

1488271

LEIC

This LEIC FORUM series publicizes the findings of projects undertaken by the California

Department of Justice in collaboration with scholars from academic institutions across the nation.

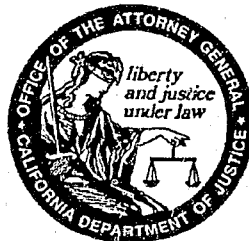
Through this collaborative program, the Department supports private academicians to undertake research on policy issues of current interest.

FORUM

CRIME CONTROL AND THE CRIMINAL CAREER

Executive Summary to
"Incapacitation Strategies and the Criminal Career"

Stephen D. Gottfredson, Ph.D.
and
Don M. Gottfredson, Ph.D.



California Department of Justice
Daniel E. Lungren, Attorney General

Division of Law Enforcement
Law Enforcement Information Center

CRIMINAL JUSTICE TARGETED RESEARCH PROGRAM

Between 1983 and 1992, the Attorney General administered the Criminal Justice Targeted Research Program within the Law Enforcement Information Center (LEIC) to increase the comprehensiveness and quality of criminal justice research in California,

The key goals of this effort were to:

- Make better use of the criminal justice data collected and maintained by LEIC;
- Forge stronger ties between state government and the research community; and
- Contribute to sound policy development in the field of criminal justice.

The Criminal Justice Targeted Research Program was an effort to achieve these goals. The fellows worked closely with LEIC staff, effectively blending their special expertise in research design and methodology with the technical expertise found in LEIC.

Stephen Gottfredson is Professor of Public and Environmental Affairs at Indiana University, where he also Chairs the Faculties of Criminal Justice, Law, and Public Safety. Previously, he has held the positions of professor and Chairman of the Department of Criminal Justice at Temple University, Executive director of the Criminal Justice Coordinating Council for the State of Maryland, and Director of Research for the Center for Metropolitan Planning and Research of The Johns Hopkins University (where he served also on the faculty of the Department of Psychology). His degrees are from the University of Oregon (B.A.) and The Johns Hopkins University (M.A. and Ph.D.); all are in psychology. He has written extensively in the areas of crime, delinquency, and criminal justice policy.

The views and opinions expressed by the author do not necessarily reflect those of the department or its officers and employees. This report is published as a public service to encourage debate and broader understanding of critical criminal justice policy issues.

147037

**U.S. Department of Justice
National Institute of Justice**

This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated in this document are those of the authors and do not necessarily represent the official position or policies of the National Institute of Justice.

Permission to reproduce this copyrighted material has been granted by

California Department of
Justice

to the National Criminal Justice Reference Service (NCJRS).

Further reproduction outside of the NCJRS system requires permission of the copyright owner.

CRIME CONTROL AND THE CRIMINAL CAREER

STEPHEN D. GOTTFREDSON, PH.D.

SENIOR FELLOW

ATTORNEY GENERAL'S TARGETED RESEARCH PROGRAM

DON M. GOTTFREDSON, PH.D.

PRESIDENT

JUSTICE POLICY RESEARCH CORPORATION

BACKGROUND

During the 1980's correctional populations in the United States experienced phenomenal growth.¹ Concomitant with the population explosion has been an explosion in costs: corrections now is among the largest of state expenditures.² Not surprisingly, the decade also saw renewed debate over the proper purposes of correctional treatment.³

Recent Panels of the National Academy of Sciences have reported evidence for the efficacy of rehabilitation and deterrence to be disappointing.⁴ As a result, the incapacitation of criminal offenders has tended to dominate criminal justice policy options of the 1980's and 90's -- and the concept of the "criminal career" has set the agenda for much of the nation's crime control research efforts.⁵

THE CAREER CRIMINAL PARADIGM

Several concepts are key to the criminal career research paradigm. *Participation* reflects the distinction between those who engage in crime and those who do not. *Frequency* of offending is the rate of criminal activity of those who are active. *Participation* (or "prevalence") and *frequency* ("incidence") give very different measures of criminal activity. The former is a measure of those who are criminally active, and the latter reflects numbers of crimes done by active offenders (usually expressed as a rate per year). Finally, the *seriousness* of criminal acts is seen to be critically important, as is the *career length*, or the length of time that an offender is criminally active.

These components of the criminal career paradigm suggest different crime control policy options. It is thought that participation may best be affected through prevention or very early intervention. Frequency, seriousness, and career length are thought best to be affected through attempts at *career modification*. Conceptually, criminal careers may be modified through deterrence, rehabilitation or treatment, or through incapacitation. The latter has been touted as holding most promise (at least in the public press).⁶

INCAPACITATION AND CRIME CONTROL

Incapacitation strategies are of two types: collective and selective. Under a collective incapacitation strategy, the same or very similar sanction would be applied to all persons convicted of common offenses, with the goal of decreasing the commitment of those offenses (by those persons) in the free community.⁷ Selective incapacitation strategies involve sanctioning based on predictions of future offending by individuals.⁸

CRIME CONTROL ASSUMPTIONS

Whether collective or selective in nature, incapacitation strategies rest heavily on several general assumptions:

o *Criminal activity is "patterned" with respect to types of behaviors.*

By this it is meant that offender criminal activity is not random, but exhibits some degree of consistency. An incapacitation strategy may be based on the assumption, for example, that confining a persistent property offender for a specified time will result in a decrease in property crimes committed.

o *The seriousness of offending changes in meaningful ways throughout the career.*

In general, it is held that offenders who commit crimes of a serious nature are more problematic than those who commit non-serious offenses. From an incapacitation standpoint, it would be desirable if the seriousness of offending was non-stationary. Indeed, the "common wisdom" is that offenders progress from less to more serious offenses as their careers advance. If this is so, then the early identification and incapacitation of career criminals not only would decrease crimes committed, but would inhibit the commission of increasingly serious crimes.

o *The rate of offending changes in meaningful ways throughout the career.*

Ideally, the rate of offending by those criminally active also would be non-stationary, and would increase (no doubt to some limit) throughout the career. Were this true, incapacitation also would have

the beneficial effect of inhibiting increasing numbers of offenses.

In short, both collective and selective incapacitation strategies rely fundamentally on assumptions about the *predictability* of criminal behavior. Tests of these assumptions have been impeded seriously by a lack of adequately reliable, comprehensive data on substantial samples of offenders followed for long periods of time. The study samples used in the present research have allowed us to test each of these fundamental assumptions.

STUDY SAMPLES

The primary group studied is over 6,000 men who were incarcerated in California prisons in the early 1960's.⁹ The group was chosen to reflect a random sample of all men in California's prisons at that time. General categories of data collected about these men in 1962 - 1963 include life history information, official institutional record information (for a random subsample of 1,299 persons), inmate questionnaire responses (from 3,652 men), and psychological test data (from 3,975 persons).

Follow-up data were collected for each of these men in 1988 (providing a 26 year follow-up period) with the help of the California Bureaus of Criminal Statistics (BCS) and Criminal Identification (BCID).

The sample of men for whom records were requested was divided randomly in half, in order to provide a study sample and a validation sample. There were 3,108 persons in the study sample, and 3,202 in the validation sample. Statistical analyses demonstrated no substantive differences between the 1962 study and validation samples, and no serious bias associated with sample attrition during the follow-up period.

The second sample used was drawn from the BCS's Longitudinal File, and consists of a more recent cohort of California offenders. All persons first arrested during calendar year 1980 (irrespective of the disposition of that arrest) were selected for study. Thus, at least 10 years of arrest information is available for each of the 157,936 persons studied. This sample was used to ensure that findings from the study of the earlier cohort -- particularly those concerning the patterning of offenses -- have relevance to the current offending population.

THE CLASS OF 1962

The class of 1962 has been active: they have been arrested well over 30,000 times since their release from that period of incarceration, and have been charged with several times that many offenses (since a man may be charged with more than one offense per arrest episode). Not surprisingly, this group of

men has cycled in and out of prison and jail: the busiest offender was incarcerated 28 times during the follow-up period.

What kinds of crimes have these men committed? This study relied upon an empirically-based typology of criminal offenses designed to model the way the people think about crimes.¹⁰

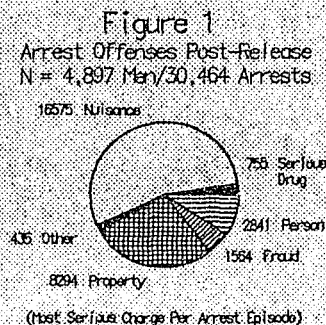
There are six categories of criminal offenses in this typology. One crime type consists primarily of "nuisance" offenses: parole and probation rules violations, gambling, use and possession of marijuana, disorderly conduct, drunken driving, etc.. By-and-large, these offenses are relatively non-serious (although potential consequences -- such as in drunken driving or the use of drugs -- can be very serious indeed).

The second category involves physical assault, personal harm, and interpersonal confrontation. The third represents theft, property damage or loss, and property crimes in general.

The fourth category represents crimes against the social order. In general, these are either crimes that are committed by an agent or agency in power (an employer, a real estate agent, a police officer, a manufacturer, a producer, a doctor, a public official), or social crimes (e.g., racism, the pollution of a water supply, the marketing of contaminated products, price-fixing, false advertising, or both).¹¹

Offenses in the fifth category all involve serious drug offenses: the sale or manufacture of heroin, cocaine, hallucinogens, or barbiturates and amphetamines. The final category of offenses all involve primarily fraud or deception.

Figure 1 describes -- in accordance with this typology -- over 30,000 crimes that these men have committed since release from the 1962 period of incarceration.

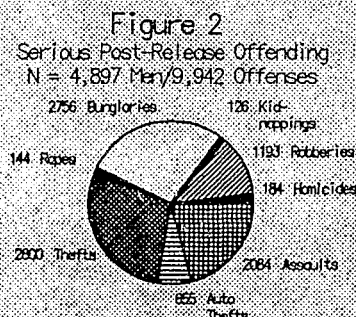


Well over half of all offenses charged are of the nuisance variety: such offenses include parole

and probation rules violations, drunken driving, possession or use of drugs, disorderly conduct, and gambling (as examples).

Property crimes also are common (most typically, burglaries, robberies and attempts, larcenies and attempts, and auto thefts).¹² Offenses against the person are proportionally infrequent, but unfortunately common: these include homicides, rapes, and assaults. Frauds include forgery and bad check offenses as well as a variety of others. Serious drug offenses, such as the sale or manufacture of large quantities of illegal substances, were rare for this group.

While nuisance offenses predominate the criminal behaviors with which this group has been charged, they also were charged with committing a large number of serious crimes. Figure 2 summarizes almost 10,000 non-nuisance offenses committed by these men since their release from the 1962 - 63 imprisonment.

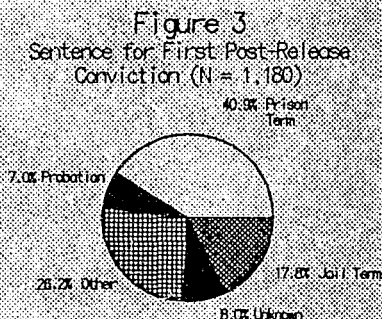


The System Response: Records provided by the California Bureau of Criminal Statistics were unusually rich and complete; and they provided far more information concerning the dispositions of offenses charged than commonly is the case.

Considering just the first charge post-release, 56.4% of the men were convicted for the offense, 22.7% were acquitted or had the charge dismissed, 2.1% were subject to some other action (such as being turned over to another jurisdiction), and in only 18.7% of the cases was the disposition unknown.

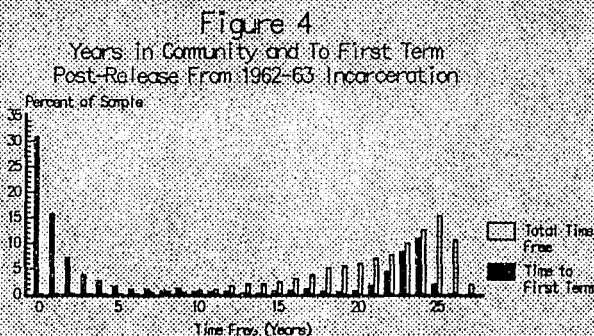
The typical sanction applied was a prison or jail term: 58.7% of those men convicted on their first post-release charge were reincarcerated (Figure 3). Seven percent were sentenced to a term of probation, and 26.2% were subject to some other sanction.¹³ For only eight percent of the cases was a sentence not identifiable given that a conviction was

noted. This general pattern of sanctioning is true irrespective of arrest episode.



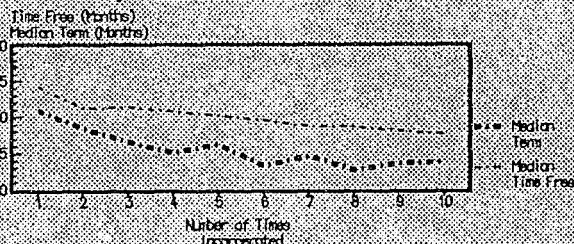
Although almost one-third of these men never were reincarcerated (31.3%), two-thirds did spend additional time under sentences in prison or jail, and nearly one man in five was reincarcerated at least six times. The average (median) number of reincarcerations is 1.68.

Time In/Time Out: Offenders who failed tended to do so quickly: over 30% of these men were reincarcerated within one year of release, and over half were reincarcerated within three years of release. Others, of course, were free for 10, 15, or over 20 years before experiencing another period of incarceration. Figure 4 summarizes time free until the first incarceration post-release from the 1962-63 imprisonment, and the total number of years that these men spent in the free community following that release.



Considering just those men who fail from time_n to time_{n+1}, the length of time free in the community decreases monotonically with n (Figure 5). Similarly, considering just those men incarcerated from time_n to time_{n+1}, the length of incarceration decreases with n.

Figure 5
Median Lengths of Imprisonment and Time Free By Number of Times Incarcerated



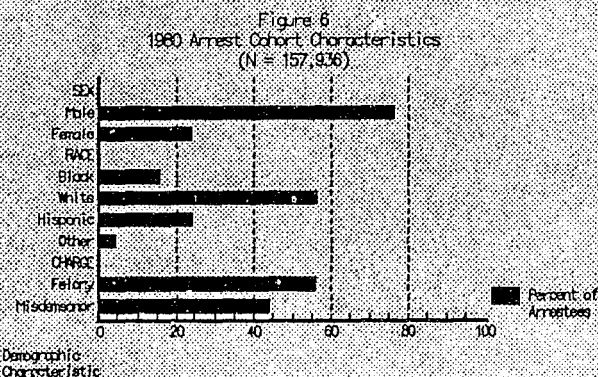
Rates of Offending: If all members of this sample are considered to be "active offenders," they experienced an average of .368 arrests per year, were in the community an average of 20.7 years, and were arrested an average of just over six times.

Considering just those offenders who experienced at least one arrest during the follow-up period, the yearly rate of offending (λ)¹⁴ increases to .447, the men were free just over 20 years in the community, and experienced an average of almost 7.5 arrests.

Restricting the sample just to men who experienced at least one period of incarceration post-release, the offense rate increases to .515, an average of just over 19 years were spent in the free community, and almost 8.5 arrests were experienced (on average).

THE CLASS OF 1980

The typical member of the class of 1980 is a young white male first arrested for a felony offense (Figure 6).¹⁵ The arrest resulting in a Longitudinal File entry most usually will be the only such experience.

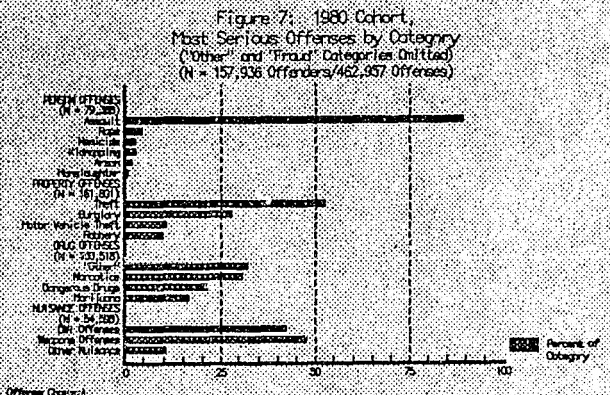


Still, the 157,936 arrestees in the 1980 cohort were arrested a total of 462,957 times during the

decade (the mean number of arrests is 4.83, while the median is 2.63). Further, they were charged with having committed a great deal of serious harm: If arrest statistics are to be believed, during the 1980s this group was responsible for some 1,976 homicides, 3,371 rapes, 70,639 assaults, 44,885 burglaries, 15,406 robberies, and 84,643 thefts.

The offense classifications used by the Bureau of Criminal Statistics differ from those used in our coding of the 1962 sample offender rap sheets. We recoded the felony and misdemeanor offense codes used by the BCS in an attempt to approximate the offense typology presented above.

Because the Longitudinal File necessarily is less detailed than are rap sheets, some differences in the resulting typology should be noted. First, the "nuisance" category is, for the 1980 cohort, substantially less detailed. Second, we were unable to distinguish between so-called "nuisance" drug offenses (e.g., the possession and/or use of marijuana) from more significant drug offenses (e.g., the sale of large quantities of controlled substances). Accordingly, the "drug" and "nuisance" classes differ dramatically between the two typologies. All drug offenses ("nuisance" and otherwise) are classed together for the 1980 cohort, and the "nuisance" class is reduced proportionally. Figure 7 summarizes, using the 1980 cohort offense typology, the criminal activity of this group over the decade.



INCAPACITATION AND CRIME CONTROL

As noted in an earlier section, incapacitation strategies are of two types: collective and selective. Under a collective incapacitation strategy, the same or very similar sanction would be applied to all persons convicted of common offenses, with the goal of decreasing the commitment of those offenses (by those persons) in the free community. Selective incapacitation strategies involve sanctioning based on predictions of future offending by individuals.

Whether collective or selective in nature, incapacitation strategies rest heavily on the following general assumptions:

- o *Criminal activity is "patterned" with respect to types of behaviors.*
- o *The seriousness of offending changes in meaningful ways throughout the career.*
- o *The rate of offending changes in meaningful ways throughout the career.*

In short, both incapacitation strategies rest on assumptions about the predictability of criminal behavior.

We turn now to an empirical assessment of each of these assumptions. Discussion in this and subsequent sections is based on analysis of the 1962 offender samples: We will return to the 1980 arrest cohort later, to determine if selected of our findings generalize to a more recently offending population.

Can We Predict? Results of prediction modeling efforts compare favorably with those of similar studies, and effect magnitudes are comparable to or greater than those generally observed.¹⁶

For example, Table 1 summarizes efforts to predict the number of arrests to desistance.

Table 1
Regression of Number of Arrests to Desistance on Selected Predictors

Predictor	B	Beta	t
Priors	1.115	.270	11.02***
Age	-0.104	-.144	- 6.39***
Drugs	-2.155	-.154	- 7.94***
Serious	-0.015	-.058	- 2.92**
Free	-0.899	-.062	- 3.18**
PriorsP	-0.413	-.085	- 2.37**
Type	-0.706	-.050	- 2.31*
Alias	0.343	.046	2.31*
Constant	9.976		15.51***

$R^2 = .159$; $F(8,2423) = 57.14$, $p < .001$.

Notes: *** $p < .001$. ** $p < .01$. * $p < .05$.

Significant predictors include the number of prior periods of incarceration experienced, age (at imprisonment in 1962-63), history of opiate use, a rating of the seriousness of behavior of the commitment offense, an arrest-free period of five years or more prior to the period of incarceration served in 1962-63, the number of prior periods of *prison* incarceration experienced, the type of commitment to the 1962-63 incarceration, and the number of aliases used by the offender. All independent variables discussed are statistically significant, as is the entire

model, which accounts for 16% of the variance in the number of arrests experienced.

Not surprisingly, but important from a public safety perspective, we cannot predict the seriousness of the first offense committed post-release at all (Table 2). Although the seriousness score of the commitment offense and family criminal record are statistically significant predictors and the model is statistically significant, it has little *practical* significance: less than one percent of the variance in seriousness of subsequent offense is accounted for.

Table 2
Regression of Seriousness Score of Most Serious Charge, First Post-Release Arrest Episode, on Selected Predictors

Predictor	B	Beta	t
Serious	-0.045	-.065	- 2.90**
Family	-1.699	-.051	- 2.27*
Constant	38.285		33.67***

$R^2 = .007$; $F(2,1999) = 6.81$, $p < .001$.

Notes: *** $p < .001$. ** $p < .01$. * $p < .05$.

Table 3 summarizes efforts to predict lambda for all offenders in the sample. Significant predictors include the number of prior periods of incarceration, age (with a negative effect -- older offenders have lower lambdas),¹⁷ history of opiate use, number of aliases, and a commitment offense of the nuisance variety. The model accounts for 12% of the variation in lambda and is statistically significant.

Table 3
Regression of Lambda (All Offenders) on Selected Predictors

Predictor	B	Beta	t
Priors	0.790	.229	11.13***
Age	-0.012	-.206	-10.23***
Drugs	-0.151	-.129	- 6.37***
Alias	0.032	.050	2.49**
InstN	0.054	.044	2.20*
Constant	0.626		14.99***

$R^2 = .116$; $F(5,2416) = 63.62$, $p < .001$.

Notes: *** $p < .001$. ** $p < .01$. * $p < .05$.

On validation, all models suffered shrinkage (as is to be expected), but some were rather more robust than others. In particular, it is to be noted that the prediction of lambda -- the rate of offending -- is among the least robust of those examined.

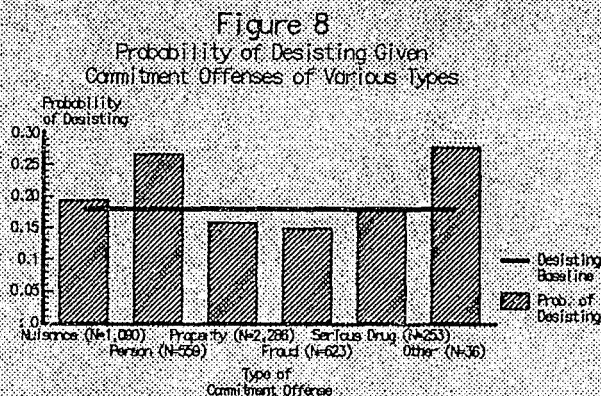
Summary: While the power of the prediction models developed meet or exceed those commonly found in similar studies, predictive power still may best -- and most politely -- be called "modest." No model developed on the construction sample performed substantially better on validation than did a simple Base Expectancy scale developed in the 1960's (on a very simple criterion).¹⁸

Is Criminal Activity Patterned? For evaluation, both incapacitation strategies depend strongly on the concept of "patterned" criminal activity.¹⁹ By this it is meant that offender criminal activity is not random, but exhibits some degree of consistency. For example, an incapacitation strategy may be based on the assumption that confining a persistent property offender for a specified time will result in a specified decrease in property crimes committed.

Unfortunately, available research evidence does not provide strong support for the specialization assumption.²⁰ Although some evidence of specialization commonly is found, the overwhelming weight of evidence is strongly supportive of versatility or generality of offending.

Using the offense typology discussed earlier, we have found somewhat stronger support for the specialization hypothesis than is typical. Irrespective of offense episode considered, like-offense transitions all are statistically significant, and "summary measures of specialization" are within bounds commonly observed in related studies.²¹

We prefer a novel (but related) way of looking at the question -- one that examines transition probabilities relative to base rate considerations.

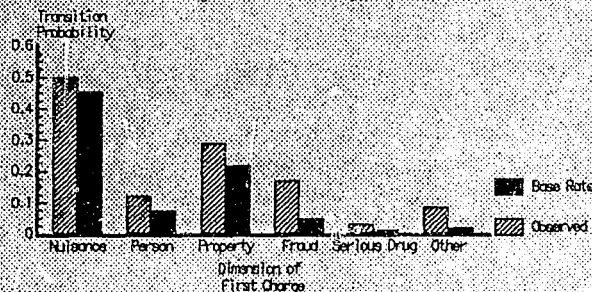


Consider Figure 8 as illustration. The figure summarizes the probability of not experiencing any new arrest by type of commitment offense. Nuisance and Serious Drug offenders desist from criminal activity at the average rate for the sample. Those who offended against persons were significantly more

likely to desist than the sample as a whole, while those who offended against property or were involved in frauds were significantly less likely to desist from crime.²²

Figure 9 directly addresses the question of specialization. It summarizes diagonal cell transition probabilities (relative to the base rate probabilities given that a next offense occurs) for the commitment offense and the first charge post-release.

Figure 9: Transition Probabilities
Commitment Offense and First Charge
(First Charge Base Rates For Comparison)
Diagonal Cells Only



Like-offense transition probabilities each are elevated relative to base-rate probabilities, and -- although not summarized in this figure -- off-diagonal transitions (representing versatility) are depressed relative to base-rates.²³

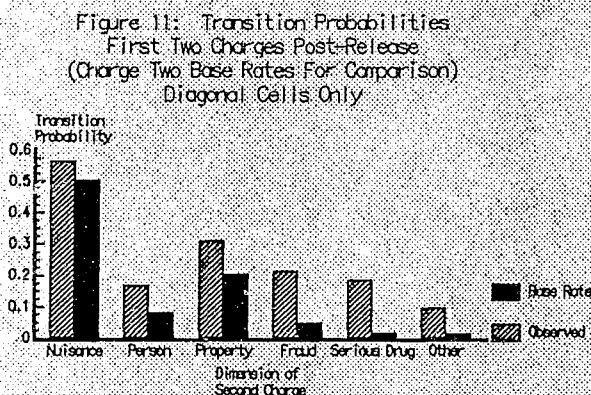
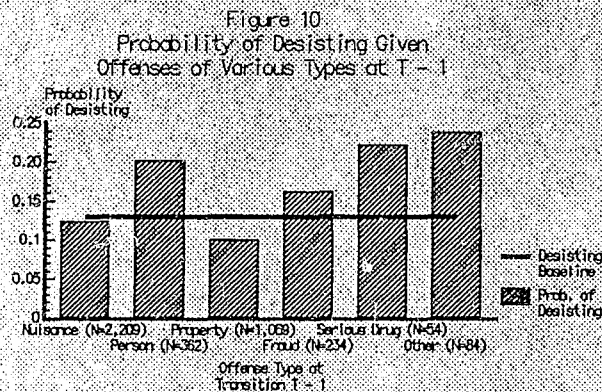
This figure shows one thing very clearly and dramatically: The most likely transition at time *t*, given any type of charge at the time of commitment (*t*-1), is to a nuisance offense. The next most likely occurrence is to a charge of the same type (e.g., property to property), but the extremely high base-rate probability associated with nuisance offending simply overwhelms the specialization effect.

Analysis of this particular transition may be misleading, because it compares charges for which the men were convicted and incarcerated with only the first offense charged post-release. It seems highly likely that offenses for which the men were incarcerated in 1962-63 may not be typical of offenses committed or alleged to have been committed; they probably are more serious.

Accordingly, generosity to the specialization hypothesis requires attention to analysis only of charges subsequent to release from the period of confinement defining the cohort for this study.

Figures 10 and 11 provide these analyses, and show little in the way of substantive difference from the conclusions examined above. Differences noted are: Those committing a fraud at first offense post-release do not significantly differ from the total with

respect to the probability of desisting from crime, while both serious drug offenders and "other" offenders are significantly more likely to desist (Figure 10); and probabilities appear higher for serious drug/serious drug transitions (Figure 11) than discussed previously. All other substantive conclusions remain the same.



Does Specialization Change with Transition? From the perspective of an incapacitation strategy, one would hope that specialization would increase over time. We did observe a very modest linear increasing trend for some types of transitions, but not for others. Although the trends are statistically significant, the slopes are exceedingly small.²⁴ For all practical purposes, specialization does not change with increases in transitions.

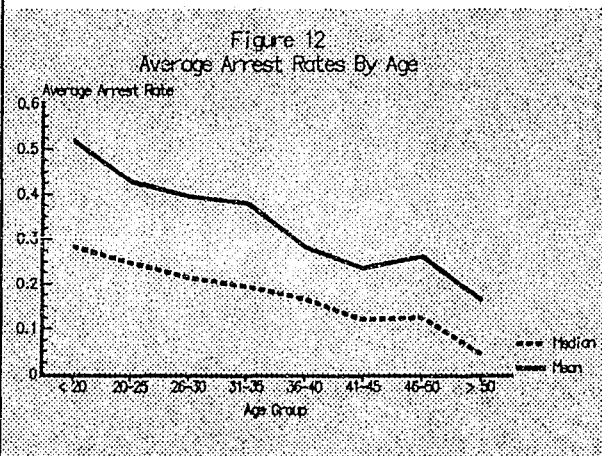
The Question of Offense Mix Another way of considering the specialization vs. versatility in offending question is through examination of the mix of offenses committed. For example, a person who completely specialized in property crimes would commit those and only those types of crimes. Similarly, a person who only offended against persons could be considered to specialize in crimes against the person.

When offenders are grouped in terms of the mix of offenses they committed subsequent to release from incarceration, almost 28% are found to be complete specialists -- that is, they were subsequently charged with only one type of offense. Two offense mixes are quite common: nuisance and property offending, and nuisance, person, and property offending. Other mixes were not likely to occur (e.g., person and fraud).

Among "specialists," so defined, the bulk (69%) specialize in nuisance offending. Seventeen percent specialize in property offenses, 9% in offenses against persons, and about 5% specialize in frauds. Moreover, considering all offenses committed by "specialists," the vast majority (82%) are of the nuisance variety.

Finally, it might be argued that "specialists" are important because they tend to commit offenses at a high rate. In this sample, however, specialization is negatively correlated with the rate of offending (that is, "specialists" have the lowest rates of offending, and "generalists" the highest).

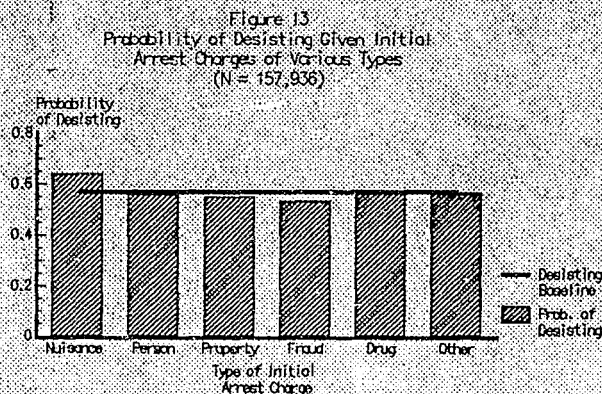
Does the Rate of Offending Change in Meaningful Ways as the Career Progresses? A brief answer is possible: Yes, but not in a fashion that advantages incapacitation strategies (Figure 12). The rate of offending declines dramatically as offenders age: the rate for youthful offenders (25 and under) is about three times that for older offenders (50 and over).



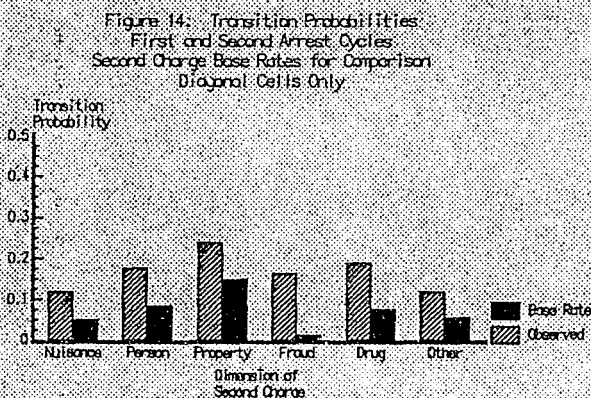
Does the Seriousness of Offending Change in Meaningful Ways as the Career Progresses? Again, an unfortunately brief answer to this question seems possible based on this examination of the careers of 6,000 offenders: No. The average seriousness score of offenses committed is invariant over offense episodes.

ARE FINDINGS CONCERNING PATTERNS OF OFFENDING RELEVANT TO THE CURRENT POPULATION?

We believe that they clearly are. Earlier, we noted that the initial arrest (which results in an entry in the Longitudinal File) most typically is the only arrest noted in the File: *57% of this cohort experienced only the initial arrest over the ten(plus) year observation period.* As described for the 1962 samples, those whose initial arrest was for a nuisance offense desist at a higher rate than for the cohort as a whole (Figure 13). Unlike our previously reported finding, however, all other cohort members (irrespective of the type of initial charge) desist at a rate indistinguishable from the baseline rate.



Findings concerning "specialization" also replicate: *The most likely occurrence at time $t+1$, given any offense type at time t , is desistance. Failing this, the next most likely occurrence is an offense of the same type as the first* (Figure 14).



When offense transition matrices are examined, all diagonal cells are statistically significant by tests of the Adjusted Standardized Residual, and all off-diagonal cells either are not statistically significant, or are statistically significant but negative

in sign (suggesting transitions that are not likely to occur). This same pattern of findings obtains irrespective of the transition sequence examined.²⁵ Finally, we should note that the slight trends for increasing "coefficients of specialization" observed in the 1962 sample also are replicated in the 1980 cohort. Again, however, the slopes are so slight as to be substantively meaningless.

INCAPACITATION STRATEGIES: THE WISH LIST AND THE REALITY

Three related features of the state of nature desirable from the standpoint of incapacitation strategies involve prediction, offense specialization, and characteristics of arrests and of their rates when persons are observed over time. If incapacitation strategies are to be effective, the behaviors of offenders (and of the criminal justice system) must be reasonably predictable.

The predictions required usually are of arrests or convictions for specific crime types, and therefore could be made more easily and with a greater degree of validity if offenders tend to specialize in the types of crimes committed. Or, at any rate, the nature of "crime switching" (that is, of transitions from one offense type to another) must be reasonably predictable; and it would be helpful if expected transitions are to a more serious crime type.

Arrest or conviction rates also must be reasonably predictable, and it would be desirable that these tend to be constant or increasing. Further, it would be helpful to incapacitation strategies if the persons classified as "specialists" have higher arrest rates than those classified as "generalists."

A simple and straightforward incapacitation strategy could be formulated if (a) both the termination of offending and the rate of committing crimes could be predicted with confidence, (b) the rate of doing crime was constant or increasing, and (c) there was a high degree of specialization in crime types committed (or, if the tendency to specialize increases with time). Thus, for implementation of a selective incapacitation strategy, it would be helpful if we could identify future high rate offenders who specialize in serious crimes (with both specialization and rates of crime commission constant or increasing over time).

A more complex strategy could be formulated if the termination from criminal activity and the rate of committing new offenses could be predicted reasonably well, if the distribution of the rate of new crimes (arrests, charges, or convictions) over time were known with some precision, and if (absent a high degree of specialization) probable crime

switching could be defined with a reasonable degree of confidence.

This section considers evidence from this study on these issues so that the feasibility of developing viable incapacitation strategies may be considered.

Incapacitation and Prediction

The prediction models developed provide very typical and quite modest estimation of a variety of outcomes relevant to incapacitation strategies. When tested on a second sample to provide better estimates of true validity, most models hold up quite well, although with an expected small amount of "shrinkage" in validity coefficients. Still, the validity of the predictions must be described as modest at best.

Incapacitation and Specialization

The problem of specialization vs. versatility in offending was considered in terms of a classification of offenses into empirically-derived groups based on how people consider crimes to be related. It may be assumed that if we had used a finer classification (that is, used more categories of offenses) we would have found less specialization. On the other hand, had we combined groups and used fewer classifications of offenses, we would have found more. If, however, the classifications are accepted as a reasonable and useful middle ground that appears to represent some cognitive reality, then four points must be concluded.

First, specialization in offending was observed; but the coefficients describing the degree of specialization -- although higher than those found in other studies -- were (like the predictive validity coefficients) quite modest. Second, a high degree of versatility was observed, which aptly may be described as overwhelming specialization. Third, the most probable next arrest (if indeed one is to occur) is for an offense either of the nuisance variety or of the type preceding this arrest. This is true irrespective of the offense episode examined. Fourth, such specialization as was observed increases very little with successive transitions.

Incapacitation and Characteristics of Lambda

Arrest rates were found to be inversely related to specialization: "Specialists" had lower arrest rates than did "generalists." Further, arrest rates decreased precipitously with age -- one of the best predictors of those rates in the context of the variables considered in this study. The observed decline of arrest rates with age is consistent with the results of much other research.²⁶

THE FEASIBILITY OF INCAPACITATION STRATEGIES

A strong argument against the feasibility of collective incapacitation strategies based on the of-

fense of conviction is given simply by the transition matrices considered earlier. For example, locking up "burglars" to prevent burglaries may be expected first of all to confine a substantial number of persons who will commit no future offenses; second, to prevent future nuisance offenses; and only thirdly to prevent burglaries. Confining "robbers" similarly may be reasonably expected to prevent some robberies, but mainly it will prevent nuisance offenses and confine some persons who do not -- at least on incapacitation grounds -- warrant confinement.²⁷

Similarly, data presented in relation to the predictive requirements of a selective incapacitation strategy provide little support for that orientation. Rates of arrest or of conviction can be predicted, but not well. Rates of arrest for person offenses -- a most likely target for selective incapacitation strategies -- can be predicted, but even less well.

Rates of arrest are inversely related to the degree of specialization, so the small specialist group is less apt to be arrested at a high rate. Specialization increases very little with age, and not at all for the crime groups most likely to be targeted in a selective incapacitation strategy.

Finally, arrest rates decline with age. For a century and a half it has been known that "participation" declines with age.²⁸ Data reported here show that arrest rates for active adult offenders also decline with age.

It is apparent that those advocating selective incapacitation as a strategy for the more efficient or effective use of criminal justice resources will have many serious obstacles to overcome even if ethical arguments surrounding the issue (considered briefly in the next section) are set aside. The state of nature -- of offense behavior and criminal justice response -- does not appear conducive to the effective development of such strategies.

*ETHICAL CONSIDERATIONS*²⁹

The serious ethical questions raised by the selective incapacitation concept are of two types. One set of issues focuses on the consequences of errors of prediction. The other group of concerns addresses more basic questions about the proper purposes of sentencing and correctional practice. Taken together, these issues lie at the heart of a fundamental conflict between values of fairness and equity in sentencing and the values of utilitarian efforts at societal protection.

Since predictions always must be imperfect, two types of errors always will be made; and this is the case regardless of the basis of the predictions. The first type, called false positives, are persons mistakenly predicted to be good risks. For these per-

sons, a policy of selective incapacitation will fail to provide the public protection sought. False negatives, on the other hand, are "false alarms" -- persons mistakenly predicted to be recidivists or to commit crimes at a high rate. Under a selective incapacitation strategy, these persons would be imprisoned for crimes that in fact never would be committed.

The resulting dilemma for correctional policy is posed by the conflict between the offender's right not to be a false negative -- and kept in prison unfairly and unnecessarily -- and the citizenry's right not to be victimized by a false positive. The false negative problem has received the most attention from critics on ethical grounds.

Given current levels of predictive accuracy, strategies of selective incapacitation would subject large numbers of persons to increased terms of confinement as a result only of their misclassification. Further, evidence concerning patterns of offending strongly suggest that small reductions in any targeted crime(s) would have to be considered in the context of large expenditures that principally would (a) unnecessarily confine false positives, and (b) prevent nuisance offenses.

The debate also addresses more fundamental issues of sentencing and correctional treatment. Should people be sent to prison for deserved punishment or for utilitarian purposes? The latter include any purposes with a crime control intent. All such purposes -- including incapacitation -- require predictions. The conflicting ethical theory of just desert asserts that it is unfair to punish for harms expected but not yet done -- that is, for expected crimes that might never be committed. Moreover, this ethical position requires that punishments must be similar in severity for offenders convicted of similar crimes with similar culpability. The basic focus of this theory is on blameworthiness, and critics of selective incapacitation have pointed out that some predictive information used may have nothing to do with the blameworthiness of the offender; hence, they should not be used in determination of the penalty.

IS PREDICTION ACCURATE ENOUGH?

We have discussed the predictive validities shown in this study, and the level of validity to be expected from each of the models described, as modest. The levels of predictive accuracy in the criminological prediction literature generally are aptly described by that term, or, perhaps more accurately, as rather low.³⁰ There is no escaping the question of whether statistically based prediction tools such as discussed in this report are accurate

enough to justify their use in policy formulation or practice.

Some scholars and practitioners argue against the use of prediction in any case on ethical grounds alone. This is true of a strict just desert argument, in which prediction may be seen as properly irrelevant to decisions made about criminal offenders. However, if aims of crime control in sentencing and correctional practice are thought ethically permissible, then prediction must be regarded as central to the attainment of those ends. This is the case even if it is believed that crime control purposes may be sought but only within limits of punishments justly deserved.³¹ Prediction is a central problem to the extent that crime control objectives are believed to be permissible in the formulation of sentencing or correctional policies.

Part of the answer to the question of whether statistical prediction methods are accurate enough to justify their use depends on how the resulting tools will be used. Over a decade ago, it was reported that "the data accumulated to date on criminal careers do not permit us, with acceptable confidence, to identify career criminals prospectively or to predict the crime reduction efforts of alternative sentencing proposals."³²

In respect to a study that directly proposed selective incapacitation as a possible panacea for correctional problems, it has been reported that "... for purposes of selective incapacitation, where predicted high rate offenders will be subject to longer prison terms than all other offenders, much better discrimination of the high-rate offenders would seem to be required."³³

Nothing from this quarter-century study of the careers of over 6,000 adult felons would lead to a different conclusion. Proposals for dramatic change in sentencing and incarceration policies based on individual level prediction studies are at best premature. Prediction of such low validity as thus far demonstrated cannot justify the policy changes proposed under the banner of selective incapacitation.

Prediction tools of equal validity can, however, be used appropriately for other purposes, and we will try to explain this argument next. In doing so, we will focus on the two types of errors to be made in any predictive selection problem and on ethical considerations involved in the type of policy changes involved in the proposed use of prediction tools.

THE PREDICTIVE SELECTION PROBLEM³⁴

Predictive selection decisions require the specification of cut-off scores. For example, in selective incapacitation strategies, values of the pre-

dictor score at or above which an individual is expected to fail, or commit crimes at a high rate, must be identified. Similarly, values of the criterion variable at or above which a case is considered an actual failure and below which persons are considered to have succeeded must be specified. Thus, at or above a selected cutting-score on the predictor scale distribution, we predict failure and select accordingly. Below that cutting-point, we predict success. The value decided upon for the predictor cut-off determines what is known as the selection ratio: This is the ratio of the number of persons to be selected to all persons available for selection. Irrespective of the prediction made, some persons would fail, and others would succeed: The ratio of these is called the base rate.

Simultaneous consideration of the base rate and the selection ratio gives rise, necessarily, to the four potential consequences to any predictive selection decision. There are two types of errors to be made: We will predict some persons to fail who in fact succeed (false negatives), and we will predict some persons to succeed who in fact will fail (false positives). There are also two types of "hits" or correct predictions to be made. There are the persons predicted not to fail who in fact do not; these are known as negative hits. Some persons predicted to fail will in fact fail; these are called positive hits. The two types of correct predictions and the two types of errors exhaust the possible outcomes of the predictive selection problem.

Placement of the selection ratio and the definition of the base-rate determine (within the expectation of the marginal distributions) the errors of each type to be made. In selective incapacitation proposals, the cutting score will be selected somewhere above the mean of the risk distribution (or else the high risk cases would not be selected). The criterion cutting score would lie above the mean of the distribution representing subsequent criminal behavior (or else the scheme would call for selectively incapacitating average or below average offenders).

As mentioned, the placement of the cutting scores (base rate and selection ratio) will determine the relative numbers of false positives and false negatives experienced. The number of errors to be made cannot be manipulated in this way -- only the relative proportion of the two types may be changed.³⁵ Thus, either false positives or false negatives may be increased or decreased, but always at the expense of the other; one has only to change the cutting score(s).

Clearly, neither error is desirable in the context of selective incapacitation. False negatives must be abhorred from the ethics of desert, false positives

from the ethics of utility. Which error is more important is a question that may never be settled in moral philosophy or in public policy. Moreover, it may well be that the two types of error are not equal in either human or monetary costs.

SELECTIVE DEINSTITUTIONALIZATION

Consider instead a policy not of selective incapacitation but one of "selective deinstitutionalization." Assume the population of interest to be persons already incarcerated (or to be incarcerated) under any existing incarceration policy. Suppose that we wish to reduce the institutional population -- perhaps as a result of court mandate. Obvious selection criteria for the decision as to who not to incarcerate could include the risk of recidivism, or the risk of serious harms, or the risk of serious harms to be committed at a high rate.

Now the selection criterion (the cutting-score on the risk measure) would lie below the mean of the distribution of risk scores. That is, we wish to select those inmates or otherwise prison-bound offenders who appear to represent the least risk of repeated offending. Since we seek to identify the best risks, the criterion cutting score also likely would lie below the mean. Just as before, the trade-off of false positives and false negatives could be manipulated by moving the cutting-scores for the risk measure up or down. For any given value of the criterion cutting score, the value of the risk cutting-score will determine size of the selected group but also whether more false positive or false negative errors will be made.

Errors, Ethics, and Policy

The ethical consequences of errors made under the strategy of selective incapacitation and that of selective deinstitutionalization are quite different. In a selective incapacitation strategy, the effect of a false negative is to deny liberty based on faulty prediction. The aim is to minimize false positives; that is, it is sought to minimize the failure to select those who in fact pose a substantial risk of continued criminal behavior. And, unless predictive accuracy can be increased, reducing false positives can be done only at the expense of increasing false negatives.

In the selective deinstitutionalization scenario, it also is the case that false positives will be punished more harshly than will those selected for release or non-incarceration based on the selection device. The critical distinction is that they will not be punished more harshly than they would have been had the device -- and prediction -- not been used. Rather than falsely treating some persons more harshly than is believed to be justly deserved, this proposal treats some persons less harshly than that and treats some persons no more harshly than that.

A selective incapacitation proposal and a selective deinstitutionalization proposal differ substantially with respect to proposed policy changes and the consequences of these. Proponents of selective incapacitation clearly suggest that a proper purpose of incarceration is the prevention of crime by removal of offenders from society in order that they can not engage in criminal activity in the community. The suggestion then has been made for a radical change in sentencing and imprisonment policy, based in part on the claims made for the accuracy of prediction.

The selective deinstitutionalization proposal relies on no presumption of a need for radical change in sentencing policy in general. The strategy could be adopted even if it is assumed that all purposes for sentencing as currently practiced are equally valid. The scheme does propose that risk -- and an incapacitation purpose -- should be a primary consideration in decisions aimed at prison population reduction.

There is a fundamental difference between the two situations, and this difference requires clarification of the earlier question: Is prediction currently accurate enough to be useful? When the question is stated in this way, the answer can only be yes and no. Prediction in criminal justice settings clearly is not sufficiently accurate to form the basis of social policy. Proposals for dramatic changes in policy and practice that rely on the accuracy of prediction are premature at best.

Once social policy has been set, however, prediction clearly is sufficiently accurate to be useful, and the decisions made will be more accurate if statistically based prediction tools are used.³⁶ Even when validity is quite low, it has been demonstrated that such selection devices provide significant improvements in accuracy.³⁷

The selective deinstitutionalization concept is believed to meliorate the ethical concerns discussed and to hold promise for reducing prison crowding without endangering the public.

NOTES

¹ California's state prison population increased over 200% during that period (Webb, G. "Corrections program called 'utter failure.'" San Jose Mercury News, May 9, 1991, pg. 1-C).

² In California, prison and jail construction needs alone were estimated at almost \$12 billion for the

period 1978 - 1990 (Tuma, D. "The American Way of Punishment -- In Search of a New Path. California Bureau of Criminal Statistics (mimeo). Sacramento, CA: Bureau of Criminal Statistics, Nov., 1990 (Table 1)). Operating costs also are staggering: California would spend some \$8.2 billion annually (in FY 1989/90 dollars) to operate the adult and juvenile correctional programs reported to be necessary (Tuma, op cit., pp. 4 - 5).

³ Gottfredson, S.D., and Taylor, R.B. The Correctional Crisis: Prison Populations and Public Policy. Washington, D.C.: National Institute of Justice, 1983; Gottfredson, S.D., and Taylor, R.B. Public policy and prison populations: measuring opinions about reform. Judicature, 1984, 68(4-5), 190-201.

⁴ Blumstein, A., J. Cohea, and D. Nagin, eds. Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates. Washington, D.C.: National Academy of Sciences, 1978. Sechrest, L., S. White, and E. Brown, eds. The Rehabilitation of Criminal Offenders: Problems and Prospects. Washington, D.C.: National Academy of Sciences, 1979.

⁵ Blumstein, A., et al., eds. Criminal Careers and "Career Criminals." Washington, D.C.: National Academy of Sciences, 1986.

⁶ "To Catch a Career Criminal," Newsweek, November 15, 1982, 77; "Cutting Crime Tied to Jailing of the Busiest Criminals," The New York Times, October 6, 1982; "Key to Criminals' Future: Their Past," U.S. News and World Report, October, 1982; "Making Punishment Fit Future Crimes," The New York Times, November 14, 1982, p. E-9.

⁷ Cohen, J. "Incapacitation as a Strategy for Crime Control: Possibilities and Pitfalls," In Tonry, M., and N. Morris, eds. Crime and Justice: An Annual Review of Research. Volume 5. Chicago: University of Chicago Press, 1983, pp. 1 - 84.

⁸ Greenwood, P., and Abrahamse, A. Selective Incapacitation. Santa Monica, CA: Rand Corporation, 1982.

⁹ These data were collected for research supported by Public Health Service Grant CM 823 from the National Institute of Mental Health. See Gottfredson, D.M., and Ballard, K.B., Jr., Prison and Parole Decisions: A Strategy for Study. Final

report to the National Institute of Mental Health, 1965.

10 Gottfredson, S.D., Warner, B.D., and Taylor, R.B. "Conflict and Consensus in Justice System Decisions," in N. Walker and M. Hough (Eds.), Sentencing and the Public. Cambridge Series in Criminology. London: Gover, 1988.

11 An insufficient number of these occur in these samples to permit analysis of this category.

12 We recognize that robbery is considered an offense against persons in most offense typologies. The typology described here, however, was empirically derived from the seriousness assessments of very large samples of persons, and has been demonstrated to have utility for diverse groups of decision-makers (e.g., police officers, judges, etc.).

13 These included (most typically) a suspended sentence, the imposition of fines or restitution orders, etc., but also could include the revocation of parole, or an order such as "jail or fine." Accordingly, the number actually incarcerated may exceed the figures cited here. If a term to prison or jail resulted for whatever reason, that is recorded elsewhere in the data file.

14 The figures discussed are not lambda in the sense used by Cohen (Cohen, J. "Research on Criminal Careers: Individual Frequency Rates and Offense Seriousness." Appendix B in A. Blumstein et al., eds., Criminal Careers and "Career Criminals." Washington, D.C.: National Academy of Sciences, 1986, pgs. 292-449.), who adjusts Mu (the rate of arrest) by an estimated likelihood of arrest given the commission of a crime. We do not have those estimators. Hence, our lambda is Cohen's Mu.

15 Because the Longitudinal File is based on the Adult Criminal Justice Statistical System (ACJSS), arrests of juveniles are underrepresented seriously. The modal offender in this sample is 19 years old, but age ranges from 10 to 81 years. Sixty percent of the sample members are 24 or younger.

16 For a review of many such studies, see Gottfredson, S., and D. Gottfredson, "Accuracy of Prediction Methods," in A. Blumstein et al., eds., Research in Criminal Careers and "Career Criminals." Vol. 2, Washington, D.C.: National Academy of Sciences, 1986.

17 As we will show later, lambda decreases monotonically with age.

18 Actually, this is not an unexpected finding. Reasons why this may be expected to occur are given in Gottfredson, S.D. Prediction: An Overview of Selected Methodological Issues. In Gottfredson, D. and Tonry, M. (eds.), Crime and Justice: An Annual Review of Research. Volume 9: Prediction and Classification. Chicago: University of Chicago Press, 1987.

19 See, for example, Cohen, J. "Research on Criminal Careers: Individual Frequency Rates and Offense Seriousness." Appendix B in A. Blumstein et al., eds., Criminal Careers and "Career Criminals". Washington, D.C.: National Academy of Sciences, 1986, pgs. 292-449.

20 Cohen, J. op cit., Wolfgang, M., R. Figlio, and T. Sellin. Delinquency in a Birth Cohort. Chicago: University of Chicago Press, 1972; Farrington, D. "Longitudinal Research on Crime and Delinquency," in N. Morris and M. Tonry, eds., Crime and Justice: An Annual Review of Research. Chicago, University of Chicago Press, 1979; Farrington, D. "Age and Crime." In M. Tonry and N. Morris, eds., Crime and Justice: An Annual Review of Research. Vol. 7. Chicago: University of Chicago Press; Blumstein, A., J. Cohen, and D. Farrington. "Criminal Career Research: Its Value in Criminology." Criminology, 1988, 26, 1 - 35; Blumstein, A., J. Cohen, and D. Farrington. "Longitudinal and Criminal Career Research: Further Clarifications." Criminology, 1988, 26, 57 - 74; Farrington, D., H. Snyder, and T. Finnegan. "Specialization in Juvenile Court Careers." Criminology, 1988, 26, 461-487; Bursick, R. "The Dynamics of Specialization in Juvenile Offenses." Social Forces, 1980, 58, 851 - 864; Kempf, K. "Specialization and the Criminal Career." Criminology, 1987, 25(2), 399 - 420.

21 This is a coefficient developed and proposed by Farrington (Farrington, D. Age and Crime. In M. Tonry and N. Morris (Eds.), Crime and Justice: An Annual Review of Research. Volume 7. Chicago: University of Chicago Press, 1986.

22 Although those who committed "Other" types of offenses would appear from the Figure to desist at a high rate, the difference observed is not statistically significant, due at least in part to the small numbers of persons in that category.

23 All diagonal transitions are statistically significant by the Adjusted Standardized Residual, and almost all off-diagonal transitions either support the null hypothesis or are statistically significant but negative -- suggesting that the transition is significantly not likely to occur.

24 Defining equations are as follows:

Nuisance Coefficient: .120 +
.00483(Transition No.); $R^2 = .514$; $p < .03$.

Property Coefficient: .120 +
.00842(Transition No.); $R^2 = .638$; $p < .01$.

25 The 1980 cohort analyses did suggest a bit higher degree of "specialization" than did comparable analyses conducted on the 1962 sample -- and this particularly is true for the "property/property" and "drug/drug" transitions. Some of the latter (and a small decline in "nuisance/nuisance" transitions) no doubt is due to differences in category definitions as described earlier.

26 Haapanen, Rudy A., Selective Incapacitation and the Serious Offender: A Longitudinal Study of Criminal Career Patterns, Sacramento, California: Department of the Youth Authority, September, 1988.

27 There may of course be other grounds to warrant confinement, such as the satisfaction of desert principles.

28 Quetelet, Lambert A. J., A Treatise on Man and the Development of His Faculties. A Facsimile Reproduction of the English Translation of 1842 with an introduction by Solomon Diamond, Gainesville, Florida: Scholars' Facsimiles and Reprints, 1969, p.92.

29 Portions of this section are adapted from Gottfredson, Stephen D. and Gottfredson, Don M., "Selective Incapacitation?," Annals of the American Academy of Political and Social Science, 478, March, 1985.

30 For a detailed review of issues of accuracy in prediction, see Gottfredson, S.D., and Gottfredson, D.M., supra note 17.

31 See, e.g., Morris, Norval, "Punishment, Desert and Rehabilitation," in U. S. Department of Justice,

Equal Justice Under the Law, Bicentennial Lecture Series, Washington, D. C.: U. S. Government Printing Office, 1976; von Hirsch, Andrew, Past and Future Crimes, New Brunswick, New Jersey: Rutgers University Press, 1985.

32 Petersilia, J., "Criminal Career Research: A Review of Recent Evidence." In N. Morris and M. Tonry (eds.), Crime and Justice: An Annual Review of Research. Chicago: University of Chicago Press, 1980, at 322.

33 Cohen J., supra note 7.

34 For a more complete explication of the argument made in this section, see Gottfredson, S. and Gottfredson, D. M., supra note 17.

35 The only way to change the number of errors to be made is to increase the accuracy of the prediction tool used.

36 For reviews, see Meehl, Paul E., Clinical vs. Statistical Prediction, Minneapolis: University of Minnesota Press, 1974; Goldberg, L. R., "Diagnosticians vs. Diagnostic Signs: the Diagnosis of Psychosis vs. Neurosis from the MMPI," Psychological Monographs, 79 (whole no. 9), 1965; idem, "Seer Over Sign: The First "Good" Example? Journal of Experimental Research in Personality, 3:168-71, 1968; idem, "Man vs. Model of Man: A Rationale, plus Some Evidence of a Method of Improving on Clinical Inference," Psychological Bulletin, 73:422-32, 1970; Sawyer, J., "Measurement and Prediction, Clinical and Statistical," Psychological Bulletin, 66:178-200, 1966; Dawes, Robyn M., "Case-by-case versus Rule-generated Procedures for the Allocation of Scarce Resources," in Human Judgment and Decision Processes in Applied Settings, Martin F. Kaplan and Steven Schwartz, eds., New York: Academic Press, 1975, pp. 83-94; Dawes, Robyn M., "The Robust Beauty of Improper Linear Models in Decision Making," American Psychologist, 34 (7):571-82, 1979.

37 Dunnette, M. D., Personnel Selection and Placement, Belmont, California: Brooks / Cole, 1966, pp. 173-83.