A RAND NOTE

RAND RESEARCH ON CRIMINAL CAREERS:
AN UPDATE ON PROGRESS TO DATE

Peter W. Greenwood

October 1980

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Prepared For

The U.S. Department of Justice

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PREFACE

Since 1975 Rand has been conducting various studies to determine the characteristics of criminal careers and the potential value of various criminal justice strategies in curtailing their development or lessening their effects. This work is supported by grants from the Center for the Study of Crime Correlates and Criminal Behavior within the National Institute of Justice, including successive Research Agreements Program grants, which are currently in their sixth year.

This Note summarizes the work completed to date and describes current activities. It has been prepared to keep NIJ officials, practitioners, and research colleagues aware of Rand's progress on criminal career research.

The author is the director of Rand's Criminal Justice Program. The Note summarizes the work of several staff members, including Harriet Braiker, Jan Chaiken, Marcia Chaiken, Patricia Ebener, Paul Honig, Charles Hubay, Marvin Lavin, Kent Marquis, Joan Petersilia, Mark Peterson, and Suzanne Polich.

The descriptions of completed studies draw heavily from the executive summaries of the final reports.
SUMMARY

During the past five years, Rand has been performing research on criminal careers. Several studies are currently underway on the subject. The primary thrust of this research has been to analyze individual patterns of criminal activity from the self-reports of incarcerated felons, and to identify personal characteristics associated with high rates of criminal activity that might be used to inform sentencing decisions. The policy focus of the research is on incapacitation—the amount of crime that can be prevented by incarcerating specific types of offenders.

A study of criminal career development, based on interviews with 49 incarcerated robbers, disclosed that most of these offenders engaged in a wide range of criminal activities throughout their careers but that the individual offense rates were highly skewed, the majority committing crime at fairly low rates. The few high-rate offenders were more likely to view themselves as criminals and to plan their crimes more rationally than the low-rate offenders.

A survey of 624 male California prison inmates provided a much more detailed picture of individual offense patterns that corroborated and extended the results of the previous study. Only 10 percent of the sample could be characterized as criminal specialists. The majority engaged in a wide variety of criminal activity during the three years immediately preceding their incarceration. Although more than half of the sample committed under 3 serious crimes per year, the most active 8 percent committed over 60 crimes per year. High-rate offenders were characterized by early and frequent involvement in juvenile crime, numerous adult convictions, higher than average drug use, and self-identities and values consistent with a criminal lifestyle. These factors more effectively identified offenders who had high rates of offenses against property than those who committed violent crimes at high rates.

A study of felony arrest disposition patterns in California was conducted in order to learn how sentencing practices varied over the
typical criminal career. This analysis disclosed a very strong relationship between a defendant's prior record and the severity of the sentence he could expect to receive. The likelihood of a prison commitment for convicted robbers increased from 16 percent for those with minor records to 72 percent for those who had been to prison before.

An analysis of potential incapacitation effects resulting from different mandatory sentencing schemes, using official criminal histories for a sample of convicted felons, disclosed that substantial increases in the prison population would be required to bring about modest reductions in crime. This analysis also disclosed that short mandatory terms for all offenders would be more effective in reducing crime than longer mandatory terms for only those with lengthy prior records.

A recently completed study of sentencing patterns for young offenders found considerable variation across sites in the relative severity with which young adults were treated. It also found wide differences across sites in the frequency with which juvenile criminal history information was available to inform the processing of criminal cases against young adults. The differences appeared to result from local policy rather than from formal legislative or organizational differences. The results have implications for both future research on sentencing effects and the evaluation of several policy reforms recently proposed to alter the way serious young criminals are prosecuted and sentenced.

Rand's current research is based on a second survey of 2400 incarcerated male prison and jail inmates from three different states. In addition to the self-reported descriptions of crime-related activities and attitudes obtained in the first survey, the second contains extensive data from official records and information about within-prison activities. Two analyses of these data have been completed to date.

The first study examined the consistency between various survey items and official records in order to assess the validity and reliability of the survey responses. It did not find evidence of
systematic bias in responses across different respondent groups, although there was considerable variance between the two sources of data.

The second study examined the prison experiences of the survey respondents—their work assignments, rule infractions, and participation in treatment programs. Its purpose was to determine whether inmates who could be characterized as "career criminals" on the basis of their prior record represented unique problems for corrections administrators. With a few minor exceptions, the study found no significant differences between career criminals and non-career criminals in their need for treatment, participation rate in treatment programs, or rule infractions. Younger inmates were found to have substantially higher infraction rates.

During the next year we shall continue to exploit the data from Inmate Survey II to (1) estimate individual patterns of criminal behavior, (2) identify characteristics that are most strongly associated with serious criminal behavior, and (3) estimate the potential crime reduction effects of various sentencing policies. Improvements in the survey instrument and new statistical techniques will provide more accurate estimates of specific types of criminal activity than in the earlier survey. The improved sample design, covering both prison and jail inmates from three different states, will permit us to investigate how well our findings can be generalized to other jurisdictions. The availability of official record data will allow us to explore more directly the ability of the system to identify the most serious offenders. The validity and reliability analyses will allow us to test whether key findings appear to be sensitive to confusion or lying among respondents.
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I. INTRODUCTION

One of the most troubling issues confronting the criminal justice system concerns what it should do with those chronic offenders who continue to engage in crime after repeated arrests, convictions, and commitments to treatment programs. Does their apparent long-term involvement in crime indicate that they are more of a threat to society than other offenders? Will their incarceration for extended periods of time result in a significant reduction in the overall crime rate? Is there any evidence to suggest that these chronic offenders are being allowed to slip through the system without receiving appropriate sentences?

The general dimensions of the chronic offender problem were first empirically demonstrated by Marvin Wolfgang and his colleagues in a study that examined the criminal records of all males born in Philadelphia in 1945 and who resided in that city between the ages of 10 and 18.* This analysis showed that although one-third of the cohort had some contact with the police for a nontraffic criminal offense by the age of 18, most of the recorded arrests were accounted for by a small number of chronic offenders: 6 percent of the cohort were responsible for half of the total number of crimes for which any members of the cohort had been arrested before their 18th birthday.

Policymakers have become concerned with these chronic offenders as the goal of sentencing has shifted away from rehabilitation to a more direct concern with protecting society from serious crime. Following the work of the President's Crime Commission in the mid-1960s, the focus of criminal justice research and program development efforts was in the area of prevention and rehabilitation. The

emphasis was on diagnosing the offender's underlying problems that had caused his criminal behavior and designing individualized treatment programs that would be responsive to his needs.

During the 1970s, these programs failed to live up to the promises of their proponents. Evaluations have not found any treatments that consistently reduce the likelihood of future recidivism. This negative evidence concerning the effects of treatment programs, along with an increasing concern for the victims of crime, has shifted sentencing philosophy away from a focus on rehabilitation to a more pragmatic concern with deterrence and incapacitation as means of protecting society.

Because of this shift in policy direction, criminal career research can play a central role in determining whom society needs to be protected from, and how that protection can best be achieved. Its primary objectives involve determining how the frequency and seriousness of an individual's criminal activity changes over time and predicting which subsets of offenders represent the greatest potential threat to public safety, based on their prior criminal history. Other objectives involve determining how the system treats different types of offenders, predicting the effects on crime and institutional populations of alternative sentencing policies, and identifying unique psychological or behavioral characteristics of offender subgroups that might suggest productive rehabilitation methods.

During the past five years, Rand has conducted a number of studies involving these criminal career issues. One unique aspect

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Many of the evaluations had severe methodological flaws, which may contribute to the lack of positive findings. For a recent review of this topic see Lee Sechrest, Susan O. White, and Elizabeth D. Brown (eds.), The Rehabilitation of Criminal Offenders: Problems and Prospects, National Academy of Science, Washington, D.C., 1979.

The work has been supported under the National Institute of Justice's Research Agreements Program and by individual grants from the Institute's Center for the Study of Crime Correlates and Criminal Behavior.
of Rand's work has been the use of offender self-reports, obtained through interviews and self-administered surveys, to develop measures of criminal activity. The work completed to date is the first to provide direct estimates of individual offense rates for different types of offenders categorized by age, prior record, and a number of other social and psychological variables. It also provides estimates of each group's probability of arrest, associated with participation in different types of crime.

Other research projects have investigated adult felony arrest disposition patterns, the potential effect of mandatory sentencing policy on future crime rates, and the relationship between age and sanctions for youthful offenders.

Data collection for the first offender survey was completed in 1976 and consisted of an anonymous self-administered survey of 624 male inmates of five California prisons. Findings from this analysis were recently published in Mark Peterson, Harriet Braiker with Suzanne Polich, *Doing Crime: A Survey of California Prison Inmates*, The Rand Corporation, R-2200-DOJ, May 1980. A second offender survey was fielded in 1978. This latter survey, which used a group-administered self-report questionnaire, involved approximately 2500 prison and jail inmates in California, Texas, and Michigan. Data from official records were coded and merged with prison inmate responses for validity testing purposes and later follow-up studies. The analysis of this second survey is now underway.
II. COMPLETED STUDIES

CRIMINAL CAREERS OF HABITUAL FELONS*

The Criminal Career study was our first systematic attempt to elicit information from offenders to develop a quantifiable portrayal of how a criminal career developed. We specifically focused on the changes that occur in individual criminal behavior over the course of a career. The study was based on a random sample of 49 incarcerated male felons who met two criteria: They were serving time for at least one count of armed robbery in a medium-security California prison and had served at least one previous prison term.

Judged by the frequency, gravity, and length of their involvement with the law enforcement and criminal justice system, the offenders in this sample could be considered serious career criminals by almost any definition. The study drew upon two sources of information about these felons: (1) their responses to a structured interview containing over 600 open- and close-ended questions, and (2) their official criminal histories. The self-report questionnaire covered three time periods in each respondent's career: juvenile, young adult, and adult. It explored family relationships, frequency and type of criminal activity, frequency and types of arrests and convictions, legitimate employment, sources of income, motivations, attitudes, methods of planning and executing criminal acts and avoiding arrest, involvement with drugs and alcohol, use of force and violence, and post-incarceration behavior.

The 49 respondents reported an average of 200 serious crimes over a typical career length of about 20 years. Few of them showed any degree of crime specialization with most participating in several different types of crime at each stage in their career.

Within the sample of 49, two different types of offenders were distinguished. They were labeled intermittents and intensives. The

intensive offenders were the "heavies" who tended to see themselves as professional criminals. Their criminal activity was sustained over long periods of time and was directed toward some specific purpose, be it high living, support of a drug habit, or repayment of debts. The intensives took more pains to avoid arrest and in fact were more successful in avoiding sanctions at all levels for any one crime. Their average crime rate exceeded that of the intermittents by a factor of ten. The intermittent offenders, who were more numerous, did not view themselves as serious criminals. Their criminal activity was irregular and opportunistic, and their monetary gains were often quite low. Their responses suggest that they were frequently oblivious to the risk of their criminal acts and consequently they experienced a much higher likelihood of arrest.

ARREST DISPOSITIONS

This study examined data compiled by California's Bureau of Criminal Statistics (BCS). For a sample of approximately 11,000 adult felony arrests, selected from four Southern California counties, BCS had coded the prior record of all arrestees. With this file, it was possible to determine how case outcomes were related to the defendants' conviction offense and prior record. These estimates of final disposition patterns were in turn used to estimate the incapacitation effects of alternative sentencing policies on the aggregate crime rate.

Analysis of adult felony arrest disposition patterns in California reveals why felons are more likely to be incarcerated as their careers progress. The California data distinguished arrestees by four categories of prior record: "none"--an absence of any adult arrest; "minor"--at least one arrest but no sentence in excess of 90 days or two years probation; "major"--at least one conviction resulting in a term in excess of 90 days or two years probation; and "prison"--at least one commitment to state prison.
The likelihood of conviction, about 40 percent of all arrests in the sample, did not appear to vary systematically with prior record. However, cases against defendants with less serious records tended to drop out earlier in the prosecution process.

Among those convicted, the likelihood of receiving a prison sentence increased substantially with the seriousness of the defendant's prior record. For convicted robbery defendants, the likelihood of prison commitment increased from 16 percent for those with minor records to 72 percent for those with prior prison records. For convicted burglary defendants, the likelihood of prison commitment increased from zero for defendants with minor records to 23 percent for those with prison commitments.

MANDATORY SENTENCING

This study utilized a data file containing the criminal histories, personal characteristics, current charges, and dispositions for a sample of 625 defendants convicted between 1968 and 1970 in the District Court of Denver, Colorado. The detailed record of prior convictions and sentences allowed us to estimate what the effect would have been on crime rates and prison population if there had been more severe sentencing policies at the time of their earlier convictions.

One method that legislators frequently adopt for increasing sentence severity involves mandating minimum sentences for certain types of defendants. The effects of any mandatory-minimum policy will be mitigated to the extent that prosecutors fail to charge or judges fail to find those specific elements of prior record or current criminal activity that will invoke the mandatory sentence. Indeed, the possibilities for selective charging and plea bargaining are one of the principal deficiencies that are normally cited to argue against such policies.

An analysis of various mandatory-minimum sentence lengths and target groups revealed that very large increases in prison populations are required in order to achieve significant reductions in crime. A one-year mandatory-minimum for any felony conviction would result in a 50 percent increase in the prison population and a 15 percent reduction in crime. Three-year minimum sentences would increase the prison population by 225 percent and reduce crime by approximately 35 percent.

One means of comparing different mandatory-minimum policies is their relative efficiency—that is, the reduction in crime achieved by a given increase in prison population size. Policies that result in greater crime reduction can be said to be more efficient. Our analysis revealed that mandatory-minimum policies emphasizing defendants with prior convictions are less efficient than policies that do not.

This finding does not imply that defendants with prior records pose less risk of future crime than those without prior records. Rather, it suggests that defendants with prior records who currently receive sentences less than the hypothetical mandatory-minimum present less risk of future crime on the average than do defendants without prior records who receive less than the mandatory-minimum. Because under existing policy defendants with prior records are much more likely to be incarcerated than those without records, this finding suggests that judges are somewhat successful in discriminating among these defendants according to risks in determining those who need not be incarcerated.

INMATE SURVEY I

This study was based on an anonymous survey of 624 male inmates drawn from five different California correctional facilities, and who represented a random sample of all male California prison inmates. The survey instrument covered each offender's criminal activity; arrests, convictions, and incarcerations; juvenile history; employment; motives for committing crime; perceptions of the benefits and risks that accrue from criminal activity; and attitudes toward the criminal justice system.

Most of the questions concentrated on the three-year period before conviction on the current commitment offense. Respondents' self-reported crimes were used to explore individual patterns of criminal activity and to estimate the prevalence, offense rates, and arrest rates for major felonies among populations of offenders at large and among inmates entering prisons—parameters which can be used to model the incapacitation effects of incarceration. The survey responses were also used to examine the characteristics of career criminals and to develop models for several types of highly active offenders.

Criminal Behavior

Surveyed inmates answered detailed questions about the crimes they had committed during the three years before their present prison terms. These questions dealt principally with the violent crimes of armed robbery, use of a weapon, threat with a weapon, aggravated beating, and attempted murder; and the property crimes of burglary, car theft, forgery, fraud, and drug sales. Most inmates reported activity in a number of different crime types—49 percent of those reporting crimes committed four or more different types. However, 19 percent reported committing only one type of crime.

For each type of crime, most inmates who reported committing the crime reported only a few commissions. For each crime type only a small number of offenders committed the crime at high rates. Few inmates—10 percent of the sample at most—were specialists who committed only one type of crime at high rates. Rather, most respondents who committed one type of crime at a high rate also reported substantial commissions of other types of crime.

Mathematical models were developed to estimate the number of crimes committed during the previous year of street time by a typical group of incoming prisoners in California. On the average, an incoming prisoner in California committed about 14 serious crimes per year during the three years before his prison term.* However, because the average is

* Homicide, rape, armed robbery, assault, burglary, auto theft, and forgery are included. Drug sales and frauds are not included.
markedly raised by the activity of a few high-rate offenders, very few
offenders have crime rates anywhere near this average. We estimated
that more than half of the incoming prisoners committed fewer than
3 crimes per year of street time. However, the most active 8 percent
of incoming prisoners committed over 60 crimes per year. Incarceration
of the most active 8 percent might prevent three times as many crimes
as the incarceration of the least active half of California prisoners.

Correlates of Criminal Behavior

**Age.** Our survey analysis suggests that criminal activity among
active offenders decreases with age primarily because older offenders
commit fewer types of crimes. For the crime types that they continue
to commit, older offenders reported about the same crime commission
rates as did younger offenders. However, age was found to be a surro-
gate for other characteristics that are more strongly correlated with
crime rates. Younger offenders were more likely than older offenders
to have extensive juvenile records, to use drugs, and to have criminal
attitudes and self-identities. Each of these characteristics is asso-
ciated with heavy criminal activity. When the analysis is adjusted
for these other factors, the relationship between age and criminal
activity disappears. However, because the criminal justice system seldom
has information about these other characteristics, an offender's age
may provide useful information about his overall rate of criminal ac-
tivity.

**Prior Record.** Because older offenders tend to have longer records,
offenders' ages and prior records are naturally confounded. Our analy-
sis showed that each was separately associated with the rate of crimi-
nal activity. Among offenders with similar numbers of prior convictions,
younger offenders were the most active. Among offenders of similar
ages, those with numerous prior convictions were the most active.

Respondents who had received more severe sentences in the past
did not report a greater amount of recent crime than others with
similar conviction histories. For example, respondents who had served
a prior prison term reported no more crimes than did those who had been
convicted of felonies but not sentenced to prison. Nor was the number of prior prison terms associated with either violent or property crime. Rather, even after adjusting for their great number of felony convictions, highly active offenders were more likely to have been placed repeatedly on probation.

Drug Use. Over 40 percent of the respondents reported using drugs during the three years prior to their incarceration. Most of the offenders who used drugs used heroin.

Drug use figured prominently in property crime. Drug users reported substantially more property crime than did nonusers; this relationship persists even after controlling for other personal characteristics. They also reported more violent crimes, but when the offender's age and psychological characteristics were also considered, drug use was no longer significantly related to the likelihood for violence.

Juvenile Criminal History. Respondents who were very young when they first began committing crimes and who committed serious crimes frequently as juveniles reported greater crime as adults during the three years prior to their incarceration. Indices of the starting age and of the extent and seriousness of juvenile crime were each strongly associated with all measures of adult crime, including the number of crime types committed and the level of activity for any one type.

Social Stability. Employment and residential stability were associated with respondents' criminal activity. Offenders who did not work or who seldom worked and those who held a series of short-term jobs tended to commit more crime. Similarly, respondents who moved frequently from city to city reported committing more crime. However, the associations between crime and employment and crime and residential stability were weak.

Self-Concept. The survey revealed that criminal activity was strongly associated with a respondent's self-concept; highly active criminals tend to think of themselves as criminals.* Sixty percent of

* A scale of the extent of criminal identities had the strongest association with self-reported crimes for any variable examined in the survey, explaining 20 percent of the variation in activity for all reported crime and 25 percent of the variation for property crime. This level of association is unusually good for criminological variables.
the respondents indicated that before they were arrested, they thought of themselves as some type of criminal—e.g., a robber, a thief, a burglar. In contrast, one-fourth of the respondents thought of themselves as noncriminals, "straight." The remaining 15 percent of the respondents did not describe themselves either as criminals or solely as straights, but chose some other socially deviant identity—e.g., drug user/addict, gang member.

**Motivation.** The survey asked respondents to indicate the reasons for their main crimes. Analyses of the respondents' answers revealed three separate (statistically unrelated) sets of reasons: (1) distressed economic conditions, (2) desire for high living and high times, and (3) temper. Forty-seven percent of the respondents reported that economic distress was important as a reason for their crimes; 35 percent reported that their desire for high times was an important reason for their crimes; and 14 percent reported that temper was important.

Not surprisingly, motivation is related to the type and rate of criminal activity. Offenders who cited "high living" as their primary motivation also reported the greatest criminal activity. Offenders who cited economic need reported fewer violent crimes; those who cited temper reported more.

**Selective Incapacitation**

Our analysis of the survey identified a group of offenders who share common characteristics and who commit a large proportion of the crime reported by the entire survey sample. As juveniles they began committing serious crimes. Their psychological characteristics support their criminal life and suggest that they will continue to commit crimes. They tend to identify themselves as criminals in multiple ways, to be motivated by hedonism, to see crime as a safe and enjoyable way to obtain the good life, and to see themselves as proficient criminals. They appear to be unconcerned about being caught; they expect to return to crime after prison.

The 25 percent of our sample that most consistently shared these characteristics reported committing a disproportionate amount of every
crime examined in the survey. For example, the same 25 percent re-
ported committing 58 percent of all armed robberies reported by our 
entire sample, 65 percent of all burglaries, 60 percent of all auto 
thefts, and 46 percent of all assaults. If these high-rate offenders 
could be identified for selective prosecution and incarceration, the 
effectiveness of the criminal justice system in reducing crimes would 
be improved.

Although the survey provides empirical support for the general 
objectives of selective incapacitation, it also suggests some important 
limitations. First, the survey indicates that such programs would be 
more effective in reducing property crimes than in reducing violent 
crimes. Offenders who commit property crimes at high rates can be iden-
tified within the survey, but those who commit violent crimes at high 
rates cannot; high-rate violent offenders do not share any distinguish-
ing characteristics. In short, the survey found evidence of career 
property criminals and career criminals who commit both property and 
violent crime. It provides no evidence of an identifiable group of 
career criminals who commit only violence. Even for property crimes, 
the survey analysis suggests we can expect only limited success in 
identifying true career criminals.

In attempting to identify high-rate offenders, the criminal jus-
tice system is hampered in two ways. It does not have access to all 
the information available to us in the survey, and it does not routinely 
use information that is or could be available to it. Our analysis 
illustrates both problems.

First, much of the information we used in the survey to identify 
and describe career criminals is unavailable to the criminal justice 
system. For example, prosecutors or judges cannot systematically con-
sider the psychological characteristics that are typical of true career 
criminals. To examine the significance of this limitation we considered 
how well criminal justice agencies could identify career criminals, 
using only the information usually available to them. Analyses using 
such accessible information were only two-thirds as successful as those 
including the private, psychological variables contained in this survey.
Second, information that could be used to identify high-rate offenders is not always used effectively. For example, the survey found that drug use was associated with extensive criminal behavior. The most active offenders tended to report an addiction to or regular use of heroin. However, some criminal justice agencies have no record of an offender's history of drug use, even though this information is often available from parole or probation records. Even when evidence of drug use is available, it may result in more lenient treatment of the offender. This sentencing practice is the exact opposite of one that would serve an incapacitation policy. As a second example, the survey found that the most serious adult offenders began committing crimes at an early age. However, many courts and prosecutors do not have routine access to information about an adult offender's juvenile record.

INMATE SURVEY II

The first Inmate Survey was an initial attempt to obtain systematic estimates of individual offense rates and their social and psychological correlates, using offender self-reports. The survey was anonymous to encourage candid responses. It involved a random sample of prison inmates from a single state.

The second survey, completed in the spring of 1979, represents a considerable methodological advance. A larger sample (approximately 2400) of respondents was drawn from prison and jail inmates in three states: California, Michigan, and Texas. The sample in each state was restricted to inmates committed from specified metropolitan areas to provide a preselected mix of demographic characteristics and to permit comparisons between prison and jail inmates committed from the same counties. The prison samples were also weighted to correct for sentence length bias so that the resulting samples are representative of incoming inmates, a more appropriate population for investigating sentencing issues.

The second survey was not anonymous. Extensive pretesting established that lack of anonymity would not significantly affect response rates. Therefore, the maintenance of respondent identifiers permitted
the collection of extensive official record items to supplement the survey and validate some of the items. These identifiers will also permit subsequent follow-up studies.

Two additional methods of reliability assessment were built into the survey. Several redundant items were included in the instrument, and retests were administered to 252 prisoners one week after they completed their initial questionnaire.

The second survey incorporates a number of other features designed to increase the accuracy of responses and provide opportunities to measure their reliability. The questions that establish the characteristics of the "window period" prior to the respondent's current conviction were extensively modified and tested to assist the respondents in defining the period properly and in recalling their activities. We modified the crime rate questions so that high-rate offenders could state their level of activity without estimating the total number of offenses they committed during the entire window period.

The response rate for the survey was 65.4 percent for all inmates initially scheduled. A replacement sample completed an additional 215 instruments. It was drawn to reflect as carefully as possible the characteristics of nonrespondents. Approximately 2400 questionnaires were completed, and the characteristics of prison respondents appear very close to those of the initial sample.

These data are now being analyzed to determine:

- The reliability and validity of the survey responses.
- The distribution of individual offense rates and probabilities of arrest.
- Correlates of high-rate or serious and persistent criminality.
- The predicted incapacitation effects of alternative sentencing policies.

*Procedures were developed to avoid the appearance of personal identifiers on survey instruments and to assure that computer-readable data files do not contain personal identifiers. The link files that relate respondents' names to data records are maintained in hard copy in a separate secure location.
BAYES ESTIMATES

In this project, statistical analyses and mathematical modeling were undertaken to develop techniques for estimating individual crime commission rates from self-report data. The methods were developed in conjunction with Inmate Survey II and have been tested on selected data from that survey, but they are intended to apply to various data sources concerning individual criminal activity.

This methodological project distinguishes between and individual's propensity to commit a given crime (commonly called his lambda for that crime) and the rate at which he happened to commit the crime during the measurement period. It also distinguishes between the study group and the general population of offenders in the distribution of lambda. Specifically, methods were developed to handle three types of analytical problems:

1. Description of the distribution of offense propensities for a group of offenders, given information about their criminal activity during a measurement period. Methods were developed for estimating the distribution of offense rates when some respondents' data are imprecise, for fitting a suitable functional form to the data, and for estimating how many offenders in the group have "true zero" lambda for a particular crime (as opposed to having low lambda and just not happening to commit that crime during the measurement period).

2. Estimation of an individual's offense commission rate, taking into account the group's overall distribution of offense rates, and his reported crime commissions and other characteristics. The resulting "shrinkage" or "Bayes" estimates are more appropriate than traditional estimates for classifying offenders into groups according to their offense rates and for relating their personal characteristics to their offense propensities.

3. Estimation of the distribution of offense rates for a typical group of offenders that differs from the study population in some known way. These methods can be used, for example, to convert Rand's inmate survey data about offenders in jail or prison into estimates of crime commission propensities for various categories of unincarcerated offenders, such as an arrest cohort or offenders "on the street."

THE PRISON EXPERIENCE OF CAREER CRIMINALS*

This study, which used data collected in the course of Inmate Survey II, was designed to determine whether "career criminals," inmates with lengthy prior records and current commitments for serious crime, represented any unusual needs for treatment and whether they were currently receiving differential treatment while imprisoned. Data for the study consisted of questions in the Inmate Survey II booklet concerning treatment needs, participation in treatment programs and work assignment, and opinions about the programs offered. It also included data from official corrections records concerning inmate characteristics, prior records, and institutional infractions.

Extent of Treatment Programs

The study found large differences in treatment policy among the three survey states. Michigan inmates participated in rehabilitation programs more frequently than inmates in California or Texas. California concentrated on education and vocational training, while in Texas the emphasis was on work assignment.

In all three states the likelihood that inmates in need of treatment will participate in an appropriate program is highest in the area of education. In California, 45 percent of those most in need of education had participated in an education program before the survey, in Michigan 71 percent, and in Texas 59 percent.

The match between high need and participation is a poorer one in vocational training programs. Only about 30 percent of the high-need inmates, who for the most part were unemployed before their current prison term, participated in a vocational training program before the survey.

In all three states a large percentage of inmates had serious drug and alcohol problems. Most inmates with these problems failed to receive treatment while imprisoned. In each state, about 30 percent of the population was classified as having a high need for alcohol treatment. In Michigan, 37 percent of those with a high need had participated in an alcohol program before our survey, in California 19 percent, and in Texas 36 percent.

In drug rehabilitation, there is even less correspondence between high need* for treatment and treatment received. About 33 percent of the California inmate population was classified as having a high need for drug rehabilitation, but only about 5 percent of those inmates participated in a drug treatment program before the study. In Texas, also, less than 5 percent of the inmates with a high need for drug rehabilitation received treatment. Only in Michigan does there appear to be a serious attempt to involve inmates in such programs, where 55 percent of the high-need inmates participated in a drug treatment program.

Overall, we found prison programs to be allocated quite randomly among those inmates with comparable needs. This was particularly true in the areas of education and vocational training. Only alcohol and drug rehabilitation programs had a slight overrepresentation of a particular racial group. There we found that white inmates with alcohol problems are slightly more likely to receive alcohol treatment than ethnic minorities with similar alcohol abuse histories. Conversely, black inmates are more likely to enter drug treatment programs than white inmates with similar drug abuse histories.

*Only inmates who had reported using hard drugs on a daily basis were defined as high-need.
Career Criminal Participation in Treatment Programs

For this study we defined career criminals in a way that approximated how prosecutors select defendants for career criminal prosecution. For inmates 25 years of age or older, having a prior prison commitment sufficed for designation as a career criminal. For younger inmates, a career criminal was one who had served a prior prison term, or had three or more serious felony convictions, or one serious felony conviction plus a serious juvenile record. By our definition, 49 percent of California inmates, 43 percent of Michigan inmates, and 42 percent of Texas inmates were career criminals.

We found that a slightly larger percentage of career criminals had high needs for treatment in each of the program areas, but only in two instances were these differences statistically significant. Except for a few minor differences we found that high-need career criminals participated in treatment programs at the same rate as other offenders. We thus conclude that, except in scattered instances, career criminal inmates do not differ from the general prison population in their need for treatment or in program participation.

The Association Between Inmate Characteristics and Prison Infractions

In examining the relationship between inmate characteristics and the frequency and severity of infractions, we found that inmate age was a characteristic significantly associated with the severity of infractions in all states. Inmates in their early twenties accounted for a greater number of serious infractions than did any other age group. Infractions declined dramatically with age, so that by age 30 they seldom occurred, and were less serious. Attempted escape was the only type of infraction that tended to increase with age.

In all three states, prison programming was associated with inmate misbehavior. Inmates without a work assignment displayed more negative prison behavior than their working counterparts. Similar results were obtained for treatment participation: Fewer disciplinary problems were found among inmates with high levels of treatment participation, all other things being equal.
We noted few significant differences in institutional behavior between career and noncareer criminals. In all three states, career criminals average slightly higher infraction scores, all things being equal. However, the associations were not statistically significant.

**JUVENILE RECORDS AND YOUTH SANCTION PATTERNS**

Several research efforts, including our own, have concluded that young adults who are just past the maximum age jurisdiction of the juvenile courts might be receiving inappropriately lenient sentences. These conclusions were based on (1) consistent evidence that criminal activity declines with age, (2) aggregate statistics showing a discrepancy between the distribution of arrests and imprisonment over different age groups, and (3) a belief that restrictions on access to juvenile records prevent adult courts from identifying serious offenders early in their careers. This pilot study was designed to explore these issues. It relied on previous studies of the relationship between age and criminality, a reanalysis of existing data sets to determine sanction patterns by age group, and a national survey of prosecutors to determine current practices regarding the use of juvenile records in adult criminal courts.

The study concluded that current estimates of the distribution of offenders by age that rely on arrests or police contact data are biased so as to overestimate the criminal activity of the young. This conclusion rests on the finding that (1) for specific offense categories the crimes of younger offenders tend to be less serious than those of older offenders; (2) younger offenders are more likely to commit crimes in groups; and (3) for any specific type of marginally criminal behavior, the police are more likely to arrest a juvenile than an adult. For future research on crime risk by age or sanction patterns by age, we recommend more careful controls on offense seriousness than those provided by current statutory labels.


†Arrests peak in the late teens, but the rate of imprisonment appears to peak around age 30.
The analysis of sanction patterns relied on data sets from Los Angeles County, Franklin County, Ohio, and New York City. In Los Angeles County, the study found no substantial increase in the likelihood of incarceration with age, although young adults sentenced to state institutions do serve shorter terms. In contrast with the low conviction (finding of delinquency) and incarceration rates normally disclosed by aggregate juvenile court data, we found that older juveniles arrested for residential burglary or armed robbery were treated about as severely as adults.

In Franklin County we found that young adults under the age of 21 were incarcerated much less frequently than older offenders. Sanction severity for older juveniles and young adults was about the same. In New York City, where the jurisdiction of the juvenile court terminates at the 16th birthday (it extends to the 18th birthday in California and Ohio), young adults (under 18) were also treated much more leniently than those who were older.

The difference in sanction patterns with age across sites could not be fully attributed to any formal statutory or organizational differences between them. Rather, differences in sanction patterns by age appeared to be the unplanned consequence of interactions among various policy considerations, including the maximum age jurisdiction of the juvenile court, information-sharing practices between the juvenile and adult criminal systems, and local prosecution and correctional policies.

The survey of prosecutors revealed that in most jurisdictions they do receive some juvenile criminal history information on young adult defendants in serious cases. Juvenile records were consistently judged to be less complete, less accurate, and less accessible than adult records and usually consisted primarily of local police arrests.

Legal restrictions on access to juvenile records did not reduce the frequency with which they were used but did lower their quality. Such restrictions appear to disrupt the flow of disposition data back from the courts rather than suppressing records of police contacts.
III. CURRENT RESEARCH

During the next year, Rand's research on criminal careers will exploit the data from Inmate Survey II to determine:

1. The reliability and validity of self-reports from inmates.
2. The parameters of criminal activity and career progression across different offender groups, including prevalence of different offense types, offense rates, and probability of arrest.
3. Correlates of criminal activity such as drug use, employment history, adult arrest and conviction history, and juvenile interactions with the criminal justice system.
4. The potential for reducing specific types of crime through selective incapacitation policies.

1. RELIABILITY AND VALIDITY OF OFFENDER SELF-REPORTS

Rand's first offender survey did not formally attempt to assess the validity of the anonymous inmate responses. The only indications of validity we could offer were (1) correlations between survey items that were consistent with previous research findings (e.g., strong correlation between seriousness of juvenile criminality, drug use, and offense rate as an adult); and (2) estimated offense rates that were consistent with those derived from individual arrest histories. In the current survey the reliability of responses is being analyzed more extensively through record checks, retesting, use of redundant items, and checks on internal consistency.

In the record check, which has already been completed and is soon to be published, self-reported arrests and conviction offenses were compared with official records.* Answers to straightforward questions indicated little or no response bias that would affect estimates of overall arrest or conviction rates. In general, the number of arrests or convictions reported in the questionnaires was equal to

the number found in official records for the same group of prisoners. Rates for specific felonies, however, were often biased; but no consistent pattern of biases was found across the samples from the three states. The authors hypothesize that items get classified into the wrong felony category by either the record or the respondent. They find some evidence for systematic misclassifications within each state but not across states. When arrest numbers were inferred from a complex question sequence about "times caught for admitted crimes," a net overreporting bias was obtained.

Estimates of response reliability, which affects correlations, differed according to the estimation method. Correlations of the survey with the record were always lower than retest correlations. Using a model that assumed records contained as much error as the surveys brought the reliability estimates closer together but not into congruence. Apparently there are several different kinds and forms of error in surveys and records, so traditional reliability assessment techniques, which assume away most of the complexity, may yield inappropriate estimates.

The authors recommend several steps for exploratory data analysis to minimize the effects of the potentially complex response errors on subject matter conclusions.

Approximately 250 respondents in prison were retested one week after they completed their initial instrument. Although the sample is not sufficiently large to permit analysis across different offender groups, the data it provides have helped us assess the reliability of various topic areas covered by the questionnaire.

In addition, for a number of critical topics, redundant or closely related items were included in the questionnaire so we could examine the consistency with which specific information was provided. These comparisons can be made for all respondents, in prison or not, and the subject of a retest or not. We have developed a system of internal logic checks that allow us to identify inconsistent or clearly erroneous answers. For example, a respondent may admit committing the burglary for which he is currently in prison, but may elsewhere say that he never did burglary.
Or, he may report he has never been in prison when in fact he was in prison at the time of the survey and elsewhere reports he served a previous prison term. Such inconsistent or erroneous answers have been flagged and we will use them in the later analyses to determine the effects on our substantive results, if any, of deleting instruments deemed possibly erroneous.

Similarly, logic checks show how well the respondent followed skip patterns, which involve questions to be answered only when triggered by previous answers and require the respondent's close attention. Other checks show whether he gave impossible responses within an individual question (e.g., both "yes" and "no"). We have identified and programmed into the computer a total of 32 internal logic checks that will indicate how consistently each respondent has completed his questionnaire.

Inconsistent responses may be due to either error or lying. Logic checks that were failed by a large fraction of the respondents were interpreted to indicate a lack of clarity in instructions or questions in the survey instrument and were not used to judge the quality of answers of individual respondents. The remaining logic checks were used as indicators of consistent lying or confusion by counting the number of logic checks a particular respondent failed to pass.

The logic checks assist the analysis in several ways. They show which types of survey data are not worth analyzing because many respondents failed to answer the associated questions sensibly. A logic check of data from a particular question shows which respondents should be considered as missing because they did not answer consistently. Finally, analyses leading to major findings are performed twice: once for all respondents and once excluding those respondents who failed a large number of logic checks. This method permits us to ascertain whether the findings are sensitive to confusion or lying among respondents.

2. ESTIMATING THE CRIME PARAMETERS OF INDIVIDUAL CAREERS

A primary focus of Inmate Survey II was to provide data for developing accurate estimates of individual crime parameters and their
distribution across the offender population. The specific parameters of interest for any one offender are (1) the types of criminal behavior he engages in, (2) the frequency with which he engages in each offense type when he is not incarcerated, and (3) his probability of arrest for each offense type. For any specified group of offenders (such as males between the ages of 18 and 25 who have just been convicted of burglary) we are interested in estimating the percentage who engage in each type of offense (the prevalence of that offense type in the group), the group average offense rate, and probability of arrest.

We carefully designed and pretested the survey instrument to provide an unambiguous statement from each respondent as to whether he did or did not commit each type of crime during the measurement period, as accurate an estimate of the number of crimes he committed as he could reasonably be expected to recall, and a clear distinction among different types of crime. We carefully selected the sample of respondents so that the information provided by their responses could be generalized to a wider offender population.

The methods developed in a separate project are being used to analyze the crime commission data. Early results show that despite differences in the sample design for Inmate Survey II, the passage of over two years between Inmate Survey I and II, substantial changes in the instrument for Survey II, and a shorter measurement period for Survey II (one to two years) than for Survey I (three years), the prevalence figures for crimes committed by California prisoners are roughly the same in both surveys. The only major differences are (1) a substantial increase in prevalence of drug dealing while on the street (from 39 percent of California prisoners in 1976 to 51 percent

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*The sample consists of prison and jail inmates from preselected counties in three states. The counties reflect a spectrum of population density and urban conditions. The jail sample includes only men convicted of serious offenses. The prison inmates are a weighted sample selected to represent the distribution of incoming inmates.

†See "Bayes Estimates" in Section II, above.
in 1978) and (2) a clarification in the wording of the instrument that distinguishes fraud (19 percent prevalence) from "cons" (66 percent prevalence in Survey I).

For every crime type except motor vehicle theft, the sampled Michigan prisoners (heavily representative of Detroit) had a lower prevalence than California prisoners in the year before entering prison. The Texas prisoners had the same prevalence as the Michigan prisoners or lower, for all crime types, so they were substantially lower than the California prisoners. In particular, the prevalence of violence among Texas prisoners in the year before imprisonment was markedly lower than for Michigan or California prisoners.

The jail sample, which was anticipated to consist of less serious offenders, did indeed have lower prevalence figures than their prisoner counterparts, even for such lesser crimes as auto theft and fraud. However, the differences among the three study states noted above still persist for jail inmates. In fact, the California jail inmates had generally the same or higher prevalence figures than Texas prisoners in the year before incarceration.

Among those who commit any given crime, the shape of the distribution of their crime commission rates in Survey II was very similar to that found in Survey I. The vast majority of those who commit the crime do it at low rates (under 10 per year, except in the case of drug dealing). A small minority commit the crime at very high rates, which vary between crime types. As shown in Table 3.1, a high rate for robbery is about 86 per year and a high rate for drug dealing is about 3000 per year. (Only 10 percent of respondents exceed these rates.)

Although the shape of the distribution is approximately the same as previously observed, the numerical values in Table 3.1 are substantially higher than those found in Inmate Survey I (a factor of two or more). Tentatively, we believe these differences are explained by changes in the survey instrument and in the techniques used to estimate individual crime rates. The inclusion of respondents from jails and from states other than California does not explain the observed
Table 3.1
PERCENTILES OF REPORTED CRIME COMMISSION RATES, INMATE SURVEY II
(For respondents who did the crime)

<table>
<thead>
<tr>
<th>Crime Type</th>
<th>Rate (crimes per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
</tr>
<tr>
<td>Assault (including murder)</td>
<td>2.2</td>
</tr>
<tr>
<td>Robbery</td>
<td>4.8</td>
</tr>
<tr>
<td>Of businesses</td>
<td>4.6</td>
</tr>
<tr>
<td>Of persons(^a)</td>
<td>4.2</td>
</tr>
<tr>
<td>Burglary</td>
<td>5.2</td>
</tr>
<tr>
<td>Forgery, checks, credit cards</td>
<td>4.5</td>
</tr>
<tr>
<td>Fraud, swindle</td>
<td>4.9</td>
</tr>
<tr>
<td>Motor vehicle theft</td>
<td>3.4</td>
</tr>
<tr>
<td>Theft other than auto</td>
<td>7.4</td>
</tr>
<tr>
<td>Drug dealing(^b)</td>
<td>124.</td>
</tr>
</tbody>
</table>

\(^a\)Excludes robberies of businesses.  
\(^b\)Includes making, selling, smuggling, or moving drugs. Does not include possession or use.

disparity, because the offense rates for California prisoners are higher than those shown in Table 3.1. In later analyses we plan to check specifically whether the Survey II data for California prisoners' crime rates, if processed in the same way as for Survey I, would show a significant change since Survey I.

Additional work on individual crime parameters now under way involves describing the crime commission behavior of interesting subgroups of offenders, extrapolating the results to unincarcerated offenders, estimating arrest probabilities, and determining the relationship, if any, between crime commission rates and arrest probabilities.
3. CORRELATES OF CRIMINAL BEHAVIOR

Inmate Survey II provides self-reported data on criminal activity at four different stages in each inmate's career. The most specific information pertains to the two-year period immediately preceding the most recent conviction and includes the types of crimes committed, the number committed, the types of weapons used, and the degree of injury to victims. Information on the types of crimes committed is also provided for two other two-year intervals preceding this final period. Finally, information is provided on the type and frequency of juvenile crime. The questionnaire also contained items pertaining to a wide range of individual characteristics and experiences that are thought to be associated with criminal behavior. The subject areas covered by these questions are listed below with an asterisk identifying types of information currently or potentially available to the criminal justice system.

Survey data other than criminal behavior:

- Motivations for first involvement in crime
- * Juvenile period—whether arrested, convicted, or committed
- * Juvenile drug use
- * Count of adult arrests
- * Count of adult felony convictions
- * Count of lifetime jail and prison commitments
- Attitudes about the criminal justice system
- Attitudes about the rewards and costs of committing crime
- * Employment—longitudinal data
- Self-identity
- * Drug-use—longitudinal data
- * Alcohol use
- Income from crime
- Planning of crimes
- * Age/cohort
- * Race
- * Education
In addition, the following data were collected from official records for the respondents in prison.

Official record items for prisoners:
- Sociodemographic data
- Rap sheet conviction history
- Rap sheet arrests during window period
- Current conviction offense(s)
- Probation/parole revocations
- Prior commitments
- Age at first arrest
- Juvenile record items (vary by state)
- Treatment programs in prison

The primary objective in analyzing the correlates of criminal behavior is to determine which variables and combinations of variables have the greatest potential for identifying the serious offender. Ultimately, we plan to label an offender as "serious" in terms of the types of crimes he commits, the rate at which he commits them, and his persistence in committing certain types of offenses over sequential time periods. Preliminary analyses, however, have concentrated on the relationships between independent variables and these three descriptions (crime type, crime rate, and persistence) separately.

Predictor Variables
Several sets of survey and official record items have been given top priority for our current analyses. The following criteria were used in their selection:
- The data are routinely included, or could readily be included, on individual justice system records.
- They have been found to be significant covariates of criminal behavior in past studies of inmate populations, cohorts, or other offender samples; or, they have been hypothesized to explain variance in criminal behavior either by criminological theory, more general social theory, or committees specifically commissioned to formulate substantive questions about the
relationship of crime and social factors.

- Comparison of the items for tests and retests have demonstrated that the data are at least moderately reliable.

The high priority items include employment history, prior adult arrest record, prior adult conviction history, juvenile interactions with the justice system, drug use history, education, and age.

One of the primary techniques for constructing predictor variables from conceptually similar multiple survey items has been Guttman scaling. Because a major objective of the analysis is to develop predictor variables that may be of general use in identifying serious offenders, the Guttman scales first were developed from data for the Michigan prisoners only; then they were tested for reliability and scalability with the full sample.

Scales of adult prior record, juvenile justice system interactions, juvenile behavior, and both juvenile and adult drug use have already been constructed and have been found to be robust when applied to data from the different states.

Defining the Serious Offender

A scale of seriousness based on crime type has been constructed using the weights developed by Sellin and Wolfgang in their study of the public perception of crime. Respondents have been categorized according to the most serious crime they reported having committed during the study period. The categories in increasing order of seriousness are:

- "Victimless" crimes: primarily drug-related crimes.
- Property gleaning: theft, fraud, forgery, and auto theft.
- Burglary.
- Assaultive crimes.
- Robbery (including robbery with assault).

Each offender is classified into the highest applicable category. Thus, some respondents in the burglary category also commit drug-related offenses.
Preliminary analyses strongly suggest that this scale not only reflects public perception of seriousness but is also congruent with the order of steps in the career progression of criminals who are ultimately incarcerated. In contrast with research studies that show substantial transitions from one crime type to another, we find that the largest number of inmates appeared to be stable in the categories of crimes they commit; they remain in the same seriousness category up to six years before conviction. Moreover, those who changed in seriousness tended to advance to the next higher category.

The scale also appears to be congruent with the variety of crime committed in the period before incarceration; for example a respondent who reported doing a robbery during a specific period was more likely also to have reported committing other types of crimes during the same period than a respondent who reported doing burglary. These findings validate the scale's ability to help define seriousness, and suggest that deviation tends to be cumulative; once a person has broken a major social taboo, the breaking of lesser taboos may become normal and routine.

The scale is useful both in distinguishing seriousness for the sample as a whole and for controlling for seriousness in analyzing cross-state differences. The Texas sample includes many respondents who have committed relatively minor offenses compared with samples in other states; the California sample includes many respondents who have committed relatively major offenses. Of course, this variation may reflect differences in sentencing policies across states. By comparing respondents who are equally serious in terms of their actual criminal behavior we can avoid the confounding effect of sentencing procedure.

4. THE POTENTIAL CRIME REDUCTION EFFECT OF SELECTIVE INCAPACITATION POLICIES

The information on individual patterns of criminal behavior that can be derived from the survey provides a unique resource for exploring alternative incapacitation strategies. The incapacitation effect of a sentencing policy is defined to be the reduction in crime caused by removing offenders from the community. Incapacitation effects exclude
any changes in offenders' proclivity to engage in crime as a result of their incarceration. Such decreases in subsequent criminal behavior fall under the categories of special deterrence or rehabilitation.

The generally accepted model* for estimating incapacitation effects from estimates of average individual crime rates has the following functional form:

\[ \eta_{q, J, S} = 1 - \frac{1}{1 + \lambda(qJS)} \]

where

1. Offenders are assumed to commit crimes according to a Poisson process at a rate \( \lambda \) when they are not incarcerated.
2. The probability of arrest and conviction for any one crime is \( q \); the probability of incarceration given conviction is \( J \), and sentence lengths are exponentially distributed with a mean of \( S \).
3. The individual career lengths are exponentially distributed with a mean of \( T \), which is substantially larger than \( S \).

In this model the incapacitation effect is expressed as a fraction of the total crime or crime rate that would prevail if no offenders were incarcerated. As the parameters of the sentencing policy \((q, J, S)\) are increased, the incapacitation effect \((\eta_{q, J, S})\) approaches 1.0 and the crime rate approaches zero.

The sentencing policy parameters \((q, J, S)\) obviously can not be increased indefinitely. The probability of arrest and conviction

*The model was developed by Reuel Shinnar and reported in Reuel Shinnar and Shlomo Shinnar, "The Effects of the Criminal Justice System on the Control of Crime: A Quantitative Approach," Law and Society Review, Vol. 9, No. 47, pp. 581-611. See Alfred Blumstein, Jacqueline Cohen, and Daniel Nagin (eds.), Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates, National Academy of Sciences, Washington, D.C., 1978, for summary of the alternative models that have been developed and the effects of their assumptions.
(q) appears to be fixed (for policy purposes) by existing technology and procedures. For any near-term planning purpose (less than 10 years), the maximum allowable prison population acts as a constraint on JS, the average term served for all persons convicted.

In a discussion of criminal justice policy questions, incapacitation analysis can serve two distinct purposes. Estimates of the amount of crime that would be prevented by modest increases in sanction severity (J or S) can be used to decide whether such increases are appropriate. And, if these increases would result in the prison population's exceeding available capacity, incapacitation analysis can help to decide whether the long-term cost of increasing prison space is justified.

Of course, incapacitation effects are not the only factors to be considered in such decisions. In addition to temporarily restraining offenders, incarceration serves such other sentencing objectives as deterrence, rehabilitation, and punishment. Although the effects of incarceration on crime rates through these other mechanisms has yet to be established, policymakers must clearly make some assumptions about their effects in establishing sanction policy.*

Another useful role that incapacitation analysis can play is in deciding which offenders should be incarcerated. A sentencing policy that selectively assigns a higher likelihood of incarceration or longer terms to offenders with the highest offense rates will produce a greater incapacitation effect, for any given prison population, than one that assigns these sanctions randomly. This type of analysis, which we call selective incapacitation, is still fairly undeveloped.

Selective incapacitation, as we use the term, does not involve predictions about individual offenders. Specifically, it does not involve the kind of risk assessment involved in social/psychological

studies on which courts have traditionally relied for predicting
dangerousness. Rather, it rests on predictions of average criminal
behavior for categories of offenders, where the categories are defined
by such legally acceptable attributes as age, prior record, and con-
viction offense.* The predictions would be developed from a combina-
tion of self-report surveys, such as Offender Survey II, analysis of
individual criminal histories, and cohort studies such as that of
Wolfgang or Shannon.†

The potential effects of adopting a selective incapacitation
approach to sentencing can best be described by reference to Fig. III.1.
This figure plots incapacitation effect ($\eta$) versus prison population
for different sentencing policies. In the terminology of this figure,
a sentencing policy is simply a set of rules determining which offend-
ers are incarcerated, and for how long, for any given prison population
maximum. Determinate sentencing schemes or sentencing guideline
models currently provide such rules, loosely defined.

The horizontal dashed line, whose intercept is $V$, represents the
virgin offense rate, crimes that cannot be prevented by incapacitation
no matter how long sentences are made. (Even if the sentences of
convicted offenders are made very long, $I-V$ accounts for those offend-
ers who have never previously been caught). If only adults' sentences
are to be manipulated by the policy in question, then $V$ will be lower
to take into account the crimes of juveniles and adults who have never
been sentenced in adult court. The larger the pool of people excluded
from sentencing consideration, the lower $V$ will be.

* Of course, the delineation of attributes that are legally accept-
able for sentencing purposes is a matter which is continuously under
review by appellate courts. Such attributes as drug addiction and
employment record are currently considered acceptable for consideration
in sentencing decisions.

† Alfred Blumstein, Jacequeline Cohen, "Estimation of Individual
University, Pittsburgh, Pa., 1978. Marvin Wolfgang et al., Delinquency
W. Shannon, "A Longitudinal Study of Delinquency and Crime," in
Charles Wellford (ed.), Quantitative Studies in Criminology, Sage
Curve A represents the incapacitation effect for the theoretical optimal policy for any prison population. It maximizes $\eta$ by incarcerating the highest rate offenders. In this optimal policy everyone sentenced to prison has a higher $\lambda$ than everyone released. The shape of A is determined by the distribution of $\lambda$. The more skewed the distribution, the more curved A will be. The optimal policy represented by curve A can be achieved only with perfect knowledge of individual $\lambda$s.

Curve B represents the incapacitation effect for a given $P$ and a random sentencing policy: no correlation between individual sentence lengths and $\lambda$. The shape of B is determined by the mean value of $\lambda$, averaged across all offenders. The higher the mean value of $\lambda$, the more curve to B.

Curve C, labeled "best feasible policy" represents the maximum incapacitation effect that can be achieved for a given $P$, given the system's ability to identify high rate offenders. If the prediction error is low, Curve C will approach A. If the prediction error is high, C will approach B.
Theoretically, any systematic sentencing policy can be superimposed on these curves. By comparing curves we can learn the potential payoffs from better identification of high rate offenders or from removing policy constraints that prevent their incarceration. The shapes of the curves and their relationship to each other are driven by the distribution of $\lambda$ and the prediction error. Selectivity in sentencing becomes more important as the skewness of the distribution of $\lambda$ increases, as prediction error goes down, or for low values of $P$.

The incapacitation analysis currently underway will attempt to generate such curves, along with an examination of the effects of specific sentencing constraints or systematic selection criteria. To generate these curves we use a variation of the Shinnar model, in which offenders are partitioned among a small number of offense rate categories. Aggregate effects will be determined by using the Shinnar model to estimate incapacitation effects for each category of offenders and combining the separate estimates based on the proportion of crime attributed to each offender category.

Some of the issues we will explore with the model include:

- **The effects of various maximum sentence lengths.** A pure selective incapacitation strategy would lead to a very long sentence for high rate offenders and no incarceration for the rest. An upper limit on the maximum sentence (such as 10 years) would reduce the potential effect. A very low maximum would push the results down almost to Curve C. We could test the sensitivity of outcomes to different upper limits.

- **The effects of mandatory minimums.** Mandatory minimums, to the extent they are not focused on offenders predicted to have high rates, also reduce the maximum effect that can be achieved with a given $P$.

- **Shielding effects of sentencing constraints.** We can determine the effect of any sentencing constraints that limit the court from imposing high sentences on predicted high rate offenders, such as policies allowing probation for the first offense or providing short maximum sentences for juveniles.
Our analysis will also examine the effects of focusing on different categories of offenders. A selective incapacitation policy might focus on all violent offenders, violent offenders and burglars, or just robbers and burglars. At the low end of the crime seriousness threshold, policymakers may choose not to reduce auto theft, larceny, or fraud for either "just deserts" considerations or to conserve scarce prison space. At the high end they may wish to exclude murderers and rapists because sentences predicated on their future risk would be less than that referred for "just deserts" reasons alone.

Because our research will be based on retrospective analyses of an incarcerated sample, it will not provide explicit sentencing guidance to judges or legislators. A special sample would have to be drawn explicitly for this purpose and the prediction accuracy of specific factors tested on a prospective basis. The development of such explicit offense rate predictions would be an expensive undertaking because of the need to develop an appropriate data base. Our analysis will provide a first step by determining the potential gains from selective policies.
Reports


Notes


Articles


