SPECTRUM ANALYSIS

PRISON INCARCERATION CRIME SWITCH PATTERNS AMONG CAREER CRIMINALS

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PRISON INCARCERATION CRIME SWITCH PATTERNS AMONG CAREER CRIMINALS

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ACQUISITIONS

This report is based on the following machine-readable data files:

Bureau of Justice Statistics. U.S. Department of Justice. SURVEY OF INMATES OF STATE CORRECTIONAL FACILITIES, 1979.

Bureau of Justice Statistics. U.S. Department of Justice. SURVEY OF INMATES OF STATE CORRECTIONAL FACILITIES, 1974.

The data were originally collected by the Bureau of the Census for the Principal Investigator, the Bureau of Justice Statistics. Machine readable data files are maintained by and were obtained from the Inter-university Consortium for Political and Social Research, P.O. Box 1248, Ann Arbor, Michigan 48106.

DISCLAIMER

Neither the Bureau of the Census, the Bureau of Justice Statistics, nor the Inter-university Consortium bear any responsibility for the data analysis or interpretations prresented herein.

BACKGROUND

This study is the second in a short series of analyses of patterns of career criminal recidivism and of the characteristics of inmates who exhibit these patterns. Data bases employed in these companion studies are the Surveys of Inmates of State Correctional Facilities, 1974 and 1979, conducted by the U. S. Bureau of the Census for the Bureau of Justice Statistics.

The subject of the first study, Time Served: Does It Relate To Patterns of Criminal Recidivism?, was time served and its relationship to subsequent offense seriousness. This second study, Prison Incarceration Crime Switch Patterns Among Career Criminals, examines patterns of criminal recidivism for both recent admission and recent release cohorts.

Understanding the nature of crime progression is an essential element of career criminal research whose importance has been recognized for at least the better part of the century. This is evidenced by 19th century attempts to develop criminal typologies including physiological typologies (Lombroso, 1898) and subsequent personality typologies (Jung, 1923).

Early studies tended to be biographical or autobiographical in nature (e.g., Booth 1929; Shaw 1930, 1931; Sutherland 1937; Martin 1952). These qualitative studies provided insights into individual criminal behavior patterns selected largely for their unique interest, but said little about the prevalence of various criminal behavior types in a representative cross section of a criminal population. The first large scale quantitative attempt to investigate criminal careers was a series of studies initiated by Sheldon and Eleanor Glueck in 1930 (Glueck and Glueck 1930, 1934a, 1934b, 1937, 1943a, 1943b, 1950, 1968). While their research made a definite contribution to the knowledge of criminal careers, the methodology was unsophisticated and the treatment of crime career patterns, general.

During the next few decades emphasis was on theoretical typology explanations in contrast to empirical analysis of crime career patterns (Schrag 1961; Hood and Sparks 1970; Gibbons and Garrity 1962; Ferdinand 1966; Glaser 1972; Gibbons 1972,1973; Clinard and Quinney 1973). Without empirical verification, however, this approach appeared to be reaching diminishing returns. As stated by Gibbons (1972), "It is by no means clear that existing typologies of criminals, including the one I have advanced, are empirically precise. It has yet to be shown that the degree of patterning or regularity of offense behavior which typologies assume truly does exist in most cases of criminality".

Despite this clear need for empirical analysis of patterns of recidivism, or "crime switch" patterns as they are generally called, the number of such studies has been quite limited. This is not because of a lack of interest in or importance of the subject, but is due to the fact that rather large, specialized data bases are required. Hence, the opportunity to conduct these studies is relatively rare.

At the present time, there are four major sources of data on criminal career patterns. With respect to police contacts of male adolescents, the key source is the Philadelphia birth cohort study by Wolfgang, Figlio and Sellin, 1973 (follow-up studies of this cohort through age 26 were also made). With respect to self-report estimates of the number and types of crimes actually committed throughout the criminal career, the key source is a series of Rand Studies (Petersilia, Greenwood and Lavin 1978; Peterson, Braiker and Polich 1980; Chaiken and Chaiken 1983). With respect to adult criminal histories based on official files, there are two principal sources. The first is the FBI Careers in Crime file (for a summary of special study findings reference Staff Report to the National Commission on the Causes and Prevention of Violence, 1969). The second consists of a series of papers resulting from a Spectrum Analysis study based on the Oregon CCH file and conducted under NIC Grant #79-NI-AX-0129 (Reid and Doyon, 1981; Doyon and Reid, 1981; Willstadter, 1982).

These studies generally differ from one another in the following major regards: nature of the study population and period of criminal career covered, definition of recidivism, nature and extent of the data base variables that may be related to the observed patterns, nature of the offenses or offense groupings selected for study, methods employed and questions addressed.

Using official police contacts as the basis for defining recidivism, the Wolfgang et al study traced the offense patterns of a cohort of male juvenile offenders from their first through their eighth delinquent act. Non-index crime, injury crime, theft, damage crime, combination of crimes, and desist (ie, no further police contacts as a juvenile) were used as the offense groupings. It was found, employing Markov analysis techniques, that the likelihood of transitioning from one offense grouping to another tended to remain constant, independent of the number of previous offenses. Significant racial differences were noted, but there was little indication of crime specialization.

Based on self-reports relating to crimes actually committed, the Rand Studies of adult offenders suggested diversity rather than specialization as the norm. The influence of alcohol and drug use on crime rates and types was investigated. Offenders involved with alcohol alone committed fewer and less serious crimes; those involved with alcohol and drugs or drugs alone committed more serious crimes. Chaiken and Chaiken (1983), identified the most serious group of criminals as "violent predators", for whom there appeared to be a clear linkage between drug addiction and repeated property crime. These offenders began taking drugs and committing violent crimes as juveniles and subsequently committed a high rate of property crime, robberies and assaults to feed their addiction. With respect to employment, the Rand studies suggested that while it may not necessarily halt a criminal career, it may dispose offenders to commit less serious and less frequent crimes.

The most detailed published summary of patterns of recidivism based on the FBI Careers in Crime File was that reported by the National

Commission on the Causes and Prevention of Crime. Both rearrest and reconviction crime switch matrices were constructed. Offense categories employed consisted of criminal homicide, forcible rape, aggravated assault, robbery, and burglary. Race was the principal study variable; sophisticated statistical methods were not employed.

Unlike the Wolfgang et al study of juvenile police contacts and the Rand studies of crimes actually committed, the Careers in Crime adult arrest data suggested a trend toward specialization in offenses such as aggravated assault, robbery and burglary. Generally, trends toward increased offense seriousness were not noted. Racial differences in recidivism patterns were found. Later arrests of blacks tended to be more concentrated in aggravated assault, regardless of the nature of the preceding arrests, whereas whites tended to become more involved in burglary.

Using arrest records of 26,164 males and 2,741 females contained in the Oregon CCH file, the Spectrum Analysis study was the most definitive analysis of adult recidivism patterns based on official records. Methodologically sophisticated, it also was the first study to compare recidivism patterns by sex, including patterns by race within sex. The study was restricted to serious crimes. NCIC offense groupings were selected on the basis of crime switch pattern similarities, resulting in the following offense categories:

Violent/Person: Homicide, rape-kidnap, robbery, assault.

Property: Arson, burglary-auto theft-stolen property, larceny, forgery-fraud-embezzlement.

Sex: Non-violent sex, commercial sex.

As in the case of the Wolfgang et al study of juvenile offenders, the Spectrum Analysis study found that patterns of crime switch did not vary significantly with the number of offenses committed. Of all the factors considered in detail, the nature of the previous offense was

generally the most predictive of the nature of the next offense. Further, for each specific arrest offense it was found that the likelihood that an individual's next offense is the same as his last is significantly greater than chance. This suggested the existence of 'specialists' among both male and female adult offenders.

For the first time, recidivism patterns were compared by gender. Patterns were found to be significantly different. Regardless of the nature of the last offense, males had a significantly greater chance that the next arrest would be for a violent crime; females that it would be for a sex crime. With respect to racial differences, the Careers in Crime findings that black males have a greater chance of switching to violent crimes and white males to property crimes were confirmed. The Spectrum Analysis study found that this was also true for black vs white female recidivism patterns.

While initial insights have been obtained, it may be seen that relatively few statistical studies have been conducted to date concerning patterns of career criminal recidivism. Prior to this series of studies, none have been conducted based on data bases which focus on a cross-section of the population of inmates filling our nation's prisons.

EXECUTIVE SUMMARY

Introduction

Perhaps the most critical criminal justice problem existing today is that of unprecedented growth in prison populations and attendant significant deterioration in living conditions among the incarcerated. The need to resolve these problems has never been greater.

An improved understanding of career criminal recidivism patterns and of the characteristics of inmates who exhibit these patterns has policy and decision-making relevance to this issue in the following regards:

1) It provides an improved basis for judicial sentencing, for correctional release decisions, and for related legislation and criminal justice agency policy development.

2) It provides an improved basis for selection of inmate housing, as well as for selection of programs to provide increased protection, reduce behavioral problems and otherwise facilitate smooth institutional functioning.

Relatively few studies have been conducted to date relative to adult offender crime switch patterns. Those that have been conducted have concentrated on self-reports of offenses committed or on patterns of rearrest recidivism. This first large scale study of prison incarceration crime switch patterns is based on male state prison inmates who had entered a state prison two or more times as a new court commitment.

National surveys of prison inmates conducted in 1974 and 1979 by the Bureau of the Census for the Bureau of Justice Statistics constitute the data sources. These time periods were quite different. In the five year period preceding the 1974 Survey, prison populations were relatively stable. During the subsequent five year period, prison

populations increased approximately 50%. Associated with these steady, rapid increases from approximately 200,000 to approximately 300,000 inmates nationwide, were substantial changes in prison composition. Such changes were reflected in the distribution of incarceration offenses among male recidivists.

The period of rapid prison population increase, started in 1975, continued at about the same rate over the decade 1975-1985. Hence, the comparison between the 1970-1974 period of relative stability and the 1975-1979 period of rapid prison population growth is particularly relevant today.

The study addresses each of two related and complementary cohort types: prison release cohorts and admission cohorts of offenders who had previously served time in a state prison. For each cohort type, a series of research questions, summarized below, was defined. Patterns of recidivism were described in terms of offense transition matrices; likelihood ratio tests of significant difference as well as descriptive statistics were employed to address the research questions.

Relationship Between Time Since Admission and Incarceration Offense

Preparatory to the conduct of the release and admission cohort studies, an analysis was made of the relationship between time since admission and incarceration offense. Reasons were twofold:

1) Distributions of times since admission for different offenses provide much needed perspective relative to the study time periods.

2) It was recognized a priori that the longer one has been in prison, the more likely it is that he is serving time for a violent offense, merely by virtue of having been in prison so long. Assessment of the relationship betweeen time since admission and incarceration offense provided a basis for defining admission and release cohorts so as to insure that potential

confounding effects would be minimal.

A major difference between 1974 and 1979 was that in 1974, prison recidivists served lengthy sentences not just for violent, but for a variety of offenses; in 1979 they served lengthy sentences primarily for violent offenses. Thus, 38% of the male recidivists incarcerated more than five years at the time of the 1974 survey were serving time for non-violent offenses, compared to only 13% in 1979.

The 1979 survey indicated that recidivists with property offenses had generally been incarcerated considerably shorter times than in 1974. While property offenses as a class are not deemed as serious as violent offenses, a subsequent property conviction for an offender who has already served time in prison is a serious matter. Between 1974 and 1979, the percentage of recidivists incarcerated for property offenses actually showed a slight increase, from 33% to 35%. Drug possession and public order recidivists appeared to receive less severe sanctions as the extent of prison overcrowding increased. At all levels of time served to date, these offenses accounted for a considerably smaller percentage of offenses in 1979 than in 1974.

Fortunately, sample sizes in the 1974 and 1979 surveys were large enough to permit release and admission analyses to be based on recent cohorts. Utilization of such recent cohorts provided the means whereby policy relevant results were obtained with minimal confounding effects.

Release Cohorts

Release cohort analyses are of particular value in assessing the effectiveness of existing policies, or of policies that were in effect during a given period of time.

To study the effects of the extent as well as the nature of recidivism, it is desirable to follow-up an entire release cohort for a specified period of time. A follow-up of this type would include individuals who have not returned to prison. Such information is frequently available

within a given state, but is not provided by a prison inmate survey. Surveys of prison inmates are more appropriate for analyzing issues relative to patterns of recidivism of those who do return.

The release cohort analysis compares recidivism patterns of 1974 and 1979 prison inmates whose last prison release had been not more than five years prior to the time they were surveyed. Most had served less than 1 1/2 years since their most recent admission. Patterns of transition from the prior to the current incarceration offense were analyzed based on the following offense classifications: person, drug traffic, property, drug possession and public order. Subsequent analyses assessed patterns of recidivism for the specific prior offenses of robbery and burglary.

Principal questions addressed and corresponding findings were as follows:

1) Is there a significant relationship between the nature of the prior incarceration offense and the nature of the current incarceration offense?

Finding - In both the 1974 and 1979 surveys, a strong, statistically significant relationship between the nature of the prior incarceration offense and the nature of the current incarceration offense was found. Of the four factors studied, i.e., prior incarceration offense, survey year, age and race, the nature of the prior incarceration offense was found to be most predictive of the nature of the current offense.

2) Is there a significant difference in the offense transition matrix between the 1970-1974 release cohort of the 1974 Inmate Survey and the 1975-1979 release cohort of the 1979 Inmate Survey?

Finding - Despite differences between the 1974 and 1979 time periods with respect to prison overcrowding, times since admission and incarceration offenses, there were remarkable similarities in

patterns of crime switch. Differences in patterns of transition from prior to current prison incarceration offense were non-significant.

3) Are the offense transition matrices significantly different between races, i.e., does knowledge of both race and prior incarceration offense provide a significantly improved basis for predicting the current incarceration offense compared to knowledge of prior incarceration offense alone?

Finding - Knowledge of race in addition to that of prior offense constitutes a significantly improved basis for predicting current offense than does knowledge of prior offense alone. Significant differences with respect to race were found in both the 1974 and 1979 surveys. For all prior offenses, blacks had a greater tendency to switch to violent offenses; for most prior offenses, whites had a greater tendency to switch to property offenses.

4) Did patterns of recidivism of either the white or the black release cohorts change significantly between the 1974 Survey and the 1979 Survey?

Finding - It was found that patterns of recidivism of neither the white nor the black release cohorts changed significantly between the survey periods.

5) Do offense transition patterns of offenders under age 25 at time of last release differ significantly from those aged 25 and above?

Finding - Knowledge of age in addition to that of prior offense constitutes a significantly improved basis for predicting current offense compared to knowledge of prior offense alone. Transition patterns of offenders under age 25 were found to differ significantly from those aged 25 and above in both the 1974 and 1979 surveys. It should be noted, however, that age differences

with respect to offense transition patterns were not as great as race differences.

6) Did patterns of recidivism of either the under 25 or the 25 and above age groups change significantly between the 1974 and 1979 Surveys?

Finding - It was found that patterns of recidivism of the under 25 and the 25 and above age groups did not change significantly between the survey periods.

7) Do the offense transition matrices differ significantly by race, by age or by years of release when the prior incarceration was for a violent crime? For a property crime?

Finding - If the prior was a violent crime, considering each race separately provides significantly improved prediction of the current crime compared to predicting based on combined results for blacks and whites. Prediction of the current crime is not significantly improved, however, by separate consideration of years of release only, or of age grouping only.

8) When the prior incarceration is for a violent crime, does knowledge of the combined effects of age and race, age and years of release or race and years of release provide a significantly improved basis for predicting the nature of the current crime compared to predicting on the basis of individual effects only?

Finding - The only significant interaction effect is that of age and race. Hence, when the prior is a violent crime, transition probabilities for blacks and whites differ depending upon the age category of the individual.

9) When the prior incarceration is for a property crime, does knowledge of the combined effects of age and race, age and years of release or race and years of release provide a significantly

improved basis for predicting the nature of the current crime compared to predicting on the basis of individual effects only?

Finding - Results are the same as 8) above, i.e., the only significant interaction effect is that of age and race. When the prior is a property crime, transition probabilities for blacks and whites differ depending upon the age category of the individual.

Admission Cohorts

A study of admission cohorts provides improved insight relative to the types of offenders being added to the prison system during a given period of time. Such information is of particular value in prison facility, program and management planning. For these purposes it is desirable to place emphasis on recent admission cohorts. Accordingly, this study analyzes patterns of recidivism for offenders admitted during the last year.

In analyzing recidivism patterns of admission cohorts, it is desirable to examine two types of trends:

1) Trends over calendar time.

2) The progression of offenses over offender careers.

To accomplish these purposes, the admission cohort analyses for both the 1974 and 1979 surveys were based on male offenders with two or more incarceration priors who were admitted within the last year. Offenses were categorized as either violent or non-violent so that each of the following incarceration progressions was represented:

Second Prior	First Prior	Current Offense
Non-Violent	Non-Violent	Non-Violent Violent
	Violent	Non-Violent Violent
Violent	Non-Violent	Non-Violent Violent
	Violent	Non-Violent Violent

Principal questions addressed by the admission cohort analyses were as follows:

1) Is there a significant relationship between the nature of the first prior and the current incarceration offense? Between the second prior and the current incarceration offense?

Finding - It was found that a significant relationship exists between the nature of the first prior and the current incarceration offense. A significant relationship also exists between the nature of the second prior and the current incarceration offense. Results for the 1974 admission cohort and the 1979 admission cohort were quite similar.

2) How does the relationship between the more recent first prior and the current offense compare with the relationship between the second prior offense, which occurred at an earlier age, and the current incarceration offense?

Finding - For each race and in each survey year, it was found that the relationship between the first prior and the current

incarceration offense is essentially the same as the relationship between the second prior and the current incarceration offense.

3) Does consideration of race as well as the progression from second prior to first prior contribute significantly to the prediction of the current offense?

Finding - Knowledge of the progression from second prior to first prior combined with knowledge of the interaction effect of the first prior and race contributes significantly to current incarceration offense prediction. If the last two priors are non-violent, then it is most likely that the current incarceration offense is non-violent. White offenders whose last two priors are non-violent are more likely to have a current non-violent incarceration offense than are black offenders. If the last two priors are both violent, it is most likely that tne current incarceration offense is violent, and there is little relationship between race and the current incarceration offense. Between these two extremes are the cases in which the prior incarceration offenses differ. In this event, it does not matter whether the progression is non-violent - violent or violent - non-violent; in each case the likelihood that the current offense is violent (or non-violent) is about the same.

STUDY FINDINGS

Relationship Between Time Since Admission and Incarceration Offense

The first report in this series, Time Served: Does It Relate to Patterns of Criminal Recidivism?, contrasted the 1974 and 1979 time periods with respect to prison overcrowding and related issues. Briefly, it was indicated that at the time of the 1974 Survey, and in the five preceding years, prison populations were relatively stable -- approximately 200,000. In the subsequent period leading up to the 1979 Survey, however, prison populations increased rapidly to approximately 300,000. Part of the increase appeared due to increases in the high risk age group; part to increases in sanction severity. As population pressures mounted, the composition of the nation's prisons was influenced by a third factor: adjustments in prison release policy. This generally took the form of early release of individuals with less serious offenses, although certain individuals with more serious offenses were selected, on a case by case basis, for a relatively early release.

Under circumstances as indicated, it is instructive to contrast the 1974 and 1979 survey samples with respect to the current incarceration offense of a particularly serious class of incarcerated offender, namely male inmates who had previously been sentenced to and served time in a prison, jail or juvenile facility. Table 1 summarizes the distribution of the most serious current incarceration offense categories in relation to months served to date. Of the 6,055 male recidivists surveyed in 1974, 17.8% had served more than five years. By 1979, the corresponding figure based on 4,980 respondents was 12.5%.

The longer one has been in prison, the more likely it is that he is serving time for a violent offense. In both 1974 and 1979, for example, the proportion of offenders serving time for violent offenses increased consistently and dramatically with months served to date. Inclusion of large numbers of inmates who have served a long time on

TABLE 1 - DISTRIBUTION OF INCARCERATION OFFENSE CATEGORIES
FOR VARIOUS MONTHS SERVED AT TIME OF SURVEY

MALE RECIDIVISTS

MONTHS SERVED TO DATE	OFFENSE CATEGORY VIOLENT	DRUG TRAFFIC	PROPERTY	DRUG POSSESS	PUBLIC ORDER	VALID CASES	ROW %
0-6							
1974	36.2%	4.4%	44.9%	4.9%	9.5%	1348	22.3
1979	35.8	4.3	49.7	3.6	6.6	1096	22.0
7-12							
1974	42.9	4.8	40.2	5.0	7.0	952	15.7
1979	42.5	3.6	45.6	3.0	5.3	811	16.3
13-24							
1974	45.7	5.7	35.0	5.3	8.3	1139	18.8
1979	48.1	5.0	39.5	2.4	5.1	1062	21.3
25-36							
1974	51.5	4.9	28.0	4.2	11.5	721	11.9
1979	59.0	4.9	29.6	2.1	4.4	659	13.2
37-48							
1974	63.5	2.9	20.6	2.9	10.2	491	8.1
1979	67.8	4.5	23.6	1.6	2.5	441	8.9
49-60							
1974	59.4	2.5	24.0	3.7	10.5	325	5.4
1979	77.2	2.1	18.6	1.7	0.3	290	5.8
60+							
1974	62.1	2.2	20.5	3.9	11.3	1079	17.8
1979	86.5	1.3	9.5	1.4	1.3	621	12.5
TOTAL							
1974	48.9%	4.1%	32.9%	4.5%	9.6%	6055	100%
1979	54.2	3.9	35.1	2.5	4.4	4980	100%

their current offense can have a serious confounding effect on any study of patterns of crime switch.

Fortunately, for policy analysis purposes one is generally interested in recent cohorts. In studying admission cohorts, for example, one is primarily interested in recent admissions for purposes of detecting trend changes. Defining recent admissions as admissions during the last year both provides sufficient sample size, addresses policy concerns and minimizes the above referenced confounding effects. Defining release cohorts in terms of prison inmates who were previously released within the last five years has a similar effect. None of these individuals had been admitted more than five years ago; most were admitted within the last 1 1/2 years.

In 1974, only 62% of those who had served more than five years were serving time for a violent offense; 38% were serving time for a non-violent offense. Property offenders alone accounted for approximately 21% of those who had been incarcerated more than five years; public order offenders accounted for approximately 11%; 6% were incarcerated for drug traffic or possession offenses.

By 1979, fully 86% of those who had served more than five years were serving time for a violent offense; only 14% were serving time for a non-violent offense. Property offenders accounted for approximately 10% of those incarcerated more than five years; drug traffic, drug possession and public order combined accounted for only 4%.

At all levels of time served to date, drug possession and public order offenses accounted for a considerably smaller percentage of offenses in 1979 than in 1974. Hence, compared to offenders with other offenses, there was a greater tendency for these offenders to be released from and not returned to prison. In short, drug possession and public order offenders appeared to receive less severe sanctions as the extent of prison overcrowding increased.

In contrast to the other offense categories, property offenses accounted for a considerably greater proportion of the offenses among the new admissions and a considerably smaller proportion of the offenses among those for which inmates had been incarcerated 4-5 or more years. Among the offenses for recidivists who had served 12 months or less, property offenses increased approximately 5% between 1974 and 1979. By 1979 they constituted approximately 48% of these recent incarceration offenses. Hence, there was a simultaneous increase in the representation of property offenses among recent recidivist admissions and decrease in representation of property offenders among recidivists who had served a long time. These facts coupled with a tendency, as will be shown subsequently, for releasees to be returned for the same offense suggest that property offenders were being recycled through the prison system.

Table 2, which presents months served at the time of each survey in relation to incarceration offense category, both confirms various of the above observations and presents additional perspectives. Findings, by offense category, are as follows:

1) Violent Offenses - In 1974 49% of the recidivists were incarcerated for violent offenses; by 1979 the percentage had increased to 54%. This increased percentage appeared to be due more to decreased incarcerations and time served of drug possession and public order offenders than to increased incarcerations and time served of violent offenders. Nonetheless, in 1974 approximately 30% of the violent offenders had served one year or less at the time of the survey; in 1979, this percentage had decreased to 27%. These percentages were much less than the corresponding percentages for other offenses. At the same time, however, approximately 23% of those incarcerated for violent offenses had served more than 5 years at the time of the 1974 survey; by 1979 the corresponding percentage had decreased to approximately 20%, suggesting selective shortening of time served.

2) Drug Traffic Offenses - Distributions of months served for

TABLE 2 - MONTHS SERVED AT TIME OF SURVEY
IN RELATION TO INCARCERATION OFFENSE CATEGORY

MALE RECIDIVISTS

OFFENSE CATEGORY	MONTHS SERVED AT TIME OF SURVEY 0-6	7-12	13-24	25-36	37-48	49-60	60+	VALID CASES	ROW %
Violent									
1974	16.5%	13.8%	17,5%	12.5%	10.5%	6.5%	22.6%	2963	48.9
1979	14.5	12.8	18.9	14.4	11.1	8.3	19.9	2697	54.2
Drug Traffic									
1974	23.5	18.3	25.9	13.9	5.6	3.2	9.6	251	4.1
1979	24.1	14.9	27.2	16.4	10.3	3.1	4.1	195	3.9
Property									
1974	30.5	19.2	20.1	10.2	5.1	3.9	11.1	1990	32.9
1979	31.2	21.2	24.0	11.2	6.0	3.1	3.4	1746	35.1
Drug Poss.									
1974	24.3	17.6	22.1	11.0	5.1	4.4	15.4	272	4.5
1979	32.3	19.4	20.2	11.3	5.6	4.0	7.3	124	2.5
Public Order									
1974	22.1	11.6	16.4	14.3	8.6	5.9	21.1	579	9.6
1979	33.0	19.7	24.8	13.3	5.0	0.5	3.7	218	4.4

drug traffic offenses at the time of the 1974 and 1979 surveys were quite similar. The major difference was that in 1974, almost 10% of those incarcerated for drug traffic offenses had served more than 5 years at the time of the survey; by 1979 this had decreased to approximately 4%.

3) Property Offenses - Between 1974 and 1979, there was a general shift toward shorter times served. The percent of property offenders who had served one year or less at the time of the survey increased from approximately 50% to approximately 52%. At the same time, the percent who had served more than 5 years decreased from 11% to 3%. Between 1974 and 1979, the overall percentage of recidivists incarcerated for property offenses increased slightly, from 33% to 35%.

4) Drug Possession Offenses - Table 2 confirms the finding that in 1979, a smaller proportion of the incarcerated recidivists were serving time for drug possession and that those who were appeared to serve substantially less time. Between 1974 and 1979, the percentage who had served one year or less increased from 42% to 52%; the percentage who had served more than 5 years decreased from 15% to 7%.

5) Public Order Offenses - The same observations noted above for drug possession also applied to public order offenses. Changes between 1974 and 1979 were even more dramatic for public order offenses, however. The percentage who had served one year or less increased from 34% to 53%; the percentage who had served more than 5 years dereased from 21% to 4%; the percentage of offenders serving time for public order offenses decreased from almost 10% to approximately 4%.

Release Cohort Crime Switch Patterns

Introduction

Analysis of crime switch patterns of recent releasees constituted the major focus of the release cohort analysis. This section compares the 1974 and 1979 survey findings with respect to the probability of crime switch of male repeat offenders who had been released from a state prison within the preceding five years.

In reviewing the results which follow, it is important to remember that the study sample consists of state prison returnees incarcerated at a given time. The 1979 study group, for example, consists of individuals who were released from a state prison during the period 1975-1979, returned, and were still incarcerated at the time of the survey. Individuals who were released in this time period, returned for a subsequent offense, released again, and who were subsequently not in prison at the time of the survey were of necessity excluded, as were individuals who were returned subsequent to the conduct of the survey.

Comparison by Time of Survey and Nature of Prior Offense

Effects of four factors on resultant patterns of crime switch were considered: time of the survey, nature of the prior offense, race and age. Table 3 compares overall crime switch probabilities obtained from the 1974 and 1979 surveys, using the following major offense classifications: violent, drug traffic, property, drug possession and public order.

Crime switch probabilities in this and subsequent tables represent the likelihood that an individual with a given prior state prison incarceration offense will transition to a given current incarceration offense. Thus, as shown in Table 3, in 1974 the probability of a violent-violent transition was .615. In 1979, the probability of this same offense transition was almost identical, .619. The sum of the crime switch probabilities in each row equals 1.0.

TABLE 3 - COMPARISON OF CRIME SWITCH PROBABILITIES IN 1974 AND 1979 SURVEYS. MALE REPEAT OFFENDERS RELEASED WITHIN FIVE YEARS PRECEDING EACH SURVEY

1974 SURVEY

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	DRUG TRAFFIC	PROPERTY	DRUG POSSESS	PUBLIC ORDER	N	ROW %
Violent	.615	.024	.239	.043	.078	460	27.6
Drug Traffic	.286	.190	.310	.095	.119	42	2.5
Property	.322	.021	.573	.029	.055	931	55.9
Drug Possession	.316	.082	.276	.276	.051	98	5.9
Public Order	.356	.015	.415	.037	.178	135	8.1
Valid Cases, N	674	49	739	83	121	1666	
Column %	40.5	2.9	44.4	5.0	7.3		100.0
Unknown Offense	2		1	1		4	

1979 SURVEY

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	DRUG TRAFFIC	PROPERTY	DRUG POSSESS	PUBLIC ORDER	N	ROW %
Violent	.619	.013	.278	.022	.067	223	23.9
Drug Traffic	.281	.375	.313	.031	---	32	3.4
Property	.321	.011	.613	.025	.029	551	59.0
Drug Possession	.275	.118	.431	.098	.078	51	5.5
Public Order	.429	.052	.442	---	.078	77	8.2
Valid Cases, N	371	31	466	25	41	934	
Column %	39.7	3.3	49.9	2.7	4.4		100.0
Unknown Offense						0	

Comparing crime switch probabilities for the 1974 and 1979 surveys, one is struck by the remarkable similarity in the patterns of crime switch. Where differences appear to be great, as in the case of drug traffic - drug traffic (a probability of .190 in 1974 compared to .375 in 1979), they are based on small samples. Differences in overall crime switch patterns between the surveys were not statistically significant. This is indicated in Model Comparison 3-4, Appendix Table A2, by the nonsignificant incremental contribution made by the joint interactions among current crime, prior crime and year (CPY). These results also indicate that knowledge of prior crime contributes significantly to the prediction of current crime, as shown in Model Comparison 1-2 of the same table.

To understand the influence of the nature of the prior incarceration offense on the nature of the current incarceration offense, let us first examine the case in which current incarceration is for a violent crime. In 1974, 40.5% of the male returnees released within the preceding five years were currently incarcerated for a violent offense. If the nature of the prior offense had no influence on the nature of the current offense, then for all priors, the probability that the current incarceration was for a violent crime would have been .405. This was decidedly not true, however. Those whose prior incarceration had been for a violent offense had a decidedly above average chance, .615, that their current incarceration offense would be for a violent offense. Those whose prior incarceration was for drug traffic, property, drug possession or public order offenses had a below average chance that their current incarceration would be for a violent offense.

In general, it was found in both the 1974 and 1979 surveys that there was a strong, statistically significant relationship between the nature of the prior offense and the nature of the subsequent offense. This appeared to be due to a tendency for the nature of the prior offense to be the same as the nature of the current offense. Thus, the probability that the current offense is violent is considerably above average when the prior offense is violent; the probability that the

current offense is drug traffic is considerably above average when the prior offense is drug traffic, and so forth.

Comparison by Race

Tables 4 and 5 present a comparison of crime switch probabilities, by race, for the 1974 and 1979 surveys, respectively. Results are presented for the race categories 'white' and 'black'. Other race categories are not included due to small sample size. In these tables as well as those which follow, the separate categories of drug traffic and drug possession are combined into a single drug category to avoid unacceptably small sample sizes associated with subdividing the data by race and/or age.

A principal question addressed was "Does joint consideration of race and the nature of the prior offense provide a statistically stronger relationship with current offense than does consideration of prior offense only?". For both the 1974 and 1979 surveys, it was found that it does. It was further found that for each race, the tendency for the nature of the prior offense to be the same as the nature of the current offense held true. Racial difference in this regard were noted. Results of the loglinear analysis examining the effects of year of release, race, and prior crime on current crime are shown in Table A3 of the Appendix.

In the 1974 survey, the probability of a violent-violent transition was approximately .66 for the black returnees compared to approximately .57 for the white returnees. In the 1979 survey, this gap had narrowed considerably. For black returnees, the probability of a violent-violent transition was approximately .64 compared to .61 for the white returnees.

It was found that white offenders had a greater tendency to repeat property crimes. In the 1974 survey, the probability of property - property transition was .64 for the whites, compared to .50 for the blacks. In the 1979 survey, these probabilities were .64 vs. .59,

TABLE 4 - COMPARISON OF CRIME SWITCH PROBABILITIES BY RACE - 1974 SURVEY
MALE REPEAT OFFENDERS RELEASED WITHIN PRECEDING FIVE YEARS

WHITE MALES

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.566	.280	.058	.095	189	22.4
Property	.239	.640	.068	.054	503	59.5
Drug	.221	.325	.403	.052	77	9.1
Public Order	.253	.507	.040	.200	75	8.9
Valid Cases, N	263	438	79	64	844	
Column %	31.1	51.9	9.4	7.6		100.0
Unknown Offense			1		1	

BLACK MALES

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.658	.202	.078	.062	257	32.8
Property	.424	.495	.029	.051	410	52.3
Drug	.410	.246	.262	.082	61	7.8
Public Order	.482	.304	.054	.161	56	7.1
Valid Cases, N	395	287	51	51	784	
Column %	50.4	36.6	6.5	6.5		100.0
Unknown Offense	2		1		3	

TABLE 5 - COMPARISON OF CRIME SWITCH PROBABILITIES BY RACE - 1979 SURVEY.
MALE REPEAT OFFENDERS RELEASED WITHIN PRECEDING FIVE YEARS

WHITE MALES

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.606	.266	.064	.064	94	18.6
Property	.266	.641	.054	.038	312	61.7
Drug	.196	.431	.333	.039	51	10.1
Public Order	.347	.531	.041	.082	49	9.7
Valid Cases, N	167	273	42	24	506	
Column %	33.0	54.0	8.3	4.7		100.0

BLACK MALES

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.639	.279	.016	.066	122	29.8
Property	.389	.585	.013	.013	229	56.0
Drug	.419	.290	.226	.065	31	7.6
Public Order	.593	.296	.074	.037	27	6.6
Valid Cases, N	196	185	14	14	409	
Column %	47.9	45.2	3.4	3.4		100.0

respectively.

For all prior offenses in both 1974 and 1979, blacks had a greater tendency to switch to violent offenses. In contrast, for almost all prior offenses in both 1974 and 1979, whites had a greater tendency to switch to property offenses.

Comparison by Age

Tables 6 and 7 present crime switch comparisons by age, for the 1974 and 1979 surveys, respectively. Age is defined as age at which the offender was 'back on the street', i.e., age at time of release from the prior incarceration. Table A4 in the Appendix shows loglinear modelling results concerning the effects of Years of Release, Age, and Prior Crime on Current Crime.

From these results we see again that the transition matrix of prior to current crime is the same for the 1974 and 1979 release cohorts. Having different prior to current crime transition matrices for each age category does, however, improve the prediction of current crime. In 1974, the principal difference by age category was that those under 25 at time of last release were more likely to be returned for a violent offense than were those 25 and above. This was true in the case of all prior offense categories. Overall, approximately 44% of those under 25 had been returned for a violent offense compared to 35% of those 25 and above.

In general, the 1974 survey indicated that those 25 and above had a slightly greater tendency to be returned for the same offense category. The largest difference was in the case of property - property transitions. The probability of a property - property transition was approximately .53 for those under 25; approximately .65 for those 25 and above. Crime switch patterns of those 25 and above were very much the same in the 1979 survey as they had been in the 1974 survey.

TABLE 6 - COMPARISON OF CRIME SWITCH PROBABILITIES BY AGE CATEGORY - 1974 SURVEY
MALE REPEAT OFFENDERS RELEASED WITHIN PRECEDING FIVE YEARS

AGE - UNDER 25

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.631	.270	.049	.049	244	24.8
Property	.370	.526	.042	.062	568	57.8
Drug	.395	.302	.267	.035	86	8.7
Public Order	.405	.452	.060	.083	84	8.6
Valid Cases, N	432	429	64	57	982	
Column %	44.0	43.7	6.5	5.8		100.0
Unknown Offense	2				2	

AGE - 25 AND ABOVE

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.597	.204	.088	.111	216	31.6
Property	.246	.646	.064	.044	362	53.0
Drug	.167	.259	.444	.130	54	7.9
Public Order	.275	.353	.039	.333	51	7.5
Valid Cases, N	241	310	68	64	683	
Column %	35.3	45.4	10.0	9.4		100.0
Unknown		1	1		2	

TABLE 7 - COMPARISON OF CRIME SWITCH PROBABILITIES BY AGE CATEGORY - 1979 SURVEY
MALE REPEAT OFFENDERS RELEASED WITHIN PRECEDING FIVE YEARS

AGE - UNDER 25

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.602	.336	.009	.053	113	19.4
Property	.342	.604	.024	.029	374	64.2
Drug	.286	.429	.190	.095	42	7.2
Public Order	.444	.481	.018	.056	54	9.3
Valid Cases, N	232	308	19	24	583	
Column %	39.8	52.8	3.3	4.1		100.0

AGE - 25 AND OVER

PRIOR INCARCERATION	CURRENT INCARCERATION VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	N	ROW %
Violent	.636	.218	.064	.082	110	31.3
Property	.277	.633	.062	.028	177	50.4
Drug	.268	.341	.390	0	41	11.7
Public Order	.391	.348	.130	.130	23	6.6
Valid Cases, N	139	158	37	17	351	
Column %	39.6	45.0	10.5	4.8		100.0

Switching from Violent and Property Offenses

The most prevalent of the prior offenses were violent and property crimes. In both the 1974 and 1979 surveys, these accounted for approximately 83% of all priors. Descriptive results will be presented first, followed by statistical test results based on loglinear analysis.

Table 8 presents probabilities of switching from violent and property offenses for a variety of offender categories. Whereas in the preceding tables the effects of age and race were shown separately, in this table results are presented for each combination of age category, race and year of survey.

Violent Offenses - When the prior incarceration is for a violent offense, there is greater than a 50% chance that the current incarceration is for a violent offense. The violent-violent transition probability is least when the individual is white and under 25 years in age. In 1974 this probability was approximately .52; in 1979, .55. The violent-violent transition probability is greatest when the individual is black and under 25 years in age. In 1974 this probability was approximately .69; in 1979, .64. It should be noted that between the 1974 and 1979 surveys, the gap between the least and greatest violent-violent transition probabilities narrowed from .17 to .09. When the age is 25 and above, there is very little difference between the races with respect to crime switch probabilities.

Table A5 in the Appendix summarizes the results for the loglinear analysis of the effects of year of release, age, and race on current crime for those whose prior was a violent crime. The significant interactive effect of age and race on the current crime confirms that transition probabilities for blacks and whites differ depending upon the age category of the individual. The year of release, either by itself or in conjunction with the other variables, was not a significant factor.

TABLE 8 - CRIME SWITCH PROBABILITIES IN RELATION TO OFFENDER AND PRIOR OFFENSE CATEGORIES.

MALE REPEAT OFFENDERS RELEASED WITHIN PRECEDING FIVE YEARS

A. CRIME SWITCH PROBABILITY WHEN PRIOR OFFENSE IS VIOLENT

OFFENDER CATEGORY	CURRENT OFFENSE VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	VALID CASES
1974 Survey					
Under 25 1)	.631	.270	.049	.049	244
White	.517	.345	.069	.069	87
Black	.689	.232	.039	.040	151
25 and Above 1)	.597	.204	.088	.111	216
White	.608	.225	.049	.118	102
Black	.613	.160	.132	.094	106
1979 Survey					
Under 25 1)	.602	.336	.009	.053	113
White	.548	.381	.024	.048	42
Black	.642	.313	0	.045	67
25 and Above 1)	.636	.218	.063	.082	110
White	.654	.173	.096	.077	52
Black	.636	.236	.036	.091	55

B. CRIME SWITCH PROBABILITY WHEN PRIOR OFFENSE IS PROPERTY

OFFENDER CATEGORY	CURRENT OFFENSE VIOLENT	PROPERTY	DRUG	PUBLIC ORDER	VALID CASES
1974 Survey					
Under 25 1)	.370	.526	.042	.062	568
White	.270	.606	.066	.058	274
Black	.462	.455	.021	.063	286
25 and Above 1)	.246	.646	.064	.044	362
White	.197	.684	.070	.048	228
Black	.339	.589	.048	.024	124
1979 Survey					
Under 25 1)	.342	.604	.024	.029	374
White	.271	.655	.040	.034	203
Black	.421	.555	.006	.018	164
25 and Above 1)	.277	.633	.062	.028	177
White	.257	.615	.083	.046	109
Black	.308	.662	.031	.000	65

1) Includes White, Black and Other.

Property Offenses - Just as when the prior was a violent offense, there was a marked tendency for the current offense to be violent, so too, when the prior was a property offense, there was a marked tendency for the current offense to be a property offense. As shown in Table 10, the tendency to recidivate to a property offense was generally greater for whites than for blacks, and greater for those 25 and older than for those less than 25.

Table A6 in the Appendix summarizes the quantitative results of the loglinear analysis of the effects of year of release, age and race on current crime for those whose prior was a property crime. Results indicate that the effects of race on current crime depend upon the age of the individual at time of prison release from the prior. The largest individual effect is that of age, but the effects of age depend upon the race of the individual. This is due to the increased probability of black releasees whose prior was a property crime to commit a violent subsequent crime as compared to white releasees.

Switching From Robbery and Burglary Offenses

The most common of the incarceration offenses of a violent nature was robbery; the most common of the property incarceration offenses was burglary. Table 9 extends the analysis of switching from prior violent and property incarceration offenses to more specific consideration of switching from prior robbery and burglary incarceration offenses. Resultant probabilities of switching to current violent, property, drug and public order offenses, as well as to the specific current offenses of robbery, burglary and larceny are presented for various combinations of four study prarameters: nature of the prior incarceration offense, survey year, age at release from prior incarceration and race.

Due to the prevalence of small sample sizes, formal statistical tests such as loglinear analyses were not conducted and caution should be exercised in interpreting results presented in Table 9. It should be noted, however, that the crime switch probabilities for robbery were

TABLE 9 - CRIME SWITCH PROBABILITIES FOR ROBBERY AND BURGLARY

MALE REPEAT OFFENDERS RELEASED WITHIN PRECEDING FIVE YEARS

PRIOR OFFENSE	CURRENT OFFENSE CATEGORY VIOLENT	PROP.	DRUG	PUBLIC ORDER	CURRENT SPECIFIC OFFENSE ROBBERY	BURG.	LARCENY	VALID CASES
1974 SURVEY								
ROBBERY								
Under 25 1)	.636	.265	.053	.046	.530	.172	.046	151
White	.386	.409	.091	.114	.295	.273	.114	44
Black	.731	.212	.038	.019	.635	.135	.019	104
25 and Above 1)	.606	.212	.086	.096	.423	.077	.087	104
White	.588	.176	.098	.137	.373	.098	.059	51
Black	.660	.200	.080	.060	.500	.040	.120	50
BURGLARY								
Under 25 1)	.342	.551	.040	.066	.187	.402	.057	316
White	.256	.638	.062	.044	.137	.469	.063	160
Black	.424	.470	.020	.086	.238	.344	.053	151
25 and Above 1)	.255	.655	.055	.035	.145	.510	.070	200
White	.214	.664	.076	.046	.107	.519	.053	131
Black	.344	.656	0	0	.234	.500	.109	64
1979 SURVEY								
ROBBERY								
Under 25 1)	.609	.333	0	.058	.449	.217	.072	69
White	.560	.360	0	.080	.520	.200	.080	25
Black	.636	.318	0	.045	.409	.227	.068	44
25 and Above 1)	.629	.194	.096	.081	.355	.129	.048	62
White	.607	.179	.143	.071	.357	.143	0	28
Black	.667	.182	.061	.091	.364	.121	.061	33
BURGLARY								
Under 25 1)	.335	.602	.034	.029	.204	.500	.044	206
White	.261	.631	.063	.045	.117	.541	.036	111
Black	.413	.576	0	.011	.304	.467	.054	92
25 and Above 1)	.229	.687	.060	.024	.084	.494	.096	83
White	.226	.642	.095	.038	.094	.528	.057	53
Black	.222	.778	0	0	.074	.481	.148	27

1) Includes White, Black and Other

substantially different from those for burglary. Further, results indicated a tendency for incarceration offenses to remain the same. Offenders whose prior prison incarceration was robbery tended to be returned not just for a violent offense but for robbery in particular; offenders incarcerated for burglary tended to be returned for burglary. In every case, the robbery-robbery transition was more common than robbery-burglary or robbery-larceny. Similarly, in every case, burglary-burglary was more common than burglary-robbery or burglary-larceny.

Admission Cohort Crime Switch Patterns

The admission cohort crime switch analysis was based on male offenders with two or more state prison incarceration priors whose last admission was not more than one year prior to the survey. For such offenders, offenses were categorized as either violent or non-violent and patterns of incarceration offense progressions were determined for the following offense transitions: First Prior - Current; Second Prior - Current; Second Prior - First Prior - Current Offense.

The first question addressed was whether or not a significant relationship exists between the nature of the first prior and the nature of the current incarceration offense. Individual and combined effects of race and survey year on this relationship were analyzed. The relationship between the nature of the second prior and the nature of the current incarceration offense was then examined in like manner.

Table 10 presents the comparison, by race, of the first prior - current offense and the second prior - current offense transition probabilities. It was found, as shown in Appendix Tables A8 and A9, that a significant relationship does exist between the nature of the first prior and the current incarceration offense. Similarly, a significant relationship exists between the nature of the second prior and the current incarceration offense. Differences in relationships between prior and current offenses were noted by race. Results for the 1974 admission cohort were quite similar to that of the 1979 cohort.

TABLE 10- COMPARISON OF FIRST PRIOR - CURRENT OFFENSE AND SECOND PRIOR - CURRENT OFFENSE TRANSITION PROBABILITIES BY RACE

ADMISSION COHORT - 1974 SURVEY

RACE	PRIOR OFFENSE	CURRENT OFFENSE NON-VIOLENT	VIOLENT	NO. CASES
White	Non-Violent			
	First Prior	.73	.27	662
	Second Prior	.73	.27	693
	Violent			
	First Prior	.53	.47	155
	Second Prior	.51	.49	124
Black	Non-Violent			
	First Prior	.56	.44	482
	Second Prior	.53	.47	509
	Violent			
	First Prior	.40	.60	163
	Second Prior	.49	.51	136

ADMISSION COHORT - 1979 SURVEY

RACE	PRIOR OFFENSE	CURRENT OFFENSE NON-VIOLENT	VIOLENT	NO. CASES
White	Non-Violent			
	First Prior	.71	.29	539
	Second Prior	.70	.30	563
	Violent			
	First Prior	.49	.51	104
	Second Prior	.48	.52	80
Black	Non-Violent			
	First Prior	.61	.39	344
	Second Prior	.60	.40	381
	Violent			
	First Prior	.44	.56	112
	Second Prior	.41	.59	75

A second question concerned how the relationship between the more recent first prior and the current offense compares with the relationship between the second prior, which occurred at an earlier age, and the current incarceration offense. As shown in Table 10, the relationship between the first prior and the current offense was virtually the same as the relationship between the second prior and the current offense. This was true for each race and each survey year.

Finally, consideration was given to the nature of the progression from second to first prior and its relationship to the current incarceration offense. Whereas Table 10 is based on all offenders with one or more prior incarceration offenses, Table 11 is based on all offenders with two ore more priors. It presents a summary of second prior - first prior - current incarceration offense transition probabilities by race, for both the 1974 and 1979 admission cohorts. For each race within each admission cohort, non-violent - non-violent (NV - NV) was by far the most common progression of prior offenses, exceeding the total of all other progressions combined. In 1974, NV - NV accounted for 67% of all cases; in 1979, it accounted for 71%. In contrast, violent - violent was the most infrequent progression. In 1974 it accounted for 6.8% of the cases; in 1979, 5.0%. The relative infrequency of V - V priors among current admissions is generally accounted for by the fact that if an individual serves time for a violent offense, is released and then returned to prison for a new violent offense, it will generally be a long time before he is once more released and given the opportunity to return again.

Examination of table 11 indicated the progression of prior offenses had a strong relationship to the current incarceration offense. If the last two priors were non-violent, then it was most likely that the current incarceration offense was non-violent. If the last two priors were violent, it was most likely that the current incarceration offense was violent. Between these two extremes were the cases in which the prior incarceration offenses differed. The interesting finding here was that the progression of the last two priors from NV - V had

TABLE 11- SECOND PRIOR - FIRST PRIOR - CURRENT OFFENSE
TRANSITION PROBABILITIES BY RACE

ADMISSION COHORT - 1974 SURVEY

RACE	LAST TWO PRIORS	CURRENT OFFENSE NON-VIOLENT	VIOLENT	TOTAL
White	NV - NV	.75	.25	586
	NV - V	.57	.43	107
	V - NV	.55	.45	76
	V - V	.44	.56	48
Black	NV - NV	.56	.44	398
	NV - V	.41	.59	111
	V - NV	.56	.44	84
	V - V	.38	.62	52

ADMISSION COHORT - 1979 SURVEY

RACE	LAST TWO PRIORS	CURRENT OFFENSE NON-VIOLENT	VIOLENT	TOTAL
White	NV - NV	.72	.28	486
	NV - V	.56	.44	77
	V - NV	.57	.43	53
	V - V	.30	.70	27
Black	NV - NV	.63	.37	297
	NV - V	.46	.54	84
	V - NV	.45	.55	47
	V - V	.36	.64	28

NOTATION

NV: NON-VIOLENT
V: VIOLENT

essentially the same relationship to the current incarceration offense as did the V - NV progression.

Race was another variable of interest. White offenders whose last two priors were non-violent were more likely to have a current non-violent incarceration offense than were black offenders. If the last two priors were violent, however, there was little relationship between race and the current incarceration offense. Statistical tests were conducted and it was shown, for both the 1974 and 1979 surveys (reference Tables A8 and A9), that knowledge of the interaction effect of the first and second priors combined with knowledge of the interaction effect of the first prior and race contributes significantly to prediction of the current incarceration offense.

METHODOLOGY

Introduction

The analysis of the crime switch matrices was based upon the following rationale. The number within each cell of the matrix represents the number of individuals who exhibited a given set of attributes. Typically, these attributes consisted of a combination of the following variables: release cohort, age, race, prior crime and current crime. Thus, the number within a given cell might represent the number of incarcerated recidivists in 1974 who had been previously released within the five year period 1970-1974, were 25 years of age or older, white, and who had transitioned from a prior incarceration for a property crime to a current incarceration for a violent crime.

Such transition matrices were analyzed using loglinear modelling. In loglinear modelling, each cell is viewed as the potential effect of each variable in isolation as well as variables in combination. While this is similar to the interpretational framework of the analysis of variance, in loglinear analysis the observations are treated only as frequency data and no assumption need be made about the conditional normality of the dependent variables. The statistical analysis underlying loglinear analysis is fully described in Chapter 12 of Lunneborg and Abbott (1983) as well as other references such as Bishop, Feinberg and Holland (1975).

Interpretation of the results of a loglinear analysis proceeds by comparing the degree to which models incorporating various effects fit the frequencies observed in the transition matrix. In the analysis of crime switch matrices, the focus is on examining possible relationships between the variables and the current crime. The specific approach taken was as follows. First, the question was asked, "Does taking into account the nature of the prior

incarceration offense significantly improve the prediction of the current incarceration offense?" This was measured by testing to see if a model based on taking into account the relationship between the prior and the current offense adds significantly to the explanation of the cell frequencies as compared to a model incorporating only information about the marginal frequencies.

If the answer to the above question is affirmative, then the analysis proceeds to address whether or not still further statistically significant improvements in the prediction of current offenses would be obtained by taking into account the joint effects of prior crime and an additional variable, such as race. Stated alternatively, the analysis for race asks the question whether having different prior-current offense transition matrices for black and white inmates improves significantly the accuracy of the model as compared to a single prior-current offense transition matrix based on both black and white inmates. The significance of the release cohort and age variables was tested in an analogous manner. Where sample sizes were sufficiently large, the analysis was extended to include the joint effects of prior crime and two additional variables. An analysis approach similar to that described above for release cohorts, was conducted for admission cohorts.

TABLE A1 - RELEASE COHORT MODEL NOTATION

SYMBOL	MEANING
A	Age
C	Current Incarceration Offense
P	Prior Incarceration Offense
R	Race
Y	Years of Release (1974 Survey: 1970-1974; 1979 Survey: 1975-1979)
CA	Effect of Age on Current Offense
CP	Effect of Prior on Current Offense
CR	Effect of Race on Current Offense
CY	Effect of Release Years on Current Offense
PR	Joint Interaction between Race and Prior
PY	Joint Interaction between Prior Offense and Release Years
RY	Joint Interaction between Race and Release Years
APY	Joint Interaction among Age, Prior and Release Years
ARY	Joint Interaction among Age, Race and Release Years
CAR	Joint Effects of Age and Race on Current Offense
CAY	Joint Effects of Age and Release Years on Current Offense
CPA	Joint Effects of Age and Prior on Current Offense
CPR	Joint Effects of Prior and Race on Current Offense
CPY	Joint Effects of Prior and Release Years on Current Offense
CRY	Joint Effects of Race and Release Years on Current Offense
PRY	Joint Interaction among Prior, Race and Release Years
CARY	Joint Effects of Age, Race and Release Years on Current Offense
CPAR	Joint Effects of Age, Prior and Race on Current Offense
CPAY	Joine Effects of Age, Prior and Release Years on Current Offense
CPRY	Joint Effects of Prior, Race and Release Years on Current Offense

TABLE A2 - EFFECTS OF YEARS OF RELEASE (Y) AND PRIOR CRIME (P) ON CURRENT CRIME (C)

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	None	40	455.07
2	CP	24	48.87
3	CY,CP,PY	16	24.11
4	CY,CP,PY,CPY	0	0.00

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	406.20	16	<.01	CP
3-4	24.11	16	Not Signif.	CPY

Interpretation of Model Comparison 1-2: Knowledge of prior crime contributes significantly to prediction of current crime.

Interpretation of Model Comparison 3-4: Offense transition matrix for 1970-1974 is not significantly different from offense transition matrix for 1975-1979.

TABLE A3 - EFFECTS OF YEARS OF RELEASE (Y), RACE (R), AND PRIOR CRIME (P) ON CURRENT CRIME (C)

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	CP,CR,CY	40	59.19
2	CP,CR,CY,CPR	28	24.05
3	CP,CR,CY,PY,PR,RY, CPY,CRY,CPR,PRY	9	6.45
4	Model 3 Effects, CPRY	0	0.00

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	35.14	12	<.01	CPR
3-4	6.45	9	Not Signif.	CPRY

Interpretation of Model Comparison 1-2: Knowledge that includes the interaction of prior crime and race constitutes a significantly better basis for predicting current crime than knowledge of prior crime, race and year alone. There are significant differences with respect to race within the prior-current crime transition matrices.

Interpretation of Model Comparison 3-4: For a given race, there is no significant difference between the 1970-1974 and the 1975-1979 releasees in the ability to predict current from prior crime. That is, the prior-current crime transition matrix for whites based on the 1970-1974 releasees was not significantly different from the prior-current crime transition matrix for whites based on the 1975-1979 transition matrix. The same statement is true with respect to black releasees.

TABLE A4 - EFFECTS OF YEAR OF RELEASE (Y), AGE (A), AND PRIOR CRIME (P) ON CURRENT CRIME (C)

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	CP,CA,CY	40	100.99
2	CP,CA,CY,CPA	28	40.37
3	CP,CA,CY,CPA, CPY,CAY,APY	9	12.41
4	Model 3 Effects, CPAY	0	0.00

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	60.62	12	<.01	CPA
3-4	12.41	9	Not Signif.	CPAY

Interpretation of Model Comparison 1-2: Knowledge that includes the interaction of prior crime and age constitutes a significantly better basis for predicting current crime than knowledge of prior crime, age and year alone. There are significant differences with respect to age within the prior-current crime transition matrices.

Interpretation of Model Comparison 3-4: For a given age category, there is no significant difference between the 1970-1974 and the 1975-1979 releasees in the ability to predict current from prior crime. That is, the prior-current crime transition matrix for the 1970-1974 releasees under age 25 was not significantly different from the prior-current crime transition matrix for the 1975-1979 releasees under age 25. The same statement is true with respect to offenders aged 25 and above at time of last release.

TABLE A5 - EFFECTS OF YEARS OF RELEASE (Y), AGE (A) AND RACE (R) ON CURRENT CRIME (C) FOR THOSE WHOSE PRIOR WAS A VIOLENT CRIME

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	None	25	51.50
2	CR	22	33.75
3	CY	22	47.57
4	CA	22	47.56
5	CR,CY,CA	16	25.89
6	CR,CY,CA,CAY	12	19.93
7	CR,CY,CA,CRY	12	22.69
8	CR,CY,CA,CAR	12	11.38
9	CR,CY,CA,CAR,CAY,CRY,ARY	3	0.44
10	Model 9 Effects, CARY	0	0.00

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	17.75	3	<.01	CR
1-3	3.93	3	Not Signif.	CY
1-4	3.94	3	Not Signif.	CA
5-6	5.96	4	Not Signif.	CAY
5-7	3.20	4	Not Signif.	CRY
5-8	14.51	4	<.01	CAR
9-10	0.44	3	Not Signif.	CARY

Interpretation of Model Comparison 1-2: If the prior was a violent crime, considering each race separately provides significantly improved prediction of the current crime compared to predicting based on the combined results for blacks and whites.

Interpretation of Model Comparison 1-3, 1-4: If the prior was a violent crime, prediction of the current crime is not significantly improved by separate consideration of years of release only, or of age grouping only.

Interpretation of Model Comparisons 5-6, 5-7, 5-8. If the prior was a violent crime, knowledge of the interaction effects of age and race provides a significantly improved basis for predicting the nature of the current crime compared to predicting on the basis of their individual effects. Corresponding statements cannot be made concerning the interaction effects of age and years of release or of race and years of release.

Interpretation of Model Comparison 9-10: If the prior was a violent crime, taking into account not only age and race but also survey year does not significantly improve current crime prediction compared to taking into account age and race alone.

TABLE A6 - EFFECTS OF YEARS OF RELEASE (Y), AGE (A) AND RACE (R) ON CURRENT CRIME (C) FOR THOSE WHOSE PRIOR WAS A PROPERTY CRIME

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	None	25	123.69
2	CR	22	103.31
3	CY	22	112.92
4	CA	22	72.79
5	CR,CY,CA	16	41.64
6	CR,CY,CA,CAY	12	36.38
7	CR,CY,CA,CRY	12	30.67
8	CR,CY,CA,CAR	12	19.53
9	CR,CY,CA,CAR,CAY,CRY,YAR	3	2.08
10	Model 9 Effects, CARY	0	0.00

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	20.38	3	<.01	CR
1-3	10.77	3	Not Signif.	CY
1-4	50.90	3	<.01	CA
5-6	4.26	4	Not Signif.	CAY
5-7	10.97	4	Not Signif.	CRY
5-8	24.11	4	<.01	CAR
9-10	2.08	3	Not Signif.	CARY

Interpretation of Model Comparison 1-2: If the prior was a property crime, considering each race separately provides significantly improved prediction of the current crime compared to predicting based on the combined results for blacks and whites.

Interpretation of Model Comparison 1-3: If the prior was a property crime, prediction of the current crime is not significantly improved by separate consideration of years of release only, or of age grouping only.

Interpretation of Model Comparison 1-4: If the prior was a property crime, separate consideration by age grouping provides significantly improved prediction of the current crime compared to predicting based on the age groups combined.

Interpretation of Model Comparisons 5-6, 5-7, 5-8. If the prior was a property crime, knowledge of the interaction effects of age and race provides a significantly improved basis for predicting the nature of the current crime compared to predicting on the basis of their individual effects. Corresponding statements cannot be made concerning the combined effects of age and years of release or of race and years of release.

Interpretation of Model Comparison 9-10: If the prior was a property crime, taking into account not only age and race but also their interaction with survey year does not significantly improve current crime prediction compared to taking into account age and race alone.

TABLE A7 - ADMISSION COHORT MODEL

SYMBOL	MEANING
C	Current Incarceration Offense
F	First Prior Incarceration Offense
R	Race
S	Second Prior Incarceration Offense
CF	Effect of First Prior on Current Offense
CR	Effect of Race on Current Offense
CS	Effect of Second Prior on Current Offense
CFR	Joint Effects of First Prior and Race on Current Offense
CFS	Joint Effects of First and Second Priors on Current Offense

Note: In the Admission Cohort Analysis, offenses are classified as either Violent (V) or Non-Violent (NV).

TABLE A8 - EFFECTS OF FIRST AND SECOND PRIORS AND RACE ON CURRENT CRIME
MALE OFFENDERS ADMITTED WITHIN LAST YEAR - 1974 SURVEY

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	None	11	159.81
2	CF	10	119.94
3	CS	10	142.11
4	CF,CS,CR	8	56.41
5	CFS,CFR	4	13.19

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	39.87	1	<.01	CF
1-3	17.70	1	<.01	CS
4-5	43.22	4	<.01	CFS,CFR

Note: Offenses classified as either Violent or Non-Violent.

Interpretation of Model Comparison 1-2: Knowledge of first prior incarceration offense adds significantly to prediction of current offense.

Interpretation of Model Comparison 1-3: Knowledge of second prior incarceration offense adds significantly to prediction of current offense.

Interpretation of Model Comparison 4-5: Knowledge of the interaction effect of the first and second priors combined with knowledge of the interaction effect of the first prior and race contributes significantly to prediction of the current offense.

TABLE A9 - EFFECTS OF FIRST AND SECOND PRIORS AND RACE ON CURRENT CRIME
MALE OFFENDERS ADMITTED WITHIN LAST YEAR - 1979 SURVEY

MODEL	INTERACTION EFFECTS INCLUDED	DEGREES OF FREEDOM	LIKELIHOOD RATIO, G^2
1	None	11	97.14
2	CF	10	67.09
3	CS	10	72.49
4	CF,CS,CR	8	30.02
5	CFS,CFR	4	3.06

MODEL COMPARISON	CHANGE IN LIKELIHOOD RATIO	DEGREES OF FREEDOM	PROBABILITY	EFFECT TESTED
1-2	30.05	1	<.01	CF
1-3	24.65	1	<.01	CS
4-5	26.96	4	<.01	CFS,CFR

Note: Offenses classified as either Violent or Non-Violent.

Interpretation of Model Comparison 1-2: Knowledge of first prior incarceration offense adds significantly to prediction of current offense.

Interpretation of Model Comparison 1-3: Knowledge of second prior incarceration offense adds significantly to prediction of current offense.

Interpretation of Model Comparison 4-5: Knowledge of the interaction effect of the first and second priors combined with knowledge of the interaction effect of the first prior and race contributes significantly to prediction of the current offense.

REFERENCES

Bishop, Y. Fienberg, S.E. and Holland, P.W. (1975), Discrete Multivariate Analysis: Theory and Practice. Cambridge, Mass.: MIT press.

Booth, Ernest. (1929) Stealing Through Life. New York: Knopf.

Chaiken, J. and M. Chaiken. 1983. Varieties of Criminal Behavior. The Rand Corporation.

Clinard, M. and R. Quinney. (1973). Criminal Behavior Systems: A Typology. New York: Holt, Rinehart and Winston

Doyon, R. A. and Reid, D.B. (1981) Homogeneous Criminal Careers: Do they Exist? Paper Presented at 1981 Meeting of Law and Society Association, Amherst, Mass. (Grant 79-NI-AX-0129 to Spectrum Analysis)

Ferdinand, T. N. 1966. Typologies of Delinquency. New York: Random House, Inc.

Gibbons, D. C. (1973). Society, Crime and Criminal Careers. Englewood Cliffs, N.J.: Prentice-Hall.

___. 1972. Typologies of Crime and Criminals: A Critical Assessment. Paper presented at the NILECJ Seminar on "The Classification of Criminal Behavior: Uses and the State of Research", May 4, 1972.

Gibbons, D C. and D. L. Garrity. Some Suggestions for the Development of Etiological and Treatment Theory in Criminology. Social Forces XXXVIII (October 1959), 51-58.

Glueck, Sheldon and Eleanor Glueck. (1930). Five Hundred Criminal Careers. New York: Knopf.

---. 1934A. Five Hundred Delinquent Women. New York: Knopf.

___. 1934B. One Thousand Juvenile Delinquents. Cambridge, Mass.: Harvard University Press

___. 1937. Later Criminal Careers. New York: Commonwealth Fund.

___. 1943A. Juvenile Delinquents Grown Up. New York: Commonwealth Fund.

___. 1943B. Criminal Careers in Retrospect. New York: Commonwealth Fund.

___. 1950. Unraveling Juvenile Delinquency. Cambridge,

Mass.: Harvard University Press.

Hood, R. and R. Sparks. 1970. Key Issues in Criminology. New York: McGraw Hill.

Lombroso, C. and W. Fierreno (1898) The Female Offender. New York: D. Appleton.

Lunneborg, C. and Abbott, R.D. (1983) Elementary Multivariate Analysis: Application of Basic Structure. New York: Elsevier Science Publishing.

Martin, John. 1952. My Life in Crime: the Autobiography of a Professional Thief. New York: Harper.

Petersilia, J. , P. W. Greenwood and M. Lavin. 1978. Criminal Careers of Habitual Felons, Washington, D.C.: U.S. Government Printing Office.

Peterson, M., H. Braiker, and S. Polich. 1980. Doing Crime: A Surv of California Inmates. Santa Monica, Cal.: The Rand Corporation.

Reid, D. B. and Doyon, R.A. (1981) Parameters of Adult Crime Switch. Paper Presented at 1981 meeting of Law and Society Association, Amherst, Mass. (Grant 79-NI-AX-0129 to Spectrum Analysis)

Shaw, Clifford. 1930. The Jack Roller: A Delinquent Boy's Own Story. Chicago: University of Chicago Press.

Sutherland, E. 1937. The Professional Thief. Chicago: University of Chicago Press.

Willstadter, R. (1982) Crime Switch Patterns in Adult Criminal Careers. (Grant 79-NI-AX-0129 to Spectrum Analysis)

Wolfgang, M., R. Figlio and T. Sellin. 1972. Delinquency in a Birth Cohort. Chicago: University of Chicago Press.