). As previously noted, some delinquency researchers have also suggested that there is a distinct category of juveniles who specialize in status offending. These theories generate a view of offending that is similar to that of the criminal career perspective and suggests that at least for some crime types we will find evidence of specialization and escalation and these findings reflect different causal mechanisms of explanation.

Offending patterns reflecting multiple causal constructs may be characterized by escalation and specialization as well as versatility and de-escalation depending on the crime type or time period of offending. Farrington et al. (1988) notes that there is the potential for change in the underlying theoretical constructs during the course of the offending career. The

theories suggesting more than one construct have the potential to account for variance found in different behaviors and different stages of the life course.

B. Developmental Theories

Until very recently, much of the work focusing on life span development has focused on normative human growth and development. This development is usually viewed as a progressive improvement where the next advance or activity improves upon the last (Bloom, 1980). Robins and Wish (1977) illustrated that with non-normative developments such as deviant behavior, early deviant acts may be used to predict later ones and thus developmental stages may be viewed as potential points of intervention and prevention. Bloom (1980) conceptualizes a developmental theory of deviant behavior which would specify which deviant behavior is most likely to appear next in the sequence of offending, suggesting that these behaviors will be the same or similar to the types of behaviors committed in the past and representative of some sort of continuity in criminal behavior over the life course. In the case of offending patterns, sequences of events such as arrests can then be modeled to assess the various stages of offending that may exist. As noted by Stander et al. (1989: 318) the criminal career approach suggests a developmental theoretical approach by the nature of the questions asked concerning age of onset and desistance, and the frequency and seriousness of offending.

Smith and Smith (1984) note that labeling theory also suggests a developmental career in reference to the nature of offending. Labeling theorists (Lemert, 1951) suggest that virtually all youth engage in a variety of delinquent acts and those youth who are recognized by the juvenile justice system take on a deviant self identity which results in later more frequent and serious acts. This argument was noted previously as part of the justification for diverting juveniles from the juvenile justice system. Again, this argument assumes that we are able to identify a group of offenders who escalated on to more serious types of behavior as a result of their contact with the system.

Recently a developmental criminological perspective has been articulated and tested by the work of Le Blanc and Frechette (1989) and Loeber and Le Blanc (1990). This perspective employs the concepts and methods of developmental psychology in order to analyze within-subject changes. The theoretical imagery generated by this perspective is based on orthogenetic and hierarchic principles. Although the orthogenetic principle predicts that behavior will be characterized by a process of a lack of differentiation progressing to a state of increasing differentiation, specialization is also predicted as a form of desistance. In part, offending becomes more specialized as offenders concentrate on the offenses of least resistance i.e. the highest payoff and lowest risk. Also, in reference to escalation, a hierarchic model of development is proposed and

supported as delinquent conduct was predominantly found to follow adjacent stages of development. Based on the hierarchic model, a process of escalation starts at the onset of adolescence and wanes at the end of adolescence. Escalation does not continue into adulthood because all crime types have been committed by the end of adolescence (Le Blanc and Frechette, 1989).

C. The Continuum of Specialization and Escalation

A review of the literature finds some support for all of the images of offending including specialization, diversity, escalation and de-escalation. The competing theoretical perspectives of criminality, career criminals and developmental criminology represent a continuum of the potential for specialization and escalation. This continuum represents offending processes ranging from the diverse, random, de-escalating process to specialized offending that increases in seriousness over time. Given the possible range of outcomes, information on offending over the life course for the same individuals from the juvenile phase into adulthood is essential to untangling the process of offending.

The following statements are intended to summarize the predictions about the nature of offending according to the three dominant criminological perspectives:

Criminality: Offending patterns of juveniles and adults are characterized by randomness and diversity in the types of crimes committed and the chronological order of these

crimes. Little, if any, specialization or escalation will be found in patterns of offending over the life course.

Career Criminal: Offending patterns are characterized by both specialization and escalation for both juveniles and adults.

Developmental: Levels of specialization will increase over time and levels of escalation will be stronger for juveniles than adults.

D. Summary

Testing two dimensions of criminality-- specialization and escalation-- provides one more empirical assessment of a debate that has theoretically polarized the image of the criminal. This research may find that delinquency and criminality may be best understood from a theoretical perspective which is able to explain <u>different</u> developmental paths both in reference to individuals, time and crime types. Both sides of the theoretical debate concerning the nature of offending patterns have cited the work of the Gluecks as support for their respective theories. The present analysis will use the Glueck data in combination with more recent statistical methods in an attempt to shed additional light on life course offending patterns.

Chapter Four

Data and Measures

A. The Glueck Data

A recently funded National Institute of Justice project (Laub and Sampson, 1987) restored, coded, computerized and reanalyzed a prospective longitudinal data base. These data are from the classic study of juvenile delinquency originated by Sheldon and Eleanor Glueck-- Unraveling Juvenile Delinquency (UJD) (Glueck and Glueck, 1950).

The Glueck UJD project undertaken during the 1940's involved a matched sample of 500 officially designated delinquents and 500 nondelinquents. The delinquents were boys who had been committed to one of two correctional schools and the nondelinquent sample was drawn from the public school system of the city of Boston (Glueck and Glueck, 1950; Laub and Sampson, 1987).

The Glueck matched sample research design was intended to maximize the differences in delinquency while controlling for age, race/ethnicity, general intelligence, and low income residence. By matching the boys on these variables the Gluecks were able to control for the influence of variables that had previously been associated with delinquent behavior i.e., poverty, IQ, and age.

All of the boys in the sample are white and grew up in lower class areas of Boston. The age range for all of the boys at the initiation of the study was 9-17 years. The average age of the

delinquent boys at the time the study began was 14 years, 8 months and the average age for the nondelinquents was 14 years and 6 months. As for IQ, the average Wechsler-Bellevue Test score for the delinquents was 92 and the nondelinquents 94.

Data were collected on the 500 delinquents and 500 nondelinquents over a 25 year period in three waves: data at the first interview (average age 14), at the subject's 25th birthday and at the subject's 32nd birthday. A wealth of information on social, psychological, biological, developmental, family, SES/employment, school performance and life events was collected on all the boys in the period 1939-1948. For example, some of the key items regarding family life include parental criminality and alcohol use, parental education and intelligence, family mobility, economic status, family structure and the patterns of parental discipline and supervision of the children (Laub and Sampson, 1987).

Relevant to this research are the individual criminal history records of the 500 delinquent boys[3]. These criminal history data were collected from birth to the age of 32 and gathered through extensive record checks of police, court and correctional files. This criminal history information indicates the number and type of arrests over time and offense-specific

[3] In addition to the criminal histories of the delinquent boys, the criminal histories of the original control group of nondelinquent boys has also been coded. Of the 500 nondelinquent boys approximately 160 have some record of arrest as an adult.

arrest sequences for each individual[4]. Each event reflects 58 different possible crime types, with up to three charges per contact as well as 20 different types of dispositions. The hierarchical data file which now exists allows for the individual offender as well as the events themselves to act as the unit of analysis.

The data that will be used in this study are the individual criminal histories as events of 480 delinquent boys representing their arrests from birth to 32 years of age.[5] An example of the coding sheets that represent the individual criminal histories appears as Appendix A. In addition to event analysis, I will perform person-based analysis on subsamples of the original delinquent boys for whom criminal history information is available at various time periods.

B. Measures

From the list of 58 possible offense types, categories of offending will be constructed for use in transition matrix analysis. Previous research, such as Wolfgang et al. (1987) categorized the offenses into five possible categories: nonindex, injury, theft, damage and combination. Bursik (1980) grouped

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[4]The criminal history records as they now exist were coded as part of the previously mentioned National Institute of Justice project.

[5] The criminal history information for twenty of the delinquent boys is not available. This information may be lost or misplaced since the original Glueck study but was not found when the other 480 cases were coded.

offenses into only four different categories: personal injury offenses, personal property offenses, impersonal property offenses, and other (disorderly conduct, drug abuse).

Research that uses collapsed crime categories should be sensitive to several issues. The finer the distinctions, the more precise the information about specific crime switching. Farrington et al.'s (1988) recent analysis of escalation and specialization patterns used 27 possible offenses as the categories of analysis. Due to sample size constraints most analyses require fewer categories for there to be any meaningful statistical estimates within the data. With the Glueck data, there is potential for more precise analyses in terms of the crime types due to differentiation between various types of crimes. For example, the category of assault and battery provides for those of a simple assault/threats nature, assault and battery on a wife (domestic assault), and assault and battery with a weapon (aggravated assault). However, due to the relatively small number of events, these assault categories will be collapsed into a larger category of violent crime for the purposes of matrix analysis. Therefore, this research is limited as is much of the previous research on crime switching by the use of crime categories such as property offenses and violent offenses. When quantitatively possible and theoretically meaningful, crime-specific analysis is performed.

Most classification schemes are based upon the penal code and thus constitute a legal classification such as the FBI index

crime divisions of violent and property. Prior to grouping the offenses in this manner, several factor analyses were performed which included all of the offenses for that wave. In all three waves there was no more meaningful and/or parsimonious grouping of the offenses than that that is represented by previous work and thus a legal classification scheme. The offense types that were committed generated nine factors which overlapped each other as well as existing legal classifications. This finding itself is relevant to the theoretical debate as a lack of any clear differentiation among the different crime types might be evidence that they are all representative of the same underlying theoretical construct as suggested by Gottfredson and Hirschi.

Tables 4.1 and 4.2 present the categories that are used for juveniles and adults as well as the offenses that comprise these categories.[6] The classification scheme that is used reflects not only relevant policy issues but is also intended to be comparable to previous studies of specialization and escalation. In addition, certain categories are used in the analysis because of the prevalence of specific crimes in juvenile and adult offending. During the juvenile phase, I am able to assess specific trends in crime switching for auto theft and joyriding as well as status offenses. In addition to looking at auto crimes for juveniles based on their relative frequency, other

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[6] Offenses such as extortion, conspiracy, suspicion, jail escape, and contempt of court are excluded from this analysis as these offenses diversified existing categories and decreased their homogeneity in reference to crime type..

research on juvenile offending has found significant levels of juvenile auto specialization (Farrington et al. ,1988). Due to the large number of drinking offenses and the focus on drugs and alcohol and their possible links to criminal activity, these sorts of offenses (including driving under the influence of alcohol) will be designated as a separate group for adults. Robbery is presented as a separate category for adults in part because of the increased number of incidences of robbery for adults, and also work that suggests that robbers constitute a specialized group (Gibbons, 1977; Smith and Smith, 1984). The offending categories are different for the juvenile analysis than for the adult analysis and therefore a direct comparison is not possible but even if it were, the types of crimes that contribute to the different categories change the nature of the category across the different phases. For example, offenses such as moving violations and offenses against the family dominate the composition of the adult "other" category whereas for juveniles there were no offenses against the family or moving violations that comprised the "other" category.

There are 5,824 events that reflect the criminal activity of the delinquent boys across all three time periods with 2,408 events occurring during the juvenile period (up to age 17) and 3,420 for the adults. Not all of these events will be included in the analysis as some offenses are excluded for substantive reasons and other offenses are for arrests that are not included in the analysis. Much of the analysis will be performed on the

Table 4.1 Categories of Offending for Juveniles

VIOLENT CRIMES (VIOL)
Homicide
Rape
Assault and Battery (simple)
Assault and Battery (weapon)
Non-rape sex offenses
Armed Robbery
Unarmed Robbery
Kidnapping

BURGLARY (BURG)
Burglary/Breaking and Entering
Possession of Burglary Tools

PROPERTY CRIMES (PROP)
Forgery/Fraud/Embezzlement
Larceny (grand,petit,personal)
Receiving Stolen Goods
Arson
Theft of Services
Property Damage/Vandalism
Trespassing

AUTO
Motor Vehicle Theft
Unlawful Use of Auto

MISCELLANEOUS (OTHR)
Curfew and Loitering
Disorderly Conduct
Gambling
Weapons Violations
Contributing to Minor
Lewdness/Exposure/
Peeping
City Ordinance Violation
Vagrancy

STATUS (STAT)
Runaway
Stubborn/Incorrigible/
Profanity
Truancy
Other Status
Drunkeness
Driving Intoxicated

VIOLATION OF PROBATION
(PROB)

Table 4.2 Categories of Offending for Adults

VIOLENT CRIMES (VIOL)
Homicide
Rape
Assault and Battery (simple)
Assault and Battery (spousal)
Assault and Battery (weapon)
Non-rape sex offenses
Kidnapping

ROBBERY (ROBB)
Armed and Unarmed

BURGLARY (BURG)
Burglary/Breaking and Entering
Possession of Burglary Tools

PROPERTY CRIMES (PROP)
Trespassing
Property Damage/Vandalism
Forgery/Fraud/Embezzlement
Larceny (grand,petit,personal)
Motor Vehicle Theft
Unlawful Use of Auto
Receiving Stolen Goods
Arson
Theft of Services

MISCELLANEOUS (OTHR)
Curfew and Loitering
Disorderly Conduct
Gambling
Vagrancy
Weapons Violations
Moving Violations
Military Violations
Desertion/Nonsupport
Adultery/Illegitimacy
Contributing to Minor
Perjury
Fornication
Allowing Unlawful Use of Auto
Lewdness/Exposure
City Ordinance Violation
Resisting Arrest
Bribery

ALCOHOL/DRUGS (ALCO)
Drugs
Drunkenness
Violation of Liquor Laws
Driving While Intoxicated

VIOLATION OF PROBATION (PROB)

Table 4.3 Offense Frequencies by Age Period

	Age 17	17-25	25-32
Assault and Battery (simple)	42	79	25
Assault and Battery (spouse)	0	10	13
Assault and Battery (weapon	1	9	13
Homicide	1	2	1
Rape	3	12	6
Other Sex Offense	15	10	3
Robbery (armed)	11	41	24
Robbery (unarmed)	5	35	7
Kidnapping	1	1	3
Burglary	719	270	93
Possession of Burglary Tools	2	3	3
Forgery/Embezzlement/Fraud	3	15	15
Larceny (grand and petit)	552	179	66
Larceny (personal)	14	9	4
Larceny (auto)	58	86	17
Unlawful Use of Auto	168	113	22
Receiving Stolen Goods	9	18	9
Theft of Services	25	3	0
Trespassing	36	13	0
Arson	9	2	4
Property Damage	64	21	6
Runaway	80	2	0
Stubborn/Incorrigible	78	9	1
Truancy	47	0	0
Other Status	1	0	0
Curfew/Loitering	4	10	0
Disorderly Conduct	34	31	18
Drugs	0	0	4
Drunkenness/Liquor Violations	12	436	364
Gambling	1	14	5
Vagrancy	15	55	26
Weapons Violations	12	21	17
Driving While Intoxicated	0	18	23
Hit and Run	0	11	2
Moving Violation	0	131	128
Auto, Technical Violation	17	69	37
Licensing Violations	2	9	3
Military Related	0	13	0
Offenses Against Family	0	67	78
Violation of Probation	329	108	100
Contributing to Delinq Minor	1	1	2
Perjury	0	1	1
Fornication	0	4	4
Auto,Allow Impr Use	0	2	1
Lewd/Exposure/Peeping	9	10	5
Violation City Ord	1	7	2
Resist/Failure Coop	0	2	0
Bribery	0	0	1
Excluded Offenses	25	205	91
Total	2406	2167	1247

first eleven arrests within the juvenile and adult phases although there were individuals who had more than eleven arrests. Table 4.3 presents the offense frequencies for each age period. Note that for matrix analysis the age periods 17-25 and 25-32 years of age have been collapsed to represent the adult phase.

Each of the arrest events reflects up to three different charges. In an arrest event of multiple charges the Gluecks did not always record the most serious charge as the first charge. The Glueck coding order was maintained when the data were recently recoded. Since the nature of transition matrix analysis requires that only one charge per event is selected this coding scheme may have ramifications for my findings. I assessed the degree to which the selection of the first charge versus the most serious charge in each event affected my findings. Summary matrices were generated, one reflecting the most serious charge and the other the first charge as coded by the Gluecks. These two matrices were then compared to one another. There were no significant differences in the probabilities of crime-switching that was charge selection specific. Therefore, in order to be consistent with the selection criteria used by other researchers I will perform all subsequent analysis on the most serious charge for each arrest event.

C. Matrix Analysis

In order to measure trends in escalation and specialization across the life course, I will analyze transition matrices

representing the probabilities of switching from one type of offending to another. Most previous research cites the work of Wolfgang et al. (1972) as the first research to use transition matrix analysis as a technique for studying offense patterning. However, Hood and Sparks (1970) cite a report that was prepared for the President's Crime Commission in 1966 that used a crime-switch matrix. For both this study and the Wolfgang et al. (1972) study, matrices of probabilities are computed which represent the probabilities of committing an offense based on the previous type of offense. A matrix can be computed for each transition for example, the first matrix would represent the offenses at arrest one and the subsequent offenses at arrest two. Each cell in this matrix would contain the frequency of occurrence and thus the probability of committing a certain type of offense given that another type of offense had been committed on the previous arrest. By analyzing an individual offending matrix one can assess the probability of committing a violent offense at arrest one and either repeating with another violent offense at arrest two or committing another type of offense. Potentially, matrices of transition probabilities can then be grouped to form summary matrices which reflect a weighted average of all individual arrest transitions.

One dimension of the offending process that must be established if the summary matrices are meaningful representations of overall offending sequences is whether or not the individual matrices are stationary. Stationarity is

established if the probability of crime-switching remains constant across time. More specifically, if the probability of switching from a property offense at arrest one to a violent offense at arrest two is the same as the probability of the same switch at arrests seven and eight then this would be indicative of stationarity. The issue of time stationarity will be discussed in greater detail and tested as part of Chapter Five.

In reference to the structure of the matrices, the offense categories are ordered by decreasing seriousness. Within the matrix, elevated probabilities appearing along the diagonal will indicate specialization in offending. Higher probabilities beneath the diagonal will indicate movement towards more serious types of offending (escalation) and higher probabilities above the diagonal represent trends toward de-escalation (Cohen, 1986). If these individual matrices are found to be stationary-constant in the probabilities of offense switching across time- then they can be collapsed into weighted summary matrices that can be used to indicate possible specialization and/or escalation processes across time.

D. Typologies of Offending

In part based on some of the various shortcomings of matrix analysis, offending patterns will also be assessed through the construction of different types of criminal activity. These types of activity represent the nature of the activity as well as the extent to which that crime was eliminated in the juvenile and

adult phases.

Whereas matrix analysis is dependent upon pairs of like offenses, typologies allow an entire juvenile or adult offending history to be assessed for significant trends in specialization.

E. Data Limitations

As previously noted, there are 20 individuals for whom criminal history information is not available. Whether or not the offending patterns of these individuals might have differed from those used in this analysis is not known. As with many of the samples used to study offending patterns, the present sample includes only white males. In addition to this limitation, the data used in this analysis are the official records of the group and thus reflect the biases of official data. It should be noted that other official criminal history information for the Glueck delinquents was compared to self, parent, and teacher reports of delinquent behavior and their was a strong level of convergent validity between these sources (Laub, Sampson and Kiger, 1990).

When the Gluecks selected their delinquent sample they intended it to represent a high-rate, persistent delinquent group and therefore chose boys for the study who had served time in a correctional school. Thus, one might expect that the offending patterns of this group may over-represent more serious offenses.

F. Summary

The proposed analysis of the offending patterns of a group

of delinquents as represented by transition matrix analysis as well as typology development will provide further evidence concerning the nature of offending across the life course. Previous research has focused only on the offending patterns of either juveniles or adults whereas this research will analyze the offending patterns of the same individuals from childhood into early adulthood.

If groups of offenders are identified whose patterns of offending can be distinguished from others then the factors that may be associated with different types of offending as well as policies for the prevention and intervention of these offenders may be assessed. If on the other hand, offending processes are diverse and de-escalatory in nature many past and current criminal justice system policies of crime control may be ineffective and the construction of criminological theory based on the assumptions of specialization and escalation may be flawed.

Chapter Five

Stationarity for Juveniles and Adults

A. Stationarity and Homogeneity

The first task of an assessment of specialization and escalation in offending patterns that uses the probabilities of transition matrices is to investigate whether offending patterns are stationary. Stationarity means that transition probabilities are stable over time and the probabilities within the matrices remain constant across the transitions or arrest sequences. For example, given a finding of stationarity, the probability of moving from a property offense at the first arrest to an alcohol arrest at the second arrest remains the same at later arrest transitions. If all of the arrest transitions are stationary across time, then the individual matrices representing these transitions are weighted and summarized into one matrix of probabilities that are representative of overall offense-switching patterns. Alternatively, if arrest transitions are not stationary then the probabilities of offense-switching do not remain constant over time. In this scenario, offending patterns such as escalation and specialization would be assessed for each individual matrix as they contain probabilities that are time-dependent. As noted by Cohen (1986), when offending patterns are not characterized by stationarity, analysis that does not rely on summary transition matrices is more appropriate.

Many of the studies cited previously have used summary matrices to represent an average of the probabilities of various numbers of arrest transitions (Bursik, 1984 ;Farrington et al., 1988; Kempf, 1987; Smith and Smith, 1984). As previously noted, in order for summary matrices to be substantively meaningful in analyzing offense-switching, one should establish that these matrices are independent of the arrest sequence number and thus that the probability that a particular offense will be followed by a similar or different offense is the same regardless of offense number. Both the Wolfgang et al. (1972) research and the Bursik (1984) research tested for stationarity in offending across time and could not reject the hypothesis that offending sequences were indeed stationary. More recently, Tracy et al. (1990) compared the probabilities of committing each offense type across offense number and found that these probabilities remained fairly stable across the arrest transitions. Tracy et al. (1990) did note that there was some instability in the first two transitions but suggested that overall, the transitions were stationary.

In assessing the extent of constancy across categories of offending and across time, various assumptions in the form of hypotheses are tested. One hypothesis concerns the stationarity of the matrices across time within a particular group of offenders and the homogeneity hypothesis refers to the assumption that transitions are homogeneous across sub-populations of offenders. Tests of both of these hypotheses will shed light on

the processes of offending both across time for juveniles and adults as well as within subpopulations of these groups.

B. Testing For Stationarity

The first test of the stationarity hypothesis involves testing all of the individual matrices against a summary matrix reflecting a weighted average of all of the individual transitions. This test will indicate whether each matrix could have been generated by a summary matrix. The matrices representing the first 10 transitions (11 arrests) are analyzed to test for significant differences in the probabilities of offense switching across arrest transitions. These matrices reflect the crime categories as presented in Tables 4.1 and 4.2. The individual matrices representing each transition from arrest 1 through arrest 11 for both juveniles and adults appear in Appendices B and C.

The stationarity test of the transition probabilities involves crosstabulations that are formed and stacked into three-way tables. These matrices have the states occupied at an earlier time (previous arrest) in the rows and the states occupied at the next point in time (next arrest) in the columns with the levels of the stack corresponding to the transition period (arrest 1-2, 2-3, 3-4, etc.). The cells of these tables contain the observed frequencies of particular offense categories and log-linear contingency table methods are used for the statistical assessment of stationarity. The log-linear model

corresponding to time stationarity tests whether or not the ending state (e.g. arrest 2) is a function of the starting state (arrest 1) but not of time (Knoke and Burke, 1980: 55). Specifically, the offense type from the previous arrest (A) appears in the rows of the matrix, the offense type of the current arrest (B) appears in the columns and the levels of the stack refer to the transition number i.e, time (T). The model (AB)(AT) will provide an acceptable fit if the data support the stationarity hypothesis and indicate that given the previous offense type, the next offense type is independent of the transition number/arrest sequence. The test of the null hypothesis that all of the matrices reflect the same offending properties, and that the probability of switching does not vary across transitions, is based on the chi-squared statistic involving observed and expected frequencies.

As illustrated by Table 5.1, when the stationarity hypothesis is fitted to the juvenile arrest data there is a significant departure from the model of stationarity in juvenile offending across time. The null hypothesis that the probability of crime switching does not vary across time is rejected. Since the later juvenile arrest transitions contained many zeroes, the model was also fitted to the first five arrest transitions and again the stationarity hypothesis was not supported.

This finding of nonstationarity suggests that the nature of juvenile offending patterns in reference to the type of next offense is to some extent dependent on the offense (arrest)

number and not just the previous offense. Therefore at least for juveniles a cross-section of arrest information would not be indicative of all juvenile offending patterns. For juveniles, not all matrices are generated by the same process and crime-switching probabilities do not remain constant across time.

Table 5.1 also presents the chi-squared statistics and levels of significance for the tests of stationarity for adults. As is shown, the adult offending process is characterized by stationarity across the first ten transitions and it is thus meaningful to collapse these matrices into a generating or summary matrix for subsequent tests of escalation and specialization. More specifically, the stationarity finding suggests that the probability of switching from one crime type to another does not vary significantly for adult sample across time and suggests that all of the matrices could have been generated by the same process.

Table 5.1 Chi-square Test of the Stationarity of Transitions Across Time for Adults and Juveniles

A. Juveniles	
Pearson Chi-square=	460.42
Degrees of Freedom=	378
P=	.002
B. Adults	
Pearson Chi-square=	363.94
Degrees of Freedom=	378
P=	.689

Based on these findings the stationarity assumption is

supported for adult offending. For adults the transition probabilities did not change significantly with successive arrests and the probability of one offense type following another offense type was not significantly different on the eleventh arrest than on the first arrest.

C. Offense-Specific Stationarity Test

Based on the finding of nonstationarity for juvenile offending, an additional test of stationarity that focuses on offense-specific offending processes is appropriate. This test of stationarity is one that focuses attention on the transitions within each offense category. In conducting the offense-specific test, the first row of the matrix is the observed transitions of a particular offense category such as violent crimes from arrest 1 to all categories at arrest 2, the second row is the observed transitions from violent offending at arrest 2 to all categories at arrest 3 and so on. For this test there are as many rows as transitions under analysis which in this case is 10 transitions (representing 11 arrests) and as many columns as there are crime categories. The results of this test will indicate exactly which offenses are nonstationary for juvenile offending.

The test results for the juvenile sample are displayed in Table 5.2. The previous finding of nonstationarity is due to transition-dependent changes in burglary and status offending. Offense-specific stationarity is established for all of the remaining offense categories and therefore even within these

crime categories the probabilities of offense switching remain stable across arrest transitions. The model of independence is supported for the individual crime categories of violent, property, auto, other and probation. Since it is not meaningful to present summary matrix statistics for offending patterns that are time-dependent, specialization and escalation statistics for juvenile burglary and status offending are presented for the first five individual arrest transitions.[7]

Table 5.2 Offense-Specific Stationarity Test

Offense Category	X2	Significance
VIOLENT	61.33	.230
BURGLARY	79.22	.014
PROPERTY	66.26	.123
AUTO	61.49	.226
OTHER	47.73	.714
STATUS	96.56	.000
PROBATION	34.66	.981

E. Summary

For juveniles, there was nonstationarity in the probability of committing burglary and status offenses across arrest transitions. Based on these findings, a close inspection of the individual juvenile arrest transitions for burglary and status offending is warranted. Specialization and escalation statistics will shed further light on the specific processes that create a

[7] The degrees of freedom for each chi-square test in Table 5.2 are 54. The matrix that is tested is a 10 by 7 matrix-- 10 transitions and seven crime categories.

finding of nonstationarity.

For adult offending, the probability of one offense type being followed by another offense type was not significantly different at the first transition than at later transitions. Thus, the assumption of time constancy in reference to crime type switching is supported. Fitting the log-linear model of no change across time yields a good fit for modelling adult offending and suggests no significant temporal change in the probability of offense switching.

In light of these findings we can expect that the levels of escalation will be either nonexistent or low. The dominant stationarity finding suggests that crime type switching is stable across time and overall does not become more or less serious as offending continues. At this point, knowledge of one arrest transition for adults and in large part for juveniles would be adequate to predict the long term probabilities of offense switching.

One rather surprising finding is that the finding of nonstationarity was for two relatively homogeneous categories. More heterogeneous categories that contain a number of offenses as well as different types of offenses such as the other category could have been predicted to be less stationary. This finding suggests that the classification scheme although not entirely offense specific, is not so heterogenous as to produce a finding of nonstationarity. The ramifications of the selection of various crime categories is presented in the next section in

addition to specialization and escalation statistics for both juveniles and adults.

Chapter Six

Specialization and Escalation for Juveniles and Adults

This chapter considers the two related issues of specialization and escalation in offending. This investigation will provide a description of offending processes as well as investigate the extent to which the theoretical imagery of criminal offending accurately reflects empirical findings. A discussion of the importance of the composition of crime categories for the findings is also presented.

A summary matrix for juvenile offending is presented but since offending patterns for juvenile burglary and status offending are nonstationary these crime types are analyzed for each individual arrest transition. Based on the earlier findings of stationarity for adult offending sequences, summary matrices are used to assess the degree of adult specialization and escalation.

A. Juvenile Specialization

The juvenile summary matrix representing the first ten transitions (eleven arrests) for juvenile offending appear as Table 6.1. The individual matrices that are combined to create this summary matrix appear in Appendix B. Looking at Table 6.1,

the raw probabilities along the diagonal suggest some specialization. Specialization in this case is indicated by the diagonal probability representing the highest probability for that row, and thus that each offense is most likely to be followed by a next arrest for a similar offense type rather than a different one. Across the rows, given a property, other or probation offense, the most likely next offense is a property offense. Given a violent or burglary offense, the most likely next offense is a burglary offense and given an auto offense the most likely next offense is an auto offense. It is expected that the most likely transitions would be to offenses that are more prevalent and this is indeed the case here as property, burglary and auto offenses are the most prevalent categories. Based on the greater prevalence of some offenses the raw probabilities are not sufficient as indicators of specialization. A method for controlling for prevalence is required and it must be a method that would not be sensitive to the magnitude of the column probabilities.

Bursik's research provided a method for assessing specialization that controls for the prevalence of particular offense types. This method, the adjusted standardized residual (ASR), is not affected by the relative frequency of offenses within each arrest transition. The ASR statistic can be viewed as an approximately standardized normal deviate and tests for significance can be performed (Bursik, 1980).

$$\text{Adjusted Standardized Residual} = \frac{\text{OBSERVED-EXPECTED}}{\text{SQRT(E)xSQRT[(1-(R/T)x(1-C/T)]}}$$

R=ROW TOTAL
C=COLUMN TOTAL
T=TOTAL
E=EXPECTED

As noted by Farrington et al. (1988) the ASR statistic is sensitive to the absolute frequency of offending (i.e. sample size). In an effort to also control for sample size, Farrington et al. (1988) suggest a measure of specialization known as the "forward specialization coefficient" (FSC) whose quantity will be zero with complete versatility in offending and one when there is perfect specialization.

$$\text{Forward Specialization Coefficient} = \frac{\text{OBSERVED-EXPECTED}}{\text{ROW TOTAL-EXPECTED}}$$

FSC can be interpreted as an index of the degree of specialization on a scale of 0 to 1. A negative value of FSC is possible but rare, and would indicate a tendency for an offense to not be followed by a similar offense (Farrington et al., 1988).

As noted by Farrington et al. (1988), the FSC is used to assess the degree of specialization for a given offense type and the ASR can be used as a test of the statistical significance of the FSC. Table 6.1 shows that for juvenile offending with the exception of probation violation all of the ASRs are significant (two-tailed test). Given the sample size i.e., the number of events in the summary matrices, even relatively small FSC's are significant.

For juvenile offending, the strongest level of

specialization is for auto offending which consists of joyriding and auto theft. The research of Farrington et al. (1988) also found a relatively high level of juvenile auto theft specialization. In order of decreasing specialization, auto offending is followed by status, burglary, violent, property and other offending. Based on the finding of nonstationarity for juvenile burglary and status offending it is necessary to calculate specialization statistics for each transition for these offenses.

Table 6.2 presents the transition specific statistics for juvenile burglary and status offending. There is significant specialization in juvenile burglary offending for the first three transitions (4 arrests) with the greatest likelihood of specialization occurring in the transition from the second to third arrest. There is a decline in the level of juvenile burglary specialization with subsequent arrests with no burglary specialization after the fourth arrest.

For status offending there is significant specialization for the first four transitions with again the most likely point of specialization occurring early in the offending career at the second transition. After the second transition there is decreasing specialization until at the fifth transition there is no significant status specialization. For both burglary and status offending, specialization was significantly more likely during the early stages of offending. Escalation statistics should indicate in what direction the early burglary and status

TABLE 6.1 JUVENILE SUMMARY MATRIX: TRANSITIONS 1-10

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	16	21	15	5	3	4	2	66
	.242	.318	.227	.076	.045	.061	.030	.036
BURG	12	287	152	52	19	49	33	604
	.020	.475	.252	.086	.031	.081	.055	.326
PROP	25	177	294	43	14	66	31	650
	.038	.272	.452	.066	.022	.102	.048	.351
AUTO	6	28	24	57	3	4	18	140
	.043	.200	.171	.407	.021	.029	.129	.076
OTHR	5	11	17	7	12	5	2	59
	.085	.186	.288	.119	.203	.085	.034	.032
STAT	8	60	58	15	12	109	5	267
	.030	.225	.217	.056	.045	.408	.019	.144
PROB	1	24	26	6	4	2	4	67
	.015	.358	.388	.090	.060	.030	.060	.036
Column Total	73	608	586	185	67	239	95	1853
	.039	.328	.316	.100	.036	.129	.051	1.00

	EXPECTED VALUE	SPECIALIZATION COEFFICIENT
VIOLENT	2.60	.211*
BURGLARY	198.18	.219*
PROPERTY	205.56	.199*
AUTO	13.98	.341*
OTHER	2.13	.174*
STATUS	34.44	.321*
PROBATION	3.43	.009

* p=.01

TABLE 6.2 INDIVIDUAL TRANSITION SPECIALIZATION COEFFICIENTS FOR JUVENILE BURGLARY AND STATUS OFFENDING					
	MATRIX 1	MATRIX 2	MATRIX 3	MATRIX 4	MATRIX 5
BURGLARY	.141*	.326*	.210*	.128	.081
STATUS	.120*	.327*	.290*	.201*	.087

* p=.01

offenders went at later transitions.

B. Juvenile Escalation

Escalation and de-escalation can also be assessed from matrices which reflect the offending process across time. A finding of escalation or de-escalation would indicate that the current offense does depend to some extent on the previous type of offense and that there is a departure from independence in crime-type switching over successive arrests. As with specialization, a statistic is calculated that assesses the extent to which switches from less serious to more serious types of offenses occur more frequently than would be expected based on the prevalence of that offense category. The measure of escalation I use is adopted from Blumstein et al. (1989). The observed extent of switching below the diagonal is compared to that which would be expected if switching were independent of the previous crime type. The transitions below the diagonal are those transitions that represent the potential for escalation. This measure of escalation is standardized with respect to the

relative prevalence of offenses and will range in value from -1 to +1 with -1 indicating complete de-escalation, +1 complete escalation and 0 indicating no trends toward escalation or de-escalation (Blumstein et al., 1989). An escalation statistic of 0 would indicate an independence, a randomness in the likelihood of committing a next offense that was more or less serious than the current offense. The following formula is used to assess the levels of escalation and de-escalation for each of the offense categories.

ESCALATION AND DE-ESCALATION:

$$\frac{\text{OBSERVED PROBABILITIES (summed)} - \text{EXPECTED PROBABILITIES (summed)}}{\text{MAX} - \text{EXPECTED PROBABILITY (summed)}}$$

MAX=1-diagonal probability for that offense if observed>expected
MAX=0 if observed≤expected

Whereas escalation is assessed for the probabilities below the diagonal, de-escalation will be found in the probabilities above the diagonal as these probabilities represent the probability of committing a less serious offense on the next arrest than was previously committed. In this case, a value of -1 represents complete escalation and +1 indicates complete de-escalation. Obviously de-escalation cannot be assessed for the least serious offense category (probation violation) using this statistic because there are no other offense categories to de-escalate into after this category. Likewise, an escalation statistic cannot be calculated for violent offenses as it represents the most serious offense category. For the remaining categories, both escalation and de-escalation measures are

calculated and an average measure of overall escalation (E) is assessed.

$$\text{OVERALL ESCALATION} = \frac{\text{ESCALATION STATISTIC-DE-ESCALATION STATISTIC}}{2}$$

An examination of Table 6.3 finds that for juveniles, the summary statistics (overall E) for many of the crime categories are close to 0, indicating a directional independence in crime-type switching over time. Although the level of this statistic is not strong in either direction, these results do provide some insight into the general direction of offending (albeit a small one) in that the delinquent acts of juveniles are more likely to be followed across time by less serious acts. A not so small trend in de-escalation is that of violent offending for juveniles. An exception to the overall dominant trend towards de-escalation is found for juvenile auto offending which provides one of the strongest coefficients and it is in the direction of escalation.

Table 6.3 Escalation and De-escalation for Juveniles

	Escalation	De-escalation	Overall E
VIOLENT	----------	.211	----------
BURGLARY	.058	.184	-.063
PROPERTY	.155	.247	-.046
AUTO	.394	.171	.112
OTHER	.134	.339	-.103
STATUS	.300	.627	-.164
PROBATION	.007	----------	----------

Table 6.4 presents the transition specific escalation and de-escalation statistics for burglary offending. Although statistics are presented for each matrix, in many cases the number of events is so small (such as the one transition from a status offense to a less serious offense at transition 1, that these statistics should be interpreted very cautiously.

Table 6.4 Transition-Specific Escalation and De-Escalation Statistics for Juvenile Burglary Offending

TRANSITION	ESCALATION	DE-ESCALATION	OVERALL E
MATRIX 1	.171	.140	.016
MATRIX 2	.692	.313	.190
MATRIX 3	.216	.209	.004
MATRIX 4	-1	.083	-.541
MATRIX 5	-1	.014	-.507

As indicated by Table 6.4, escalation from burglary to a more serious offense is more likely at the first two transitions. At the third transition the direction of switching is virtually random and at the fourth and fifth transitions de-escalation to offense categories less serious than burglary is more likely. This large trend towards de-escalation in burglary offending at later transitions is probably responsible for the previous nonstationarity finding for burglary.

Table 6.5 presents the transition-specific coefficients for status offending. An inspection of the individual matrices for

juveniles, which appear as Appendix B, illustrates the small number of cases that are actually used to calculate these statistics. Acknowledging the potential for unreliability, particularly with later transitions as the sample size decreases, there is a trend towards de-escalation for status offenders except for a strong trend in escalation at the last transition. One interpretation of this would be that in the early arrests when a juvenile is convicted of a status offense that this is a violation of their probation. An offense can only be followed by a violation of probation <u>if</u> the offender was given probation as part of their previous disposition. One might assume that less serious offenses may be more likely to be followed by a probation violation as these offenses were more likely to receive probation as a disposition.

Table 6.5 Transition-Specific Escalation and De-Escalation Statistics for Juvenile Status Offending

TRANSITION	ESCALATION	DE-ESCALATION	OVERALL E
Matrix 1	.434	.628	.097
Matrix 2	.308	.739	-.216
Matrix 3	.258	.692	-.217
Matrix 4	.216	.039	-.089
Matrix 5	.048	-1	.524

The dominant trend towards de-escalation for most categories of juvenile offending supports the image of offending as presented by Le Blanc and Frechette (1989) that juvenile offending is characterized by early escalation but de-escalation

at the end of adolescence. The transition specific information on burglary offending also supports this pattern. However, status offending does not and the potential processes of stigmatization as suggested by labeling theory may need to be implemented into a theory of juvenile offending.

C. Alternative Categories of Juvenile Offending

Preliminary matrix analysis was performed with only four juvenile crime categories. Initially, there was not a separate category for burglary and auto theft/joyriding and these offenses were included in the property offense category. Also, violation of probation was included as part of the miscellaneous/other category. Although the reliability of the statistics improves with fewer categories and larger frequencies, information is lost. After this preliminary analysis it was statistically possible and substantively more meaningful to further homogenize the categories.

In contrast to the findings of nonstationarity when seven offense categories are used, there was a finding of stationarity when only four juvenile crime categories were used. Creating more homogenized categories and more categories in number creates a greater potential for nonstationarity as the categories for switching increase.

When specialization and escalation coefficients were calculated for these preliminary categories, the importance of the composition of the categories for the findings in this area

of research was illustrated. For example, the specialization coefficient for property offending was .215 when burglary and auto offending were included and decreases to .199 (although still significant) when burglary and auto offenses are analyzed separately. Both burglary and auto offending were significant and this elevated the level of the property specialization coefficient. When the miscellaneous/other category included probation violation the specialization coefficient was smaller (.083). By removing probation violation, which on its own is not significant, the specialization coefficient for other offending is increased to .174.

The issue of crime category composition is an important one for studies of escalation and specialization that are not offense specific. As has been illustrated, results concerning both the nature and direction of offending are affected by the composition of these categories.

D. Adult Specialization

Unlike the juvenile classification scheme, robbery is a separate category for adults as are alcohol offenses. Neither status offenses nor auto offenses constitute an adult offense category. Status offenses are juvenile offenses and auto offending was not evenly distributed across the two phases of adulthood. For the time period 17-25, auto offending contributed 9% of the total offenses but only 3% of the total offenses during the period 25-32 years of age. Where the likelihood of pairs of

offenses is less of an issue as is the case with typology offending, adult auto offending will be a separate adult category.

The adult offending process is stationary across time and therefore escalation and specialization coefficients are calculated for the summary matrix of adult offending. Table 6.6 presents the summary matrix for adults which consists of a weighted average of the probability of adult offending across the first ten transitions (11 arrests). The individual transitions which are combined to construct this matrix appear as Appendix C. An inspection of Table 6.6 indicates that there is evidence of some degree of specialization as indicated by significant ASR values for robbery, property, other and alcohol offenses but not for adult violent offending. The degree of specialization is not uniform across the various crime-type categories with the strongest FSC for alcohol offending followed by property, other and robbery offending. The interpretation of the alcohol FSC indicates that in nearly one-half of the cases an alcohol arrest was followed by another alcohol arrest. The finding of a lack of specialization for adult violent offending is in contrast to the developmental image of offending as suggested by the criminal career approach. Rather, since specialization was only significant for juvenile violent offending this suggests a de-escalatory trend in offending seriousness over time for the same offenders.

Table 6.6 ADULT SUMMARY TRANSITION MATRIX: TRANSITIONS 1-10

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	16	11	11	19	47	30	6	140
	.114	.079	.079	.136	.336	.214	.043	.073
ROBB	10	12	10	7	11	10	4	64
	.156	.188	.156	.109	.172	.156	.063	.033
BURG	27	8	95	57	40	34	17	278
	.097	.029	.342	.205	.144	.122	.061	.145
PROP	25	19	62	128	81	67	32	414
	.060	.046	.150	.309	.196	.162	.077	.216
OTHR	39	6	39	66	226	70	36	482
	.081	.012	.081	.137	.469	.145	.075	.252
ALCO	25	10	26	48	76	243	8	436
	.057	.023	.060	.110	.174	.557	.018	.228
PROB	8	2	13	21	30	13	12	99
	.081	.020	.131	.212	.303	.131	.121	.052
Column Total	150	68	256	346	511	467	115	1913
	.078	.036	.134	.181	.267	.244	.060	1.00

	EXPECTED VALUE	SPECIALIZATION COEFFICIENT
VIOLENT	10.98	.039
ROBBERY	2.27	.158*
BURGLARY	37.20	.240*
PROPERTY	74.88	.157*
OTHER	128.75	.275*
ALCOHOL	106.44	.414*
PROBATION	5.95	.065*

* p=.01

D. Adult Escalation

As illustrated by Table 6.7 there is a slight trend towards de-escalation in the seriousness of adult offending across time. The overall E values for the offenses for which this statistic can be calculated are so close to zero that this indicates that overall the direction of switching for most crime types is independent of that crime type. Relative to the findings for juveniles, the direction in terms of escalation or de-escalation (although not strong for either group) is more likely to be de-escalation for the adult offending patterns.

Table 6.7 Escalation for Adults

	Escalation	De-escalation	Overall E
VIOLENT	---------	.038	---------
ROBBERY	.106	.260	-.050
BURGLARY	.022	.293	-.136
PROPERTY	.018	.238	-.110
OTHER	.275	.276	-.001
ALCOHOL	.391	.700	.155
PROBATION	.066	----------	----------

E. Alternative Categories of Adult Offending

Initially, there was a very strong escalation trend for adult alcohol offenders. This finding was an artifact of the early crime category composition that included probation violation as a miscellaneous/other offense. When probation

violation is a separate category the escalation effect is significantly reduced. There is still a trend towards escalation for adult alcohol offenders primarily from switches to miscellaneous/other offenses.

F. Summary

This chapter provides evidence that there is diversity in offending as indicated by significant but relatively weak levels of specialization in offending as well as an "aging out" effect as indicated by somewhat stronger trends in de-escalation during the adult phase. However, all but one offense category across the juvenile and adult phases indicated more specialization than would be expected if offending was completely diverse. Where comparisons are possible, the stronger FSCs for adults suggest more specialization in adult offending which supports the previous hypothesis of developmental trends in offending across time as suggested by both criminal career researchers and developmental criminologists.

In reference to escalation and de-escalation in offending the present research supports an independence in the direction of crime-type switching for most offense categories. Although overall, the trend was slightly de-escalatory for juveniles and a slightly stronger de-escalatory trend for adults, the adult alcohol offenders were more likely to commit a more serious crime at the next offense. These findings more closely mirror the image of offending that is suggested by the criminality and

developmental perspectives.

It is possible that the diverse nature of offending as reflected by relatively weak specialization and randomness in the direction of offending may be due to the combination of different types of offenders in the juvenile and adult phases. The next step is to analyze specialization and escalation within the juvenile and adult phases. I will look separately at persistent and nonpersistent juvenile and adult offenders based on the frequency of offending. In addition to matrix analysis, I will also construct typologies of offending which reflect the nature and frequency of offending across time.

Chapter Seven

Subgroup Differences and Typologies of Offending

This chapter will investigate the offending processes of different types of offenders within both the juvenile and adult phase as well as across these phases. Prior to assessing the levels of specialization and escalation for subgroups of offenders I will investigate the levels of stationarity and homogeneity for these groups. In addition to matrix analysis of offending processes, this chapter also presents the results of an alternative measure of specialization based on the construction of typologies of offending.

A. Stationarity and Homogeneity of Juvenile Subgroups

Previous research has suggested that the nature of offending processes of chronic juvenile offenders (5 or more arrests as a juvenile) may differ from those of the nonchronic (less than 5 arrests as a juvenile) offender. Wolfgang's (1972) study of the 1945 Philadelphia birth cohort found that 6% of the cohort were chronic offenders and these offenders accounted for more than 50% of the criminal activity. A number of other studies have also identified groups of chronic juvenile offenders whose offending careers differ from those of other juvenile offenders not only in the frequency of offending but in the seriousness as well (Dunford and Elliott, 1984; Snyder, 1988; Tracy, 1990).

The nature of the present sample is different than that of a

cohort study as the present sample is not based on a cohort of individuals some of whom have no arrests but rather a group of persistent high-rate offenders. Using cohort-based definitions of chronicity, we could expect there to be a significant number of juvenile chronic offenders in the present sample and this is indeed the case. Of the 480 delinquents for which there is criminal history information 240 (exactly one-half) were chronic offenders as defined by Wolfgang et al. (1972).

Since the chronic offender definition used by other researchers in cohort studies proves not to be very discriminatory for the present sample, a better measure is to partition the upper quartile of offenders. I define persistent juvenile offenders as those juveniles who had 7 or more offenses. Of the 480 juveniles 114 (24%) were persistent offenders. These 114 boys were responsible for 41% of the juvenile offenses.

Matrices can now be analyzed for all arrest transitions for those with 7 or more arrests and those juveniles with fewer than 7 arrests. Perhaps the levels of specialization are higher or lower for different offenders and/or offense categories within subgroups of offenders. The mean number of offenses for nonpersistent juveniles during the juvenile time period was 3.84 and the mean number of offenses for the persistent juveniles during the juvenile time period was 8.74. As adults, the persistent juveniles went on to commit an average of 9.02 adult offenses and the nonpersistent juveniles committed an average of 6.5 adult offenses.

Since the number of offenders in each group has decreased from the original 480 there are many zeroes in the cells of the later arrest transitions. Stationarity, homogeneity and specialization and escalation statistics are therefore calculated for the first four transitions (five arrests) only for the juvenile subgroup analysis.

Based on the previous finding of nonstationarity for juvenile offending a more specific stationarity test may shed further light on the offender-specific crime-switching probabilities across time. Table 7.1 presents the results of the test of stationarity for the persistent and nonpersistent offending sequences. As illustrated by Table 7.1, there is

Table 7.1 Stationarity and Homogeneity for Juvenile Persistent and Nonpersistent Offenders

A. Persistent Juvenile Offenders		
	Pearson Chi-Square	103.19
	Degrees of Freedom	126
	p=	.932
B. Nonpersistent Juvenile Offenders		
	Pearson Chi-Square	175.76
	Degrees of Freedom	126
	p=	.002
C. Homogeneity Persistent vs. Nonpersistent		
	Pearson Chi-Square	45.91
	Degrees of Freedom	36
	p=	.125

stationarity in the probabilities of offense switching for persistent offenders and their offending as a group is similar across offenders and across time. For nonpersistent juveniles there are time-dependent probabilities and therefore a summary

matrix of offending from which specialization and escalation statistics can be calculated can be used for persistent juvenile offenders but not for the nonpersistent juvenile offenders. Homogeneity refers to a comparison of the summary matrices of two groups allowing that both groups have different beginning and ending states. Holding these states constant, a test for homogeneity assesses whether or not the probabilities of committing certain offenses are the same. In the case of persistent and nonpersistent juvenile offenders, there are no significant differences in the probabilities of committing certain types offenses during the first five arrests. So, although the offending processes for nonpersistent juveniles are not stationary, these processes are not so strong as to contrast with the offending processes on persistent juveniles.

The tests for stationarity and homogeneity for these groups are even more susceptible to error due to the smaller numbers of events in each transition and therefore should be interpreted with caution. The offense-specific stationarity test that was performed on juvenile transitions will not be performed on the nonpersistent juveniles again, due to the very small number of cases in the cells of later transitions of the subgroups.

B. Specialization and Escalation for Nonpersistent Juveniles

Since the offending processes of nonpersistent juveniles are not stationary, summary matrix statistics are not meaningful as they do not reflect the transition-dependent levels of

specialization and escalation. Table 7.2 presents the specialization coefficients for nonpersistent juveniles for each arrest transition.

An inspection of the coefficients in Table 7.2 indicates that there is significant violence specialization for nonpersistent juveniles only on the first and third transition. The individual transition matrix for the fourth transition shows that there were no juveniles in this group who followed a violent offense with another violent offense. Burglary and property specialization is significant at all transitions. Auto offending is highly transition-dependent as there is strong significant specialization in the earlier transitions and then a rare negative specialization coefficient indicating that auto offenses are likely not to be followed by another auto offense. The crime category of other is specialized at the first three transitions and status offending is significant at all transitions at a consistently high level relative to the other coefficients. Since a juvenile cannot have a first arrest for probation violation there cannot be a pair of probation offenses at the first transition. Also, we would expect that at no transition would it be likely that there would be two consecutive probation violations and this is the case as there is either a null or insignificant level of specialization for this crime. These findings can be compared to the summary matrix statistics for persistent juveniles in reference to the levels and nature of specialization.

Table 7.2 INDIVIDUAL TRANSITION SPECIALIZATION COEFFICIENTS FOR JUVENILE NONPERSISTENT OFFENDING				
	MATRIX 1	MATRIX 2	MATRIX 3	MATRIX 4
VIOLENT	.318*	.050	.372*	0
BURGLARY	.136*	.291*	.246*	.153*
PROPERTY	.184*	.237*	.106*	.216*
AUTO	.279*	.613*	.320*	-.028
OTHER	.165*	.141*	.303*	.107
STATUS	.384*	.341*	.343*	.267*
PROBATION	------	------	.187	------

Table 7.3 provides the escalation, de-escalation and overall direction statistics for each of the first four transitions for the nonpersistent juveniles. Focusing on the overall E statistic which is the escalation statistic minus the de-escalation statistic, divided by two, for most transitions this number is close to 0. The negative values indicate de-escalation and the positive values indicate some level of escalation for that offense category for that transition. Property, auto and other offenses de-escalate at almost every transition to a less serious offense. Status and burglary offenses are likely to be followed by a more serious offense at the first transition, a less serious at the second, at the third a more serious for burglary but less serious for status and the reverse scenarios at the fourth transition. These transition specific findings for burglary and status offending further explain the earlier nonstationarity finding for juvenile burglary

and status offending. Violent offenses are always either followed by a less serious offense (e.g., the value of 1 at the fourth transition) or another violent offense. Probation offenses are likely to be followed by another offense rather than another probation offense. These trends can be compared to those of the persistent juvenile offenders. According to the theoretical perspective of Gottfredson and Hirschi (1990), one expects the patterns to be similar for these two groups but if the criminal career perspective is supported there may be significant differences for these groups in the likelihood of specialization and escalation.

Table 7.3 Escalation and De-Escalation for Nonpersistent Juveniles for Transitions 1-4

1 2 3 4	Escalation		De-Escalation		Overall E	
VIOLENT	---- ----	---- ----	.318 .373	.051 1	---- ----	---- ----
BURGLARY	.173 .279	0 0	.133 .244	.268 .086	.020 .018	-.134 -.043
PROPERTY	.085 .137	.105 .011	.284 .319	.362 .430	-.100 -.091	-.129 -.160
AUTO	.328 .316	.615 .321	.381 .332	.607 .347	-.027 -.008	.004 -.013
OTHER	.367 .333	.106 .151	.185 .193	.258 .035	-.091 -.070	-.076 .058
STATUS	.622 .315	.325 .351	.373 .623	.628 .019	.125 -.154	-.152 .166
PROBATION	---- .054	1 1	---- ----	---- ----	---- ----	---- ----

C. Specialization and Escalation for Persistent Juveniles

The persistent juveniles are those juveniles who had seven

or more offenses during the juvenile period. Since the transition probabilities remain stable across time for these groups, summary matrix statistics are presented. One might expect more persistent, more committed offenders may yield higher levels of specialization for more serious crimes.

Table 7.4 presents the specialization coefficients for the persistent juvenile offenders based on the summary matrix of the first five arrest events.

Table 7.4 Persistent Juvenile Summary Specialization

	EXPECTED VALUE	SPECIALIZATION COEFFICIENT
VIOLENT	.27	.233*
BURGLARY	40.90	.197*
PROPERTY	82.27	.259*
AUTO	1.96	.418*
OTHER	.43	-.032
STATUS	5.87	.306*
PROBATION	--------	---------

As compared to the specialization coefficients from the summary matrix containing all juvenile offenders, the persistent juveniles had higher levels of violent, property and auto specialization than was reflected by the overall statistics. Also, persistent juveniles seem significantly less likely to specialize in the types of crimes included in the other category and although still significant, have lower levels of specialization in status offending. A comparison of the

nonpersistent statistics to the overall juvenile trends finds this subgroup's offending patterns to be similar to the overall patterns with a few noteworthy exceptions. Particularly interesting is the high levels of status specialization for the nonpersistent juveniles.

Comparing the persistent and nonpersistent trends in specialization again suggests that nonpersistent juveniles are more likely to specialize in status (less serious) offending and that persistent juveniles are more likely to specialize in auto offending and likely not to specialize in the kinds of crimes in the miscellaneous/other category.

Table 7.5 Escalation for Persistent Juveniles

	Escalation	De-escalation	Overall E
VIOLENT	----------	.233	----------
BURGLARY	.318	.191	.064
PROPERTY	.321	.176	.073
AUTO	.427	.382	.023
OTHER	.989	-.183	.586
STATUS	.273	-.073	.173
PROBATION	.031	----------	----------

In reference to the directional nature of offending the overall juvenile trend was de-escalation and this is the case for the nonpersistent offenders as well. However, the persistent juveniles were more likely to escalate in the seriousness of their criminal activity over time. This finding suggests that

the processes of offending are distinct for subgroups of juvenile offenders both in reference to specialization and particularly escalation processes.

D. Adult Subgroup Specialization and Escalation

An analysis of the upper quartile of adult offenders requires that the two adult subgroups consist of those with fewer than twelve adult contacts (nonpersisters) and those with twelve or more adult contacts (persisters). Using the same offense frequency as was done with the juvenile sample (less than seven arrests or more than or equal to seven arrests) would result in half of the adult sample designated as a persistent offender. By using the twelve or more offenses as a definition of persistence in adulthood, 99 (23%) of the 425 individuals with an adult arrest are persistent adults. These 99 offenders committed 53% of all adult offenses. The mean number of arrests for the adult persisters was 18.16 and the mean for nonpersistent adults was 4.98. As juveniles it would have been difficult to identify the future adult persisters based on the frequency of juvenile offending alone-- the future adult persisters had an average of 5.34 juvenile contacts and the future adult nonpersisters had a mean of 5.20 juvenile contacts.

Based on the difference in the mean numbers of offenses as adults for these groups we might expect differences in the levels of specialization and escalation as well. A criminal career perspective suggests that the more frequent adult offender will

be more committed to criminality and therefore more specialized and perhaps more serious over time. The Gottfredson and Hirschi perspective suggests that we should not expect differences in the nature of criminality based on differences in the frequencies of offending.

Adult offending was stationary and therefore the adult subgroup analysis is based on summary matrix statistics. Also, a test for homogeneity in the probabilities of committing certain kinds of offenses finds that the adult subgroups are homogeneous (.080) and therefore we can expect similar trends in specialization and escalation.

Table 7.6 Specialization for Nonpersistent and Persistent Adults

	NONPERSISTERS		PERSISTERS	
	EXPECTED VALUE	SPECIALIZATION COEFFICIENT	EXPECTED VALUE	SPECIALIZATION COEFFICIENT
VIO	7.07	.025	3.95	.060
ROBB	1.86	.178*	.52	.115*
BURG	26.06	.261*	11.65	.199*
PROP	41.09	.158*	33.69	.155*
OTHR	85.64	.273*	44.02	.274*
ALCO	47.06	.402*	61.61	.419*
PROB	2.28	.110*	3.95	.021

Violent specialization is not significant for either adult subgroup and the specialization coefficients are significant for robbery, burglary and property offending for both groups although slightly higher for nonpersistent offenders. The level of

specialization for the category of other is almost identical for the two groups. In addition to a relatively high level of specialization in other offending, both groups have significant and strong levels of specialization in alcohol offending. Perhaps the stronger level of alcohol specialization for the persistent adults is related to the reason they are such persistent offenders. Whether or not a history of alcohol offenses is viewed as part of a criminal career or a manifestation of an illness is of consequence for criminological theory.

Table 7.7 Escalation for Nonpersistent Adults

	ESCALATION	DE-ESCALATION	OVERALL E
VIOLENT	----------	.026	----------
ROBBERY	.085	.263	-.089
BURGLARY	.014	.316	-.151
PROPERTY	.157	.247	-.045
OTHER	.037	.208	-.086
ALCOHOL	.366	.902	-.268
PROBATION	.119	----------	----------

The directional nature of offending over time is similar for the adult subgroups. In all cases there was de-escalation with slightly stronger levels of de-escalation for nonpersistent adults. Partitioning the adult offenders finds much less differences in the subgroups than was found for juveniles subgroups.

Table 7.8 Escalation for Persistent Adults			
	ESCALATION	DE-ESCALATION	OVERALL E
VIOLENT	----------	.061	----------
ROBBERY	.139	.246	-.054
BURGLARY	.025	.243	-.109
PROPERTY	.013	.227	-.107
OTHER	.007	.343	-.168
AUTO	.403	.561	-.079
PROBATION	.023	----------	----------

For both juveniles and adults, looking at subgroup differences has muddied the waters in reference to the theoretical imagery generated by the criminal career perspective. Transition matrix analysis is but one method of assessing the extent of specialization in criminal offending and has many limitations that may be overcome through alternative methods. The development of criminal typologies provides a method of assessing specialization that may provide a glimpse of offending not accessible from matrix analysis.

E. Typology Development and Specialization

Due to the number of cases needed for matrix analysis it was necessary to collapse many specific crimes into crime categories. In addition, matrix analysis analyzes pairs of like offenses to

assess specialization. If a first arrest was burglary, a second arrest car theft and a third arrest burglary, this offender would not be a specialist according to matrix analysis that focuses on pairs of events. It is possible to analyze more than two events with matrix analysis but this requires a larger number of events than the present sample contains.

Using matrix analysis to assess levels of specialization will results in lost information about offending processes. An alternative measure of specialization is one that considers all of the offenses committed by an individual during their offending career and whether or not a significant number of them are of the same type. As noted previously this is but one typology that may be used. The present research uses a behavioral typology because the objective is to describe the offending process rather than to describe specific characteristics of the offenders.

Developing a typology of offending allows for an assessment of specialization that would not be dependent on pairs of like offenses as is the case with matrix analysis. Bursik (1984) found that by looking for cases where more than 50% of an individual's offenses are for the same type provides evidence of more specialization than is found with matrix analysis. As noted by Bursik the temporal ordering of offending is lost with this measure of specialization and thus I will not be able to test for escalation as previously defined.

The designation of a specialist as someone who had 1/2 or more of their offenses of the same type is admittedly arbitrary.

However, this measure does indicate the majority of an individual's offenses. With this measure of specialization I am also able to compare the number of specialists in each category for juveniles and adults. Also, since I am less constrained by the number of events compared to the matrix analysis, I can look at crime-specific measures of offending. If an offender had only two offenses and the definition of a specialist is one who has 1/2 or more of their offenses of the same kind then the offender with only two offenses would be a specialist for both types of offenses. Therefore it is necessary to analyze offenders who had at least three offenses.

The unit of analysis for this test of specialization is now the individual offender rather than the pairs of arrest events as was the case with matrix analysis. Excluding those persons with fewer than three arrests as well as those individuals for whom there is no criminal history information during the 25-32 age period results in a sample size of 369 for juvenile typologies and 310 for adults. The categories used for typology development are mutually exclusive and not entirely similar to those used in matrix analysis as represented by Tables 4.1 and 4.2. The composition of the categories is the same for both juveniles and adults. The violence category does not include assault and battery or robbery, and the property category does not include auto theft as this is also a separate category for juveniles and adults. Juvenile alcohol offenses are not included in the status category.

Table 7.9 indicates that the types of crimes most likely to dominate 1/2 or more of all of an individuals juvenile offenses are property offenses, followed by other, status and auto offenses. Very few or no juvenile offenders specialize in violent, assaultive, robbery, burglary or alcohol offending. Many of the burglary offenses that contributed to a significant specialization coefficient for matrix analysis were committed by offenders who had only two offenses (as they are excluded in the present analysis) or were only a few offenses of a larger group for that offender.

Table 7.9 Juvenile Specialization as Measured by 50% or More of Offenses of the Same Category (n=369)

	Were 1/2 of Juvenile Arrests of this Type?	
	YES	NO
VIOLENT	5 (1.4%)	364 (98.6%)
ASSAULT	2 (.5%)	367 (99.5%)
ROBBERY	0 (0%)	369 (100%)
PROPERTY	132 (35.8%)	237 (64.2%)
BURGLARY	0 (0%)	369 (100%)
OTHER	51 (13.8%)	318 (86.2%)
ALCOHOL	0 (0%)	369 (100%)
AUTO	35 (9.5%)	334 (100%)
STATUS	45 (12.2%)	324 (87.8%)

As the juveniles became adults they were far less likely to have 1/2 or more of their offenses of the same kind. Adults are most likely to have specialization in other and alcohol offending. More of the offenders did specialize in violent offending as adults but the relative number is still small.

Table 7.10 Adult Specialization as Measures by 50% or More of Offenses of the Same Category (n=310)

	Were 1/2 of Adult Arrests of This Type?	
	YES	NO
VIOLENT	9 (2.9%)	301 (97.1%)
ASSAULT	1 (.3%)	309 (99.7%)
ROBBERY	1 (.3%)	309 (99.7%)
PROPERTY	9 (2.9%)	301 (97.1)
BURGLARY	0 (0%)	310 (100%)
OTHER	93 (30%)	217 (70%)
ALCOHOL	61 (19.7%)	249 (80.3%)
AUTO	1 (.3%)	309 (99.7)

Table 7.11 presents the types of juvenile offenders who were likely to desist (no similar offenses in adulthood), persist (commit the same type of crime during both phases, 17-25 and 25-32 years of age, of adulthood) or occasionally (a similar offense during only one phase of adulthood) offend across the life course.

Table 7.11 Likelihood of Desistance, Persistence or Occasional Offending By Type of Crime

	PERSISTERS	OCCASIONALS	DESISTERS
VIOLENT (n=63)	8 (13%)	26 (41%)	29 (46%)
ASSAULT (n=36)	3 (8%)	14 (39%)	19 (53%)
ROBBERY (n=17)	0 (0%)	6 (35%)	11 (65%)
PROPERTY (n=393)	104 (26%)	160 (41%)	129 (33%)
BURGLARY (n=289)	36 (12%)	90 (31%)	163 (56%)
OTHER (n=331)	126 (38%)	127 (38%)	78 (24%)
ALCOHOL (n=10)	5 (50%)	4 (40%)	1 (10%)
AUTO (n= 142)	0 (0%)	3 (2%)	139 (98%)

The crimes most likely to be repeated across all three time periods were alcohol, other, property and burglary. Although few

juveniles had an alcohol arrest those that did were likely to persist in this type of offending. There were no robbery persisters and few individuals who persisted throughout adulthood with assault and battery offenses. Similar to the findings for the matrix analysis, more serious crimes are those least likely to indicate specialization.

F. Summary

Looking at subgroups of juvenile offenders reveals that there is a group of juvenile offenders for whom the nature of offending is different. The persistent juvenile offenders were more likely to specialize in more serious crimes and less likely to specialize in status offending. Also, this group of offenders was the only group for whom there was escalation in the seriousness of offending. This finding contrasts the prediction made by Gottfredson and Hirschi who suggest that there will be only differences in the frequency of offending and not the nature as is the case here. In the present sample there is a group of juvenile offenders whose offending patterns to some extent reflect the assumptions of policies such as selective incapacitation.

Since adult offenders are the primary targets of policies of selective incapacitation, the efficacy of this policy depends on identifying a group of adult offenders whose offending is more serious and escalating. Although some adults had higher rates of offending than others, no group of adult offenders was identified

whose offending patterns met the assumptions of a policy of selective incapacitation.

In order to assess specialization in a manner that was not dependent upon consecutive like offenses, a typology of offending was constructed. This offender-based analysis illustrated the extent to which specialization or the lack thereof is in part related to the method chosen to assess specialization.

Chapter Eight

Summary and Conclusions

A. Principal Findings

The objective of this study was to describe the offending patterns of a group of individuals from adolescence into adulthood. The specific focus was to assess whether or not for the same group of offenders there were trends in specialization or escalation in offending over the life course. Almost all of the previous research on specialization and escalation had focused on either juvenile or adult offending patterns. The Glueck data enabled me to assess offending patterns throughout both of these life phases.

Prior to testing for specialization and escalation, an ancillary objective was to assess the level of stationarity and homogeneity in offending. Juvenile offending processes including those of nonpersistent offenders were found to vary across time in the likelihood of offense switching. A number of factors contributed to this finding including offense-specific properties of juvenile burglary and status offending. At later transitions burglary offenders began to de-escalate and status offenders began to escalate. Comparing juvenile and adult trends, juvenile offending was characterized by stronger trends in de-escalation for violent, burglary and other offending than was adult offending. Trends in either direction, i.e., escalation or de-escalation, will contribute to a finding of nonstationarity.

Although adults had higher levels of de-escalation after property crimes than did juveniles, the overall directional nature of adult offending was thus characterized by more randomness and hence stationarity in adult offending.

Based on the assumption that there may be variations in the probabilities of offending for certain subgroups, homogeneity in offending was assessed. This test found no significant differences in the probabilities of switching from one offense category to another by subgroup for either juveniles or adults. Even the nonpersistent summary matrices for juveniles and adults were not found to differ significantly from those of the persistent offender patterns. This finding may be at least in part due to the nature of the Glueck sample. The individuals in this study represent a fairly homogeneous group in that they were all institutionalized as juveniles. Assessing homogeneity is perhaps more important for studies where the nature of the sample is more diverse such as all persons arrested in a given year.

Specialization was found at some level for virtually all crime types within all of the subgroups. The strongest level of juvenile specialization was for auto offending and this was also the case for persistent juveniles, although for nonpersistent juveniles the likelihood of auto specialization was more erratic as indicated by the transition-specific findings. Violent offending was significantly specialized for juveniles as a group and higher for persistent juveniles and again more erratic for nonpersistent juveniles as it was significant at some transitions

and not others. Although burglary offending was significant for nonpersistent offenders at all transitions, the overall level of burglary offending was lower for persistent offenders. Also noteworthy is the lower level of status specialization for persistent offenders than for nonpersistent offenders. This finding would suggest that the more committed juvenile offender is less likely to specialize in trivial offenses.

For adults there was significant specialization for all categories except violent offending. The level of specialization in burglary was higher for adults than for juveniles as was the level of other offending. Whereas the highest level of specialization for juveniles was auto and status offending, for adults the highest level was alcohol offending.

When possible, the direction of offending was assessed by using an overall E statistic which is a summary total escalation measure previously used by Blumstein et al. (1989). In most cases this statistic was close to zero, indicating an absence of any strong directional sense of offending and hence an independence over time in the direction of offending. For juveniles as a group the overall direction of offending did suggest de-escalation. For the categories of other and status offending there was a slight trend towards escalation in offending. The pattern of de-escalation was not found for the persistent juvenile offenders, indicating that at least for this group there is an overall trend towards escalation in the seriousness of offending over time.

The typologies of offending that were constructed to provide an alternative measure of specialization provide insight into specialization across the entirety of the juvenile and adult phase. It is useful to conceptualize specialization in this manner as these typologies do not suffer from the matrix constraint that only reflects specialization as pairs of like crimes committed consecutively. The findings from this method indicated that with burglary offending both juveniles and adults were unlikely to have 1/2 of their arrests of this type. This finding contrasts the earlier significant specialization findings from matrix analysis and would indicate that although a burglary may be followed by another burglary, burglary offenders also commit many other types of crime over the course of their offending. The findings of little or no typology specialization suggests that for some offense categories such as burglary, a finding of specialization is method-dependent. To some extent, specialization and escalation in offending is thus dependent on the choice of analytic technique.

B. Strengths and Limitations

Previous research has recommended an analysis of offending patterns that included both juvenile and adult offending histories (Cohen, 1986; Blumstein, 1988). The present research attempted to compare trends in specialization and escalation for the same group of offenders during both the juvenile and adult phases. Several impediments were found in comparing juvenile and

adult offending processes using transition matrix analysis. First, the juvenile phase in these data consists of a shorter time span (7-17 years of age versus 17-32) of offending and therefore a smaller number of offenses. For example, it was not substantively meaningful nor statistically possible to include robbery as a juvenile category and so an adult comparison is not possible. Also, although some comparison was possible for categories such as other, burglary and property offending, comparisons should be made cautiously because of the type of offenses which comprise these categories. For example, the juvenile category of other was dominated by offenses of a different nature than was the adult category of other. In situations where there is not a significant number of offenders to allow for specific crimes to be the focus rather than collapsed categories, this problem will remain. Future assessments of juvenile and adult transitions should focus on specific crime types and thus will require very large data sets.

The present research used official records as the measure of criminal activity and although this allowed for the sequencing of the criminal activities there was undoubtedly criminal activity that did not come to the attention of the agents of the juvenile and criminal justice system. In actuality this research and other research that is dependent upon official records presents the findings of an assessment of arrest patterns rather than actual offending patterns. It would be preferable to have offending histories that had been supplemented by self-reports of

temporally-ordered offending.

Transition matrix analysis is dependent on sequences of offending and thus specialization that occurs outside of pairs of offenses is lost. The preliminary typology development of Chapter Seven was intended to tap a domain of specialization that was untapped by transition matrix analysis. The result was a somewhat different picture of specialization based on the whole career of offending but much of the temporal order of offending was lost.

C. Policy Implications

This research provides insight into several relevant policy questions: 1) Are certain types of offenders more likely to specialize and escalate than others? 2) Within the juvenile phase are status offenders specialists and/or are they as likely to escalate as other juvenile offenders? 3) Are patterns of desistance and persistence in offending related to crime type?

Although specialization is statistically significant for most crime types, specialization is found within a larger framework of diversity. Though not impossible, it is still difficult to predict serious crimes. The best prediction is most cases is that the next offense will be a property offense. The outlook for a policy of selective incapacitation with the goal of predicting and preventing serious crime by identifying those offenders who may be specializing in serious offenses and/or escalating is gloomy. Although gloomy overall, there is a small

group of juvenile offenders who are escalating in seriousness and more likely to specialize in serious crimes than other juveniles. Were we able to identify these persistent juveniles based on early factors, adopting a policy of selective incapacitation for 12 year olds undercuts the basic nurturing and protecting philosophy of the juvenile justice system.

In reference to the status offender debate, these results suggest that status offenders relative to other types of juvenile crimes are somewhat more likely to specialize. Also, at later transitions there was a directional turn towards following a status offense with a more serious offense. Early status offenders are more likely to specialize or de-escalate whereas later status offenders may be at risk for escalation. Since there is not a strong level of specialization in status offending, the directional nature of status offending is somewhat random and many status offenders had a delinquent event before a status offense, at least for this sample, status offenders aren't a different type of offender and are likely to be involved in other delinquencies.

According to the results of typology analysis, alcohol and other offenders are the most likely offenders to repeat the same behaviors across both the juvenile and the two adult phases. Those offenders least likely to continue offending into adulthood were auto (perhaps because you gain legitimate access to a vehicle with adulthood), robbery (perhaps because this crime requires potential physical aggression on behalf of the

offender), and burglary.

In terms of policy, selective incapacitation attempts to identify individuals who are escalating in either the seriousness and/or frequency of their offending. The present analysis suggests that the only group that would seem to be a candidate for selective incapacitation would be the juvenile persistent offender. However, by the time we realize who the persistent offenders are in terms of their high-rate offending and more serious offending, a significant amount of their criminal activity has already taken place. A policy of selective incapacitation may be more effective if we can identify these offenders based on other characteristics rather than just the nature of their offending patterns. Investigation into differential causal processes seems warranted.

D. Theoretical Implications

The theoretical framework implied by previous and current research reflects competing perspectives concerning patterns of offending. Criminal career researchers suggest that offending follows a developmental/progressional path with certain types of offenders specializing in certain crime types and escalating in seriousness over time (Blumstein et al., 1986; 1988a; 1988b). Alternatively, the work of Hirschi and Gottfredson (1983; 1986; 1988; also, Gottfredson and Hirschi; 1990) predicts that offending patterns will be characterized by versatility and are not characterized by specialization and escalation. The recent

work of Le Blanc and Frechette (1989) and Loeber and Le Blanc (1990) proposes that offending patterns are characterized by hierarchic development through the end of adolescence and based on the orthogenetic principle, offending patterns will become less differentiated and more specialized over time.

Less specialization and escalation was found than is predicted by the criminal career model and more specialization was found than is specifically predicted by the criminality perspective of Gottfredson and Hirschi. The theoretical perspective that seems best able to account for the present findings is the developmental perspective. Both hierarchic and orthogenetic principles seem to adequately describe the dominant offending patterns of this sample. However, even this theoretical framework must be modified to include the potential for escalation among some offenders and to provide a more detailed discussion of why we might expect specialization for some crime types and not others.

Another concern in terms of the theoretical relevance of these and other findings is the use of categories of criminal behavior. Although the methodology and sample size made it a necessity to collapse specific crime types into broader categories of criminality this alone may have forced the level of specialization that was found. An embezzler, car thief, and vandalist are all adult property offenders and thus an individual who committed these three offenses would have a perfect specialization coefficient when in fact the commission of these

specific crimes may not reflect specialization at all.

Only escalation and de-escalation between categories was assessed and this is the case for previous research as well. If escalation can refer to a burglar taking items of greater value on each burglary or the time between burglaries decreasing, studies using matrix analysis and typologies of offending will to a great extent be unable to tap this domain. It is unfortunate that our theories about the causes of crimes depend in large part on the methods we choose.

E. Implications for Future Research

Larger samples would enable future researchers to overcome several of the limitations of the current research. With larger numbers of offenders and offenses, offense triples and quadruples could be analyzed rather than just offense pairs. Also, specific offense categories could be used rather than collapsed categories. I was able to assess the offending processes of certain subgroups of offenders but more finely tuned comparisons that were able to partition out various theoretically meaningful variables such as IQ and family structure were not possible. Even if we are able to have more discriminating categories and matrices, it is likely that we will still use official records in order to establish time sequence. The collection of self-reported, time-ordered life histories seems to be the brightest hope for constructing meaningful criminological theory about the nature of offending.

This research illustrates that the images of the criminal lifestyle are to some extent constructed by the methods used to study offending patterns. The ability of criminologists to reconcile quantitative findings of diversity in offending with ethnographic research on the burglar, safecracker, and serial murderer is essential to the further development of useful criminological theory.

Appendices

Appendix A

HEADER RECORD (code *one* for each case)

Begin Card 1/

Case # 1 2 3 4

Record type 5

Birthdate 6 7 8 9 10 11

Exam date (time 1) 12 13 14 15 16 17

Time 2 date 18 19 20 21 22 23

Time 3 date 24 25 26 27 28 29

Date of death (if applicable) 30 31 32 33 34 35

Status at time selected for study: 36

1 = Lyman (L.S.)
2 = Shirley (L.S.B.)
3 = Other delinquent
4 = Nondelinquent

Total # contacts 37 38

Coder _____ 39 /End Card 1

Time start

Time end

Date

CRIMINAL HISTORY [code *one* for each and every arrest event]

Case #	1 2 3 4
Record type	5
Time period	6
Arrest sequence #	7 8
Date of contact	9 10 11 12 13 14
Court location	15 16

	CHARGE	COUNTS	DISPOSITION
#1	17 18	19 20	21 22
#2	23 24	25 26	27 28
#3	29 30	31 32	33 34
Correctional violation?	35		
Total # charges	36 37		

CUSTODY EVENTS [code *actual* time]

PROBATION	38	39	40	41	42	43	to	44	45	46	47	48	49
INCARCERATION #1	50	51	52	53	54	55	to	56	57	58	59	60	61
PAROLE #1	62	63	64	65	66	67	to	68	69	70	71	72	73
Revocation of parole #1?				74	75	76	77	78	79	/End card 1. Begin card 2			
INCARCERATION #2	1	2	3	4	5	6	to	7	8	9	10	11	12
PAROLE #2	13	14	15	16	17	18	to	19	20	21	22	23	24
Revocation of parole #2?				25	26	27	28	29	30				
INCARCERATION #3	31	32	33	34	35	36	to	37	38	39	40	41	42
PAROLE #3	43	44	45	46	47	48	to	49	50	51	52	53	54

/End card 2

APPENDIX B-1 INDIVIDUAL JUVENILE TRANSITION MATRIX: TRANSITION 1

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	7	9	1	1		3		21
	.333	.429	.048	.048		.143		.046
BURG	5	56	52	9	1	18	5	146
	.034	.384	.356	.062	.007	.123	.034	.317
PROP	4	44	78	10	6	24	6	172
	.023	.256	.453	.058	.035	.140	.035	.373
AUTO		6	4	9	1	4	4	28
		.214	.143	.321	.036	.143	.143	.061
OTHR	1	3	4		2	4		14
	.071	.214	.286		.143	.286		.030
STAT	2	12	15	3	2	45	1	80
	.025	.150	.188	.038	.025	.563	.013	.174
Column Total	19	130	154	32	12	98	16	461
	.041	.282	.334	.069	.026	.213	.035	1.00

APPENDIX B-2 INDIVIDUAL JUVENILE TRANSITION MATRIX: TRANSITION 2

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	2	2	7	1		1	2	15
	.133	.133	.467	.067		.067	.133	.036
BURG	1	65	27	4	5	12	6	120
	.008	.542	.225	.033	.042	.100	.050	.288
PROP	6	34	75	7	1	19	5	147
	.041	.231	.510	.048	.007	.129	.034	.353
AUTO		3	4	15			4	26
		.115	.154	.577			.154	.063
OTHR	2	2	3	2	1		1	11
	.182	.182	.273	.182	.091		.091	.026
STAT		22	18	3	2	36	1	82
		.268	.220	.037	.024	.439	.012	.197
PROB		5	6	2	1	1		15
		.333	.400	.133	.067	.067		.036
Column Total	11	133	140	34	10	69	19	416
	.026	.320	.337	.082	.024	.166	.046	1.00

APPENDIX B-3 JUVENILE INDIVIDUAL TRANSITION MATRIX: TRANSITION 3

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	2	2	3		2			9
	.222	.222	.333		.222			.028
BURG	3	49	22	7	4	10	9	104
	.029	.471	.212	.067	.038	.096	.087	.324
PROP	5	36	54	6	3	6	5	115
	.043	.313	.470	.052	.026	.052	.043	.358
AUTO		4	6	10			3	23
		.174	.261	.435			.130	.072
OTHR			2	2	2	1		7
			.286	.286	.286	.143		.022
STAT	2	12	12	3	1	18	1	49
	.041	.245	.245	.061	.020	.367	.020	.153
PROB		3	5	1	2		3	14
		.214	.357	.071	.143		.214	.044
Column Total	12	106	104	29	14	35	21	321
	.037	.330	.324	.090	.044	.109	.065	1.00

APPENDIX B-4 JUVENILE INDIVIDUAL TRANSITION MATRIX: TRANSITION 4

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	1 .167	1 .167	4 .667					6 .026
BURG		32 .400	22 .275	12 .150	2 .025	6 .075	6 .075	80 .342
PROP	1 .013	20 .256	39 .500	8 .103	1 .013	4 .051	5 .064	78 .333
AUTO	2 .105	1 .053	4 .211	6 .316	2 .105		4 .211	19 .081
OTHR		4 .364	4 .364	1 .091	1 .091		1 .091	11 .047
STAT	3 .111	9 .333	4 .148	1 .037	1 .037	7 .259	2 .074	27 .115
PROB	1 .077	6 .462	4 .308	1 .077	1 .077			13 .056
Column Total	8 .034	73 .312	81 .346	29 .124	8 .034	17 .073	18 .077	234 1.00

APPENDIX B-5 JUVENILE INDIVIDUAL TRANSITION MATRIX: TRANSITION 5

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR		4		2				6
		.667		.333				.037
BURG		21	12	7	3	3	3	49
		.429	.245	.143	.061	.061	.061	.299
PROP	4	22	23	4	2	6	1	62
	.065	.355	.371	.065	.032	.097	.016	.378
AUTO	2	5	2	8			1	18
	.111	.278	.111	.444			.056	.110
OTH		1			4			5
		.200			.800			.030
STAT	1	4	2	3	1	2		13
	.077	.308	.154	.231	.077	.154		.079
PROB		5	3	1		1	1	11
		.455	.273	.091		.091	.091	.067
Column Total	7	62	42	25	10	12	6	164
	.043	.378	.256	.152	.061	.073	.037	1.00

APPENDIX B-6 JUVENILE INDIVIDUAL MATRIX: TRANSITION 6

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	2	1			1			4
	.500	.250			.250			.037
BURG	1	25	3	3	1		2	35
	.029	.714	.086	.086	.029		.057	.324
PROP	3	6	10	5	1	3	5	33
	.091	.182	.303	.152	.030	.091	.152	.306
AUTO	1	5	2	5			2	15
	.067	.333	.133	.333			.133	.139
OTHR	1		2	1	1			5
	.200		.400	.200	.200			.046
STAT			5	2	3	1		11
			.455	.182	.273	.091		.102
PROB		2	2	1				5
		.400	.400	.200				.046
Column Total	8	39	24	17	7	4	9	108
	.074	.361	.222	.157	.065	.037	.083	1.00

APPENDIX B-7 JUVENILE INDIVIDUAL TRANSITION MATRIX: TRANSITION 7

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	1	1						2
	.500	.500						.029
BURG		17	5	7	1			30
		.567	.167	.233	.033			.435
PROP	1	4	8			3	3	19
	.053	.211	.421			.158	.158	.275
AUTO		3	1	2				6
		.500	.167	.333				.087
OTHR	1	1	1	1				4
	.250	.250	.250	.250				.058
STAT		1	1		1			3
		.333	.333		.333			.043
PROB		2	3					5
		.400	.600					.072
Column Total	3	29	19	10	2	3	3	69
	.043	.420	.275	.145	.029	.043	.043	1.00

APPENDIX B-8 JUVENILE INDIVIDUAL TRANSITION MATRIX: TRANSITION 8

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	STAT	PROB	Row Total
VIOR	1 .500			1 .500				2 .049
BURG	1 .045	11 .500	6 .273	1 .045	1 .045		2 .091	22 .537
PROP	1 .091	3 .273	3 .273	2 .182		1 .091	1 .091	11 .268
AUTO			1 .333	2 .667				3 .073
OTHR			1 1.00					1 .024
STAT					1 1.00			1 .024
PROB			1 1.00					1 .024
Column Total	3 .073	14 .341	12 .293	6 .146	2 .049	1 .024	3 .073	41 1.00

APPENDIX B-9 JUVENILE TRANSITION MATRIX: TRANSITION 9

FREQ / PROB	VIOR	BURG	PROP	AUTO	OTHR	Row Total
BURG	1	6	1	1	1	10
	.100	.600	.100	.100	.100	.455
PROP		4	3			7
		.571	.429			.318
OTHR					1	1
					1.00	.045
STAT			1			1
			1.00			.045
PROB		1	2			3
		.333	.667			.136
Column Total	1	11	7	1	2	22
	.045	.500	.318	.045	.091	1.00

APPENDIX B-10 JUVENILE INDIVIDUAL MATRIX: TRANSITION 10

FREQ / PROB	VIOR	BURG	PROP	AUTO	Row Total
VIOR		1			1
		1.00			.059
BURG		5	2	1	8
		.625	.250	.125	.471
PROP		4	1	1	6
		.667	.167	.167	.353
AUTO	1	1			2
	.500	.500			.118
Column Total	1	11	3	2	17
	.059	.647	.176	.118	1.00

APPENDIX C-1 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 1

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	2		1	4	4	2		13
	.154		.077	30.8	30.8	15.4		4.1
ROBB	2	3	1	3	1	4		14
	.143	.214	.071	.214	.071	.286		.045
BURG	5	2	12	12	11	5	2	49
	.102	.041	.245	.245	.224	.102	.041	.156
PROP	5	2	21	29	23	14	4	98
	.051	.020	.214	.296	.235	.143	.041	.312
OTHR	6		9	16	38	13	3	85
	.071		.106	.188	.447	.153	.035	.271
ALCO	4	1	4	10	11	24		54
	.074	.019	.074	.185	.204	.444		.172
PROB			1					1
			1.00					.003
Column Total	24	8	49	74	88	62	9	314
	.076	.025	.156	.236	.280	.197	.029	1.00

APPENDIX C-2 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 2

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	4	2	3	5	3	2		19
	.211	.105	.158	.263	.158	.105		.070
ROBB	1		3			2		6
	.167		.500			.333		.022
BURG	8	1	13	7	7	8	1	45
	.178	.022	.289	.156	.156	.178	.022	.165
PROP	8	4	10	23	16	9	4	74
	.108	.054	.135	.311	.216	.122	.054	.271
OTHR	3	1	5	13	30	15	2	69
	.043	.014	.072	.188	.435	.217	.029	.253
ALCO	2	2	3	8	10	26	2	53
	.038	.038	.057	.151	.189	.491	.038	.194
PROB			1		3	1	2	7
			.143		.429	.143	.286	.026
Column Total	26	10	38	56	69	63	11	273
	.095	.037	.139	.205	.253	.231	.040	1.00

APPENDIX C-3 ADULT INDIVIDUAL TRANSITION MMATRIX: TRANSITION 3

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	1	3	3	3	6	7	1	24
	.042	.125	.125	.125	.250	.292	.042	.097
ROBB	3		1	2	3	2		11
	.273		.091	.182	.273	.182		.045
BURG	2		14	8	2	4	3	33
	.061		.424	.242	.061	.121	.091	.134
PROP	1	3	5	25	8	7	6	55
	.018	.055	.091	.455	.145	.127	.109	.223
OTHR	4		5	7	29	9	4	58
	.069		.086	.121	.500	.155	.069	.235
ALCO	2	2	5	6	4	36		55
	.036	.036	.091	.109	.073	.655		.223
PROB	1		3	3	1	2	1	11
	.091		.273	.273	.091	.182	.091	.045
Column Total	14	8	36	54	53	67	15	247
	.057	.032	.146	.219	.215	.271	.061	1.00

APPENDIX C-4 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 4

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	2			3	6	4		15
	.133			.200	.400	.267		.067
ROBB		1	1		2		1	5
		.200	.200		.400		.200	.022
BURG	3	2	17	8	6	3	1	40
	.075	.500	.425	.200	.150	.075	.025	.179
PROP	4	2	10	9	8	11	7	51
	.078	.039	.196	.176	.157	.216	.137	.229
OTHR	4	1	4	5	20	5	3	42
	.095	.024	.095	.119	.476	.119	.071	.188
ALCO	4		3	7	9	32	1	56
	.071		.054	.125	.161	.571	.018	.251
PROB	1			3	5	1	4	14
	.071			.214	.357	.071	.286	.063
Column Total	18	6	35	35	56	56	17	223
	.081	.027	.157	.157	.251	.251	.076	1.00

APPENDIX C-5 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 5

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	1	2		1	6	4	2	16
	.063	.125		.063	.375	.250	.125	.081
ROBB	2	1		1				4
	.500	.250		.250				.020
BURG	3	1	12	7	3	4	3	33
	.091	.030	.364	.212	.091	.121	.091	.167
PROP	4	1	4	13	7	6	1	36
	.111	.028	.111	.361	.194	.167	.028	.182
OTHR	2		7	2	24	7	4	46
	.043		.152	.043	.522	.152	.087	.232
ALCO	4	1	1	4	9	29	1	49
	.082	.020	.020	.082	.184	.592	.020	.247
PROB	1		3	3	4	2	1	14
	.071		.214	.214	.286	.143	.071	.071
Column Total	17	6	27	31	53	52	12	198
	.086	.030	.136	.157	.268	.263	.061	1.00

APPENDIX C-6 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 6

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	1	1	2	1	5	1	1	12
	.083	.083	.167	.083	.417	.083	.083	.067
ROBB		2		1	1	1		5
		.400		.200	.200	.200		.028
BURG	3	1	9	5	4	2	1	25
	.120	.040	.360	.200	.160	.080	.040	.140
PROP	2	1	4	7	6	6	2	28
	.071	.036	.143	.250	.214	.214	.071	.157
OTHR	9	1	2	6	24	7	2	51
	.176	.020	.039	.118	.471	.137	.039	.287
ALCO	2		3	5	6	27	2	45
	.044		.067	.111	.133	.600	.044	.253
PROB			3	2	4	2	1	12
			.250	.167	.333	.167	.083	.067
Column Total	17	6	23	27	50	46	9	178
	.096	.034	.129	.152	.281	.258	.051	1.00

APPENDIX C-7 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 7

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	2	2	1	1	6	3	1	16
	.125	.125	.063	.063	.375	.188	.063	.109
ROBB		1	1		1		1	4
		.250	.250		.250		.250	.027
BURG	1	1	6	5	4	1	3	21
	.048	.048	.286	.238	.190	.048	.143	.143
PROP		3	1	7	5	3	3	22
		.136	.045	.318	.227	.136	.136	.150
OTHR	7	2	2	4	15	3	5	38
	.184	.053	.053	.105	.395	.079	.132	.259
ALCO	2	2	3	2	9	19		37
	.054	.054	.081	.054	.243	.514		.252
PROB	1			2	4	1	1	9
	.111			.222	.444	.111	.111	.061
Column Total	13	11	14	21	44	30	14	147
	.088	.075	.095	.143	.299	.204	.095	1.00

APPENDIX C-8 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 8

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	2	1	1	1	4	3		12
	.167	.083	.083	.083	.333	.250		.093
ROBB	1	1	2		2	1	2	9
	.111	.111	.222		.222	.111	.222	.070
BURG	1		4	1	1	3		10
	.100		.400	.100	.100	.300		.078
PROP		1	2	9	2	3	3	20
		.050	.100	.450	.100	.150	.150	.155
OTHR	2	1	3	3	16	5	7	37
	.054	.027	.081	.081	.432	.135	.189	.287
ALCO	2	1	1	1	6	17		28
	.071	.036	.036	.036	.214	.607		.217
PROB		2	1	3	4	1	2	13
		.154	.077	.231	.308	.077	.154	.101
Column Total	8	7	14	18	35	33	14	129
	.062	.054	.109	.140	.271	.256	.109	1.00

APPENDIX C-9 ADULT INDIVIDUAL TRANSITION MATRIX: TRANSITION 9

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL					3	2	1	6
					.500	.333	.167	.057
ROBB		1	1		1			3
		.333	.333		.333			.029
BURG			4	2	1	2	1	10
			.400	.200	.100	.200	.100	.095
PROP		2	2	3	3	3	2	15
		.133	.133	.200	.200	.200	.133	.143
OTHR	2		1	4	16	4	1	28
	.071		.036	.143	.571	.143	.036	.267
ALCO	2	1	1	5	5	16	2	32
	.063	.031	.031	.156	.156	.500	.063	.305
PROB	3		1	2	3	2		11
	.273		.091	.182	.273	.182		.105
Column Total	7	4	10	16	32	29	7	105
	.067	.038	.095	.152	.305	.276	.067	1.00

APPENDIX C-10 ADULT TRANSITION MATRIX: TRANSITION 10

FREQ / PROB	VIOL	ROBB	BURG	PROP	OTHR	ALCO	PROB	Row Total
VIOL	1				4	2		7
	.143				.571	.286		.071
ROBB	1	2						3
	.333	.667						.030
BURG	1		4	2	1	2	2	12
	.083		.333	.167	.083	.167	.167	.121
PROP	1		3	3	3	5		15
	.067		.200	.200	.200	.333		.152
OTHR			1	6	14	2	5	28
			.036	.214	.500	.071	.179	.283
ALCO	1		2		7	17		27
	.037		.074		.259	.630		.273
PROB	1			3	2	1		7
	.143			.429	.286	.143		.071
Column Total	6	2	10	14	31	29	7	99
	.061	.200	.101	.141	.313	.293	.071	1.00

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