

Varieties of Criminal Behavior

Jan M. Chaiken and Marcia R. Chaiken

Rand

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PREFACE

This report is one in a series of Rand publications that document the Second Inmate survey, a project funded by the National Institute of Justice under its Research Agreements Program. In this project, Rand researchers developed, fielded, and analyzed data from a survey instrument administered to nearly 2200 jail and prison inmates in three states. The following annotated list of the project publications indicates the scope of the research and this report's place in it.

- o Mark Peterson, Jan Chaiken, Patricia Ebener, and Paul Honig, *Survey of Prison and Jail Inmates: Background and Method*, N-1635-NIJ, August 1982.
Describes the purposes of the survey, its design and administration, the data collected, and response patterns.
Appendix contains a copy of the full survey instrument.
- o Kent Marquis with Patricia Ebener, *Quality of Prisoner Self-Reports: Arrest and Conviction Response Errors*, R-2637-DOJ, March 1981.
Analyzes the reliability of the survey's self-reported arrest and conviction data, using both the retest method and a comparison with official records.
- o Joan Petersilia and Paul Honig, with Charles Hubay, Jr., *The Prison Experience of Career Criminals*, R-2511-DOJ, May 1980.
Determines the proportion of prison inmates who have demonstrated a need for specific treatments while incarcerated, the proportion who actually receive such treatment, and the differences in these two figures (controlling for inmate characteristics). Also describes inmates' assessments of various programs and analyzes which inmates are disproportionately involved in prison violence.
- o Jan Chaiken and Marcia Chaiken, with Joyce Peterson, *Varieties of Criminal Behavior: Summary and Policy*

Implications, R-2814/1-NIJ, August 1982 [summary of the present report].

Gives conclusions from analysis of the survey and official record data concerning identification of serious criminal offenders and the implications of their characteristics for public policy.

- o Jan Chaiken and Marcia Chaiken, *Varieties of Criminal Behavior*, R-2814-NIJ, August 1982 [the present report]. Identifies ten subgroups of offenders and describes their characteristics, with special reference to the most serious offenders. Shows how, and the extent to which, serious offenders and high-crime-rate offenders can be identified from their criminal records and other information about them. Appendixes describe (a) an analysis of the internal consistency of survey responses and their correspondence with official record data, and (b) the construction of scaled predictor variables.
- o Peter W. Greenwood, with Allan Abrahamse, *Selective Incapacitation*, R-2815-NIJ, August 1982. Uses the predictor and outcome variables constructed by Chaiken and Chaiken to produce a 7-item scale and draw conclusions about selective incapacitation. Also summarizes the entire research effort under Rand's Research Agreements Program.

The summary report cited above (R-2914/1-NIJ), intended primarily for criminal justice practitioners and others concerned with public policy on criminals and crime control, provides a useful overview for reading the present report. This report, intended primarily for criminal justice researchers, contains references to related research, explanations of the analytical methods, and comprehensive data tables.

SUMMARY

Analysis of self-report data obtained from nearly 2200 prison and jail inmates sentenced in selected counties of California, Michigan, and Texas shows that offenders can be usefully classified into varieties of criminal behavior according to the combinations of crimes they commit concurrently. The most serious category of offenders comprises those who reported committing robbery, assault, and drug deals during the one-to-two-year measurement period covered by the survey. These criminals, whom we have called "violent predators," usually committed the three defining crimes at high rates, and they also often committed burglaries, thefts, and other property crimes at high rates--often higher than those of any other type of criminal.

In all, ten varieties of criminal behavior are identified. Examples of varieties less serious than the violent predator are the robber who neither commits assault nor deals drugs, and the drug-dealing burglar who does not commit robbery.

The distributions of annualized crime commission rates are homogeneous within varieties of behavior across states, even though they differ substantially from one variety to another. For example, the prisoner respondents in Texas had lower crime commission rates than respondents in jail or in prison in California. The relative numbers of respondents in each variety of criminal behavior entirely explain these differences--especially the fraction of respondents who are violent predators. Texas had relatively few of them in prison.

The crime-rate distributions are highly skewed to the right: In any subgroup of offenders, defined in any way that does not make reference to crime rates, most members will commit none or a small number of each particular type of crime, but a small number will commit the crime at very high rates. The same is true of each variety of criminal behavior, even the violent predators, who disproportionately have very high annualized rates.

Except for the subgroup of those who commit no crimes other than homicide or assault, the varieties of criminal behavior can be arrayed

in approximate order of the public perception of the seriousness of crimes committed. The ordering is hierarchical in the sense that offenders who commit serious crimes (e.g., robbery and assault) are also very likely to commit one or more of the crimes that characterize lower-level varieties of behavior (e.g., auto theft, forgery, or fraud). The limited amount of quasi-longitudinal data provided by the survey respondents suggest that, as time passes, offenders typically make transitions to higher-ranking (more serious) varieties of behavior, or they temporarily stop doing crime altogether.

An array of information about respondents' personal characteristics and prior criminal activities was obtained from their self-reports and (for respondents in prison but not those in county jails) from their official records. Our study aimed at discovering the extent to which the official records and other characteristics permit identifying the most serious criminals.

Since violent predators are defined by their concurrent commission of three types of crimes, it might seem easy to identify them from information about whether or not they committed these three particular crimes during their current conviction offense, during prior incidents that led to convictions (or perhaps only arrests), or as juveniles. However, the data show that this type of official record information only poorly identifies the violent predator, and adding official record information about drug use does not yield a substantial improvement.

The following information distinguishes the violent predator from other inmates in the study sample:

- o Youth
- o Onset of crime (especially violent crime) before age 16
- o Frequent commission of both violent and property crime before age 18
- o Multiple commitments to state juvenile facilities
- o Unmarried and with few family obligations
- o Employed irregularly and for short times
- o Frequent use of hard drugs as a juvenile

- o Use of heroin at costs exceeding \$50/day
- o Use of multiple combinations of drugs (heroin and barbiturates, barbiturates and alcohol, amphetamines and alcohol, etc.)

This description indicates that violent predators become entrenched in a highly deviant life-style while they are very young.

The same personal characteristics are positively associated with annualized robbery commission rates (because violent predators disproportionately commit robbery at high rates). Using both self-report and official record data, a multiple regression model for the logarithm of robbery commission rate among convicted robbers explains 32 percent of the variance. However, restricting the independent variables to official record items explains only 21 percent of the variance. The *official record* data for juvenile criminal behavior explains no variance above that explained by adult record items, even though the *self-reported* amount of juvenile criminal activity is the strongest predictor of robbery rates among convicted robbers. Some inmates who report the highest juvenile crime rates have no official records of juvenile criminal behavior, and these inmates' own survey reports confirm that they were not incarcerated as juveniles.

Among offenders who commit only less serious crimes (e.g., fraud, forgery, or credit-card crimes), the characteristics of offenders who commit crimes at high rates differ from those of violent predators. High-rate fraud and forgery are positively associated with education and being married. In addition, fraud rate was associated with recent unemployment, not with a pattern of chronic irregular employment.

The regression models were fit to data from a randomly selected half of the respondents and then applied as predictions to the other half. The results showed that offenders who "should" have low crime commission rates, according to the models, were almost all, in fact, low-rate offenders. Among offenders predicted to have high commission rates, however, typically well over half were actually low-rate offenders. In sum, along with the "true positives" (high-rate offenders predicted by the models to be high-rate) are a large number of "false positives" (low-rate offenders predicted to be high-rate).

Drug use is one of the major factors in serious high-rate criminal behavior. A history of having used hard drugs, including heroin, frequently as a juvenile is characteristic of serious adult criminals. In addition, relatively extreme use of amphetamines and use of high quantities of barbiturates along with alcohol abuse was reported by the violent predators significantly more than by other respondents.

Heroin addiction in the absence of high monetary costs for heroin is not associated with crime commission rates. However, recreational use of heroin, or use of alcohol or nonopioid psychotropic drugs, is associated with committing assault or homicide.

Appendixes of this report discuss technical issues related to the research:

- o Construction of annualized crime commission rates from survey responses,
- o Analysis of the internal quality and external reliability of the self-report data,
- o Construction of socioeconomic variables by Guttman scaling techniques. and
- o Selection of a subset of the originally constructed socioeconomic variables for use in regression analyses.

A copy of the survey instrument is also appended to this report.

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Richard T. Barnes, former Director of the Center for the Study of Crime Correlates and Criminal Behavior, the National Institute of Justice, supported the inclusion of this project in the Research Agreements Program. Patrick Langan, our project monitor at the National Institute of Justice, provided insightful comments and advice at each stage of data collection, analysis, and presentation of findings. Peter Greenwood, Rand's former Criminal Justice Program Manager, oversaw all the work that was conducted under the Research Agreements Program. Many reviewers of earlier drafts of this report made insightful suggestions concerning our terminology, analysis methods, presentation, and conclusions. We especially wish to thank Alfred Blumstein, Phillip Cook, Don Gibbons, Daniel Glaser, James Kahan, Michael Maltz, Albert Reiss, Wesley Skogan, Barbara Williams, and an anonymous reviewer.

Without the cooperation of many people in county and state corrections agencies, temporary Rand employees who administered the survey, and the staff who coded information from prisoners' inmate folders, we would have had no data to analyze. Their names are listed in the acknowledgments of the companion publication, *Survey of Prison and Jail Inmates: Background and Method*, N-1635-NIJ. In addition, the thousands of inmates who filled out survey questionnaires were vital to our research.

Mark Peterson provided leadership for this project in its initial stages. Mark was the person primarily responsible for the site selection, survey design and administration, official record data collection, and preparation of the data for analysis. He planned the overall scope of the study and directed the first analyses.

Patricia Ebener helped plan the survey instrument. She supervised the administration of the survey in prisons and jails and painstakingly ensured the confidentiality of the data from the moment the questionnaires were completed through transportation, coding, cleaning, and keyboarding. She also assisted Kent Marquis in the construction of

the difference variables relating self-reports to official record data of conviction crimes and arrests, which we used in our validity study.

Sue Polich organized and operated the information retrieval system that permitted use of data from multiple sources. She did the programming and documentation for the majority of the variables reported in this study, gave ongoing advice about the statistical packages we used, and wrote portions of Appendix A.

Paul Honig designed and supervised the data-collection methods for the information collected from inmate folders. He also designed and organized the codebook for the official record data, constructed indicators of validity, and carried out extensive computer programming. One of the most difficult aspects of his work was the construction of analysis variables that captured comparable information from data files of three different states.

Leola Cutler performed the computer programming related to the indicators of internal quality of the data; she also helped with multiple regression analyses. Allan Abrahamse gave valuable statistical advice in the planning of the multivariate analysis. Peter Greenwood assisted in the response rate analysis.

David Lyon, David Kanouse, Gene Fisher, and Barbara Williams provided impetus for documenting this study and the administrative support that made it possible.

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Chapter 1

INTRODUCTION

Faced with rising crime rates, fiscal limitations, and a conservative political movement, public officials increasingly long for a simple, encompassing policy that would permit them to deal quickly and effectively with criminals. They have also deemphasized rehabilitation in favor of longer prison sentences as a means of reducing crime. Unfortunately, an important truth has been almost lost during these developments: There are many varieties of criminals, and any single punitive solution to the problem of crime is not only simplistic and unjust but also inefficient.

This study, which builds on previous Rand studies of criminal careers (Petersilia, Greenwood, and Lavin, 1977; Peterson and Braiker, 1981), empirically describes the diversity of criminal behavior in a way that can help the criminal justice system distinguish among and develop appropriate criminal justice policy for handling various subgroups of offenders. It presents our analysis of data from a survey of adult male prison and jail inmates in three states, designed and administered by Peterson et al. (1982). This report concentrates on the conceptual underpinnings of our work and the methods, models, and data tabulations that support our findings. A companion publication (Chaiken and Chaiken, 1982) summarizes the policy-relevant implications of the study.

PREVIOUS RAND RESEARCH ON CRIMINAL CAREERS

Self-reported information about previous criminal activities of incarcerated male offenders has served as the foundation for all of Rand's research on criminal careers. Petersilia, Greenwood, and Lavin (1977) began with the notion that "career criminals" might be defined as older inmates who had been convicted of robbery. They conducted structured interviews with 49 convicted armed robbers in California prisons who had served at least one prior prison term. They found that among apparently similar convicts, one-third were highly active

criminals and the other respondents were "intermittent" offenders. The most active offenders thought of themselves as criminals, committed crimes as juveniles, and were involved with drugs.

The study by Peterson and Braiker (1981) was based on Rand's "first inmate survey," an anonymous self-administered written questionnaire completed by 624 male California prison inmates. Peterson and Braiker established the quantitative difference in crime commission rates^{*} between "highly active" and "less active" criminals, and showed that crime commission rates were strongly skewed to the right: The vast majority of respondents reported very low crime commission rates, while a small minority reported committing a "disproportionate amount of crime." This finding indicated that selective incapacitation of the high-rate offender was potentially a viable criminal justice policy. Indeed, the findings indicated that incapacitating the most active 8 percent could prevent three times as much crime as incapacitating the least active half of the respondents for the same length of time.

Implicit in their study, however, is one of the major difficulties of implementing a policy of selective incapacitation: identifying the high-rate offender. They showed that high commission rates were significantly associated with factors that are rarely known to criminal justice personnel: juvenile involvement in serious crime, criminal self-identities, and hedonistic motives. Information about criminal offenders presumably available to criminal justice officials, such as prior convictions, generated weaker associations with crime rates--only about two-thirds as strong. Peterson and Braiker suggested that this problem was exacerbated by the fact that offenders who commit a wide range of crime are too young to have accumulated an adult criminal record.

Peterson and Braiker considered their findings tentative: The crime rate data were imprecise, the self-report data were not validated, the sample came from only one state (California), and the researchers did not know whether the data that presumably represented information

* A "crime commission rate" (for a particular type of crime) is the number of crimes (of that type) that the person commits in a year, if free to do so for the entire year.

available to criminal justice officials could actually be found in official records. Moreover, they noted that any implication to be drawn about selective incapacitation from their results would be based on the assumption that offenders will continuously maintain their activity patterns into the future. Justification of this assumption, or some quantitative modification of it, is one of the key elements of incapacitation research at the present time (Blumstein, Cohen, and Nagin, 1978).

RAND'S SECOND INMATE SURVEY

The present study is based on a second inmate survey which builds and improves on the first survey.* Important features of the survey and our analysis of the survey data are described in this section.

Generalizability

The sample for Rand's Second Inmate Survey was drawn to represent an incoming incarceration cohort of adult males from selected counties in California, Michigan, and Texas (Table 1.1) and includes both prison inmates and jail inmates.† Replacement procedures for nonrespondents were developed and utilized to help prevent sample bias. To the extent that results are found to be similar or different among the three states, we have a clearer picture of the generalizability of our results.

All variables ultimately used in models used to predict criminal activity were first scaled using data from one state, and then tested for scalability and reproducibility using data from the other two states. In addition, we used a split sample method for constructing models. The total sample of respondents was randomly divided into two subsamples.

*Peterson et al. (1982) gives details of the design, site selection, sampling plan, pretest, administration, and response rates of Rand's Second Inmate Survey. Here we give only a brief overview to set the context for our analysis.

†The prisoner respondents are not actually an incoming (admission) cohort. Instead, a weighted sampling design produced a simulated incoming cohort.

Table 1.1

COUNTIES FROM WHICH INMATES WERE SAMPLED

State	County	Central City
California	San Diego	San Diego
	Ventura	Oxnard, Ventura
	Fresno	Fresno
	San Joaquin	Stockton
	San Francisco	San Francisco
Michigan	Wayne	Detroit
	Genesee	Flint
	Kent	Grand Rapids
	Ingham	Lansing
	Washtenah	Ann Arbor
Texas	Dallas	Dallas
	Travis	Austin
	Nueces	Corpus Christi
	Jefferson	Beaumont

NOTE: Both prison and jail inmates sampled in the second inmate survey were convicted in these counties only. Jail inmates in Texas were not used in the final analyses (see text).

All regression models presented in this report were first constructed using data from one-half of the sample and then applied to the second half.

Large, Representative Sample

The final sample used throughout this report consists of 2190 inmates as shown in Table 1.2. Analysis of response patterns for sampled prisoners (Peterson et al., 1982) showed that after inclusion of the replacement respondents in California and Michigan, there were no significant response biases by age group, prior record, race, or conviction offense, except that Hispanic inmates are underrepresented in the California sample.* A larger group (over 2500 inmates) originally completed the questionnaire, but replacement respondents in Texas prisons were not needed to correct for sample biases,† and Texas jail respondents were not included because they were predominantly convicts sentenced to prison and awaiting transportation. The response rate was 50 percent in California and Michigan prisons, over 66 percent in California and Michigan jails, and 82 percent in Texas prisons.

Content of Survey Questionnaire

The questionnaire instrument (reproduced in Appendix E) elicited information about these aspects of the inmates' background and activities:

- o Juvenile criminal behavior, use of illegal drugs, and incarceration in juvenile facilities.
- o Criminal behavior and arrests during a one- to two-year period just prior to the present conviction. (This is called the "measurement period," or the "window period,"

* In all three states, inmates with reading difficulties were included in the sample but were underrepresented.

† The main sample biases among Texas prisoners were caused by different response rates among prison institutions. These biases have been corrected by weighting Texas prisoner respondents according to the prison where they were surveyed.

Table 1.2

INSTITUTIONS FROM WHICH INMATES WERE SAMPLED

State	Institution	Sample Size
California	<u>Prisons</u>	357
	California Correctional Institute, Tehachapi	77
	Deuel Vocational Institute, Tracy	76
	San Quentin State Prison	123
	Correctional Training Facility, Soledad	81
	<u>Jails (County)</u>	437
	San Diego	144
	Ventura	44
	Fresno	42
	San Joaquin	106
	San Francisco	101
Michigan	<u>Prisons</u>	422
	State Prison of Southern Michigan, Jackson	244
	Michigan Reformatory, Ionia	112
	Michigan Training Unit	66
	<u>Jails (County)</u>	373
	Wayne	200
	Genesee	28
Texas	<u>Prisons</u>	601
	Wynne Unit	99
	Ellis Unit	89
	Coffield Unit	275
	Ferguson Unit	138
Three states	<u>All prisons</u>	1380
	<u>All jails</u>	810
	<u>Total</u>	2190

or "Window 3." It begins on January 1 of the year preceding the inmate's arrest for the crime that led to his current incarceration and continues until the end of the month of the arrest. See Fig. 1.1. The amount of unincarcerated time a respondent had during the measurement period could have been any length between 1 month and 24 months.)

- o Other behavior during the same measurement period, including use of alcohol and illegal drugs, employment, and change in residence.
- o Types of crimes committed in two earlier reference periods. (These are called "Window 1" and "Window 2," as shown in Fig. 1.1. Window 2 comprises the two calendar years preceding Window 3, and Window 1 is the two years preceding Window 2.)
- o Subjective and psychological information including self-identities, attitudes toward the criminal justice system, and motivations for committing crimes.

Moreover, the questionnaire included questions, widely separated, that asked for essentially the same information about the crimes the respondents had committed and about other topics.

Official Record Data

For prisoner respondents (but not those in county jails), the following additional information was collected from their official records (inmate folders):

- o Rap-sheet arrests for the same one-to-two-year measurement period covered by the self-reports.
- o Details of the current conviction offense(s).
- o Prior history of adult convictions.
- o Juvenile probation and commitments to juvenile facilities.
- o (For California only) details of up to ten juvenile arrest transactions: date, charge, whether convicted, and disposition if convicted.

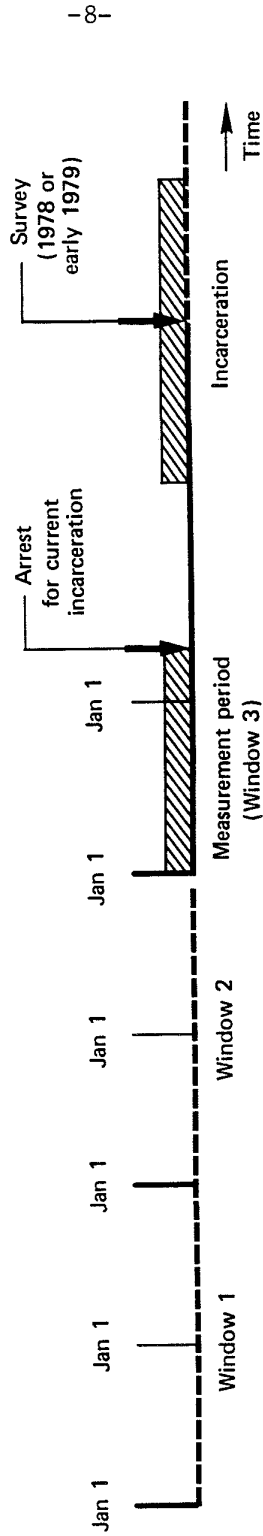


Fig. 1.1 — Survey reference periods illustrated by an example. Start at the right: The survey was conducted in the last three months of 1978 and early January 1979. The interval shown beginning on January 1 of the year preceding the inmate's arrest is called the "measurement period" because most survey questions asked about his activities during that period. When necessary to distinguish it from earlier periods, it is called Window 3.

- o Sociodemographic data.

These data were obtained for 1214 of the 1380 prisoners in the sample (88 percent).

Validity

Since we had self-report data, official record data, and multiple survey items which asked for essentially the same data, we were able to perform, in addition to the standard tests of validity carried out by Marquis (1981), a series of checks of the internal quality of responses (inconsistency, omission, and confusion).^{*} Over 83 percent of respondents filled out the questionnaire very accurately, completely, and consistently. In order to test whether respondents who seemed to be confused or untruthful influenced any important results, we carried out key analyses two ways: one, including all respondents, and the second excluding respondents for whom we had any reason to be suspicious of their truthfulness. We found no meaningful differences in the results from the two ways of carrying out the analyses.[†]

(See Appendix B.)

Level of Detail

We had detailed data on rates at which specific crimes were committed, prior record, and characteristics of the respondents. These allowed estimating annualized crime commission rates over a wide range (from under 1 to over 1000 crimes per year) and examining the relationships between those rates and specific aspects of prior adult criminal record, juvenile record, juvenile behavior, employment, and drug use. We found in general that the more precise the data about the characteristics of the respondents, the more accuracy achieved in identifying the serious criminal.

^{*} These tests of internal quality are described in Appendix B.

[†] We must admit that this extensive effort, while intended to shed as much light as possible on the believability of the self-reported crime commission rates, does not directly address their validity.

Seriousness

In this report we not only take into account rates at which crimes were committed, but the nature of the offenses, the public perception of the relative seriousness of the offenses, and persistence in committing offenses. We distinguish among ten different types of criminals, including one group comprising those who are the most serious in terms of having persistently committed *both* violent and property crimes, often at very high rates.

Policy Orientation

In the analysis of Rand's first inmate survey, Peterson and Braiker (1981) considered two kinds of information for identifying serious criminal offenders: (1) information presumably used now by criminal justice officials in deciding appropriate sanctions for individuals (e.g., nature of current commitment offenses, age at first conviction, number of prior felony convictions, current age, and race) and (2) all other information collected in the survey. In our analysis of the second inmate survey we further subdivided their category 2 into (a) subjective and psychological information--which could never be available to criminal justice officials--and (b) other information that, if shown to be sufficiently useful, could potentially be used by the criminal justice officials.

We did not examine the subjective and psychological data at all in our analysis. The information potentially available to the criminal justice system plays an important role. It includes a history of frequent juvenile violence beginning before age 16, specific forms of drug use (which can be determined through urine analysis), alcohol abuse, stability of employment, and marital status.

Stability of Behavior Over Time

Although this study does not involve predicting future behavior and validating those predictions, we do show that the majority of offenders we found to be most serious had been committing serious types of crimes at least five or six years prior to their commitment crime. Moreover, the characteristics that we found are associated with

high-rate serious offenders are also typically found in other studies to be associated with a high probability of recidivism (see Chap. 3). Consequently, we have good reason to believe that these inmates are more likely than others to restart their criminal activity after release, and to commit serious crimes at high rates.

Integration with Prior Research

The analyses reported in this study were suggested by assumptions and hypotheses drawn from sociological theory, in particular the interactionist perspective, and past criminological research. Our findings in turn support the concept of deviance as a process rather than an absolute condition and can also be used to support, modify, or reject several specific criminological hypotheses, as we explain in introducing each section.

PLAN OF THIS REPORT

Our study aimed at developing empirical distinctions among types of offenders found in incarceration cohorts and at discovering whether official records and characteristics that could potentially be included in official records permit identifying an inmate's type. The results indicate that inmates can be meaningfully categorized according to the *combinations* of crimes they reported committing during the measurement period. The most serious offenders, whom we have called "violent predators," reported concurrently committing robbery, assault, and drug deals.* We show that these criminals usually committed the three defining crimes at high annualized rates, and they often reported committing burglaries, thefts, and other property crimes at very high rates too.

Typically, the violent predators began persistently using hard drugs as juveniles and committing violent crimes before age 16. By contrast, other types of offenders are--in relative terms--more socially acceptable than the violent predators. Not only do they commit less

*Conrad (1980) and others have used the term "violent predator" in a broader sense, without defining it.

serious crimes and commit them usually at lower rates, but also their patterns of employment, drug use, juvenile behavior, and juvenile interaction with the criminal justice system are more socially acceptable. Still, among the less serious offenders, those who use specific forms of hard drugs and who had unstable employment were likely to do more crimes than their counterparts.

Unfortunately, our analysis shows that the information presently available to and used by the criminal justice system, such as current and past conviction crimes, does not allow meaningful distinctions between the violent predator and other types of offenders. However, significant (though imperfect) distinctions can be made on the basis of information potentially available on such factors as specific forms of drug use, stability of employment, and juvenile violence. This finding points to the need for improved methods of assembling information about the past history of convicted individuals, before selective incapacitation policies can be designed to take advantage of differences in individual crime commission rates.

The remainder of this chapter places our work in the context of other related research. Chapter 2 defines ten categories of criminal behavior according to combinations of crimes committed by an offender, and it describes how the categories are useful and meaningful. The chapter includes discussions of the differences in crime commission rates among categories and the stability of an individual's membership in a category over time.

Chapters 3 and 4 together characterize the offenders in the ten categories and tell how well each type of offender can be identified from official records. Chapter 3 focuses on robbers, with special emphasis on the violent predators and on offenders who commit robberies at high annualized rates (a group that overlaps substantially with the violent predators). We show that no simple, straightforward examination of official records allows meaningful identification of convicts who commit the three crimes that define the violent predator (robbery, assault, and drug dealing). However, regression analysis yields fairly strong associations between robbery commission rate and a combination of official-record and self-report data. Chapter 4 examines

the high-rate offenders who are not robbers and shows how they differ from the violent predators and from low-rate offenders.

Chapter 5 clarifies details of the relationship between various types of drug use and criminal behavior. Chapter 6 presents our conclusions from the research.

The appendixes contain material that some readers will find highly pertinent to the research while others will consider it extraneous, depending on their field of expertise. Appendix A describes how the annualized crime commission rate data were constructed from survey responses and provides detailed tabulations of the distributions of crime commission rates for various subgroups of respondents. Appendix B presents our analysis of the internal quality and external reliability of the survey data and shows that crime commission rates as estimated from "good quality" responses are not significantly different from those estimated from the entire sample. Appendix C explains how the socioeconomic variables used in the study were constructed by Guttman scaling techniques from combinations of survey items. Appendix D describes how we chose a subset of the originally constructed socioeconomic variables as independent variables for our regression models. Appendix E reproduces the survey instrument used in Rand's Second Inmate Survey.

RELEVANT PAST FINDINGS

Our assumptions and the formulation of our analysis questions were drawn from diverse research fields including sociological theory (with a heavy emphasis on the interactionist perspective), ethnographic descriptions of deviant life-styles, criminological classifications, recidivism research, and mathematical models of criminal behavior. The relation of each of them to our work is described in this section.

Theoretical Concepts

A major theoretical proposition on which this report rests is that *deviance including income-producing criminal behavior tends to be progressive in terms of seriousness*. Implicit or explicit in many seminal sociological theories of deviance is the notion of a learning

process which must necessarily take place in order for a person to take on a law-violating life-style. Sutherland (1947) explicitly maintains that criminal (and noncriminal) behavior is learned in association with other people and that the associations may vary in terms of frequency, duration, priority, and intensity. Matza (1964) elaborates on the content of the learning process and suggests that delinquents learn to neutralize deviant acts, to come to see them as normal. Cloward and Ohlin (1961) see the process as a function of the availability of local opportunities to learn criminal means for attaining success. And more recently, "labeling" theorists such as Becker (1963) and Lofland (1969) have described specific processes which lead to embracing deviant activities.

We assumed that the learning of criminal behavior, like the learning of any other form of behavior, would progress from the simplest forms to the most complicated forms. Moreover, crimes of different types range along a continuum of complexity in terms of the mechanisms that must be learned to justify the act, the skills necessary to commit it without apprehension, and the frequency/nature of opportunities for applying the skills. For example, in these terms theft may be considered more simple than burglary.*

We therefore hypothesized that:

- o Members of an incarceration cohort could be grouped according to their level of criminal behavior learning.
- o Members who are part of "advanced" groups would have learned to do and would be just as likely to do the "simple" criminal acts which defined the upper limits of the criminal behavior of less "advanced" groups.

In addition, although we do not accept a total reliance on "labeling" as an explanation for continued deviance, Lofland's (1969)

*Compare the wording of questions on survey page 16 and survey page 25 (Appendix E) for the distinction between burglary and theft. (The wording of these survey questions is also reproduced in Chap. 2.)

formulation of the difference between primary deviance (the initial commission of a deviant act) and "secondary" or continued deviance laid the basis for another hypothesis--that factors significantly associated with *committing* specific crimes are different from factors significantly associated with committing those crimes *at high rates*.

Empirical Research

Ethnographic studies of deviant populations indicate that law violators socially sort themselves into groups with fairly well-defined sets of behavior. To us, this suggested we could categorize much of the surveyed sample into specific groups based on their self-reports of behavior. Irwin, for example, in his study of prison populations, was able to describe eight distinct but overlapping behavioral systems and classify 99 percent of a sample of 116 persons on parole into them (Irwin, 1970). Although the systems were somewhat nebulous, he found they existed with "some degree of cohesiveness and consistency." Irwin's systems provide good insight into differences in types of criminal subcultures, but of course they describe criminals in ethnographic terms that are not especially useful for helping the criminal justice system decide how to deal with offenders.

Nonetheless, Irwin's systems are somewhat congruent with categories of inmate populations that were intended to be more useful to criminal justice personnel, for example, Schrag's (1961) classifications of prosocial, antisocial, pseudosocial, and asocial inmates. His systems also provided a basis for constructing more realistic categories than had been constructed in the past. For example, Glaser's (1972) classifications are highly congruent with Irwin's systems.

We were acutely aware of the problems of attempting to construct a typology of offenders. Gibbons (1975), in his review of typologies including his own role-career classification, points out that ". . . typological efforts have not entirely lived up to the early expectation voiced for them" [p. 141].* Still, to ignore the fact that different

*One of Gibbons' major objections to typologies is his belief that criminal behavior is not stable. We deal with this issue in

types of criminals do in reality exist, when trying to identify the most serious criminals and deriving policies for dealing with them, would be naive. Averaging the crime rates of old "lower class" assaulters with those of young "state raised youth" robbers does not help add to understanding criminal behavior.

We oriented our analysis toward locating in our sample different varieties of criminal behavior, anticipating that they would not collectively constitute a "typology" as that term is usually defined by criminologists. We expected that the relative seriousness of the behavior of people in the different varieties would be seen to differ along several dimensions. In addition to having a theoretical basis for this hypothesis, we were encouraged by empirical studies like that of Zimmerman and Broder (1980). They demonstrated strong intercorrelations among their measures of frequency of activity, diversity of activity, (self-ranked) seriousness of activity, and progression into delinquent behavior.

Whether or not an act is considered to be deviant, and the seriousness of a deviant act, are not absolute; judgments differ with perceivers and contexts. Nonetheless, Sellin and Wolfgang's (1964) scale of seriousness, based on a survey of public perceptions of specific actions, has been shown as relatively stable over time and different cultures (Kvalseth, 1980). We relied on the scale as a basis for our formulation of varieties of behavior differing by seriousness.

Not only the particular acts committed by an offender, but also the rate at which he commits them, are relevant to an overall judgment of the seriousness of his behavior. Unfortunately, practically any method of measuring the crime commission rates of individuals can be and has been challenged. Some methods err in the direction of underestimating the crime commission rates of some offenders, while others may yield overestimates (Hindelang, Hirschi, and Weis, 1979).

Chap. 2. Another major objection is based on the failure researchers have experienced when they have attempted to utilize typologies to classify inmates. For example, Garabedian was unable to classify large numbers of offenders using Schrag's typology. As we discuss, we do not attempt to construct a comprehensive typology capable of classifying all offenders.

Methods that rest primarily on individuals' counts of arrests per year (Greene, 1977; Blumstein and Cohen, 1980) suffer from the disability of "hidden deviance": High-rate serious offenders who happen to evade arrest appear to be committing crimes at low rates. Studies based on the length of time until a person recidivates after a specified incarceration or treatment program (e.g., Barton, 1978; Barton and Turnbull, 1979; Harris, Kaylan, and Maltz, 1981; Maltz, 1980; Stollmock and Harris, 1974) also typically define the occurrence of recidivism according to some event that is recorded by criminal justice authorities (e.g., arrest, conviction, or reincarceration) and therefore possibly omit unknown quantities of deviant activity.

By contrast, self-report data can potentially overestimate as well as underestimate an individual's true amount of criminal activity (for reviews, see Petersilia, 1977; Reiss, 1973; Marquis, 1981; Peterson et al., 1982). Prior to Rand's First Inmate Survey (Peterson and Braiker, 1981) most self-report surveys or interviews covered juvenile delinquency and sex crimes. Unlike the two Rand surveys, few included questions about a variety of serious adult crimes.

An important purpose of this study was to determine how information presently or potentially available to the adult criminal justice system could best be used for identifying the most serious members of incarceration cohorts. Therefore, we did not draw hypotheses from studies focusing on information about individuals that could not realistically be used by criminal justice authorities, even if the relationship with criminal behavior is known to be strong, for example, home atmosphere during childhood (McCord and McCord, 1959).

Hypotheses about the interrelationships between characteristics of offenders and the seriousness of their criminal behavior were based on studies of recidivism, especially those of Glaser (1964), Pritchard (1979), and Hoffman and Beck (1980); other criminological studies based on self-report surveys, especially Peterson and Braiker (1981), Mann et al. (1976); longitudinal studies of delinquency, especially Wolfgang et al. (1972), Robins and Wish (1977); and the literature on the relationship of drug use and crime, especially Williams (1979) and Gandossy et al. (1980). The specific hypotheses drawn from these studies are discussed in context in Chaps. 3 and 4.

Chapter 2

PORTRAIT OF THE SERIOUS CRIMINAL

INTRODUCTION

Although both public officials and criminal justice researchers have focused attention on the "serious criminal offender," there is little agreement on the definition of seriousness. In this chapter we show that a group of offenders can be identified who are serious in terms of public perception of the configurations of types of crimes they committed, their annualized rates of committing those crimes, and their stability of committing specific crimes over time. Although we cannot necessarily point to all the serious offenders in our study sample, the ones we do so identify are very serious indeed.

Many criminological researchers avoid definitions of the "serious offender" because they realize that an absolute unidimensional definition is impossible to construct. Any given act may or may not be considered a serious criminal offense according to the subculture of the evaluator (Simmons, 1965), the circumstances surrounding the act, and the negotiation process between the person who committed the act and members of the criminal justice system whose official mandate includes classification of crimes (Emerson, 1969; Circourel, 1968).

Consequently, criminological research has tended to describe *offenses* but not *offenders* in terms of seriousness, using categories such as "FBI index crime" or "nonindex crime," "violent offenses" and "nonviolent offenses," or scales of public perception of seriousness (Sellin and Wolfgang, 1964). Comprehensive typologies have described offenders according to concepts other than seriousness, for example, in ethnographic terms (Irwin, 1970), policy-related dimensions (Glaser, 1972), career types (Gibbons, 1968), or psychological profiles (Megargee and Bohn, 1979). In addition, studies have singled out and classified particular types of offenders, for example, robbers (Conklin, 1972) or forgers (Lemert, 1972a, 1972b).

Here we have synthesized these approaches. We cannot point to all of the most serious criminals in our sample, not only because of the

theoretical limitations mentioned above, but also because we have a limited number of types of offenses included in the survey. For example, the survey questionnaire did not ask about either kidnap or rape, so there may be a man in the sample who kidnaped and raped a young child, but (properly) reported only auto theft on the survey. However, we consistently discuss different criminal behavior that inmates reported in the order of publicly perceived seriousness, as determined by Sellin and Wolfgang (1964), and according to the ratio weights of seriousness as calculated by the Center for Studies in Criminology and Criminal Law (1980).

In this chapter, ten varieties of criminal behavior are defined, plus an eleventh default category of inmates who reported committing none of the crimes in the survey. Then we show that the top variety deserves being called the serious offender for at least four reasons: seriousness of crimes committed, multiplicity of types of crimes committed, annualized commission rates, and continuity of behavior.

COMBINATIONS OF CRIMES COMMITTED BY SURVEY RESPONDENTS

Ten types of crimes were included in the questionnaire for the Second Inmate Survey. The first question for each of the crime types asked whether or not the inmate committed that crime during the measurement period. The ten crime types and the wording of the opening questions were as follows:

Burglary. During the [measurement period] did you do any burglaries? (Count any time that you broke into a house or a car or a business in order to take something.)

Business robbery. During the [measurement period] did you rob any businesses? That is, did you hold up a store, gas station, bank, taxi or other business?

Person robbery. During the [measurement period] did you rob any persons, do any muggings, street robberies, purse snatches, or hold-ups in someone's house or car? (Do not include any business robberies or hold-ups during a burglary that you already mentioned.)

Assault during robbery. During the [measurement period] did you ever hurt or kill someone during a burglary (break-in) or a robbery?

Other assault. DO NOT include things that happened during a robbery or burglary. . . Even if no one was hurt, during the [measurement period] did you assault someone, threaten someone with a weapon, shoot at someone, try to cut someone, or beat or strangle someone?

Theft. During the [measurement period] did you do any theft or boosting? That is, did you steal from a till or cash register, shoplift, or pick pockets, or take something from someone without their knowledge? (Do not include car theft.)

Auto theft. During the [measurement period] did you steal any cars, trucks, or motorcycles?

*Forgery, credit card swindles, or bad checks.** During the [measurement period] did you ever forge something, use a stolen or bad credit card, or pass a bad check?

Fraud. During the [measurement period] did you do any frauds or swindles (illegal cons) of a person, business, or the government?

Drug dealing. During the [measurement period] did you ever deal in drugs? That is, did you make, sell, smuggle, or move drugs?

For purposes of analyzing the combinations of crimes committed, we considered the two kinds of robbery as a single crime type and the two categories of assault as a single crime type, resulting in a total of eight different crime types (Table 2.1). Counting each respondent as "yes" or "no" according to whether he did or did not report committing each of these eight crime types during the measurement period,[†] there could have been 256 different combinations. However, 19 combinations of crimes were reported so frequently that they described the behavior of over half of the respondents (Table 2.2).

Moreover, 99 combinations occurred extremely infrequently (either no respondent or one respondent reported the combination). If the respondents had been randomly distributed among the 256 possible

* This category is sometimes abbreviated to *forgery* in the text.

† A respondent who admitted committing the crime for which he was serving a sentence (see Question 7 on page 39 of the survey booklet in Appendix E) was counted as "yes" for that crime type, even if he responded "no" to the questions quoted above. For an explanation, see Appendix A, "Step 2: Activity Variables."

Table 2.1

PERCENT OF RESPONDENTS REPORTING
EACH CRIME TYPE

Crime Type	Percent Reporting Committing
Burglary	49.4
Robbery	43.8
Assault	32.3
Auto theft	23.8
Other theft	40.4
Forgery	22.9
Fraud	15.9
Drug dealing	43.4

NOTE: For each respondent and each crime type, two estimates of whether he committed each crime were calculated from his answers. (See Appendix A.) This table shows the maximum estimate. Tables A.3 to A.16 (Appendix A) show the average estimate and provide other details. The sample size for the lines in this table varies from 2108 to 2186, depending on how many of the 2190 respondents provided no information.

Table 2.2
COMMON COMBINATIONS OF CRIMES COMMITTED WHEN 256 POSSIBILITIES ARE ALLOWED

Rank Order	Crimes Committed										Number of Respondents	Percent
	Robbery	Assault	Burglary	Auto Theft	Other Theft	Forgery	Fraud	Drug Dealing				
1	0	0	0	0	0	0	0	0	0	0	263	12.8
2	0	0	0	0	0	0	0	0	0	1	112	5.4
3	0	1	0	0	0	0	0	0	0	0	105	4.8
4	0	0	1	0	0	0	0	0	0	0	66	3.2
5	0	0	0	0	1	0	0	0	0	0	59	2.9
6	1	0	0	0	0	0	0	0	0	0	52	2.5
7	1	0	1	0	0	0	0	0	0	0	50	2.4
8	1	1	1	1	1	0	0	1	1	1	47	2.3
9	0	1	0	0	0	0	0	1	1	1	42	2.0
10	0	0	1	0	0	1	0	0	0	0	41	2.0
11	0	0	0	0	0	0	0	1	0	0	37	1.8
12	1	0	1	0	0	0	0	0	0	0	30	1.5
13	1	1	1	0	1	0	0	1	1	1	28	1.4
14	1	1	1	1	1	1	1	1	1	1	26	1.3
15	1	1	1	1	1	1	1	1	1	1	25	1.2
19	1	1	1	0	1	0	0	0	0	0	24	1.1
19	1	1	1	0	0	0	0	0	0	0	24	1.1
19	1	1	0	0	0	0	0	0	0	0	24	1.1
19	0	0	1	0	0	0	0	0	0	1	24	1.1
Total in first 19 categories											1079	52.4
138 categories, each containing 2 to 23 respondents											935	45.4
99 categories, each containing no respondents or 1 respondent											44	2.1
Total											2058	100.0

NOTE: 132 respondents, not included in table, have missing data. One (1) indicates the crime type was committed during the measurement period; zero (0) indicates not committed.

combinations,* on the average 73 combinations would have been reported by fewer than two respondents, with a standard deviation of 4.9. So 99 is more than 5 standard deviations from the expected number, which has probability less than .001 of occurring by chance. For other reasons, too, the distribution in Table 2.2 is far from a random assignment of respondents to combinations. As an example, the combination that ranks 14th and includes 26 respondents consists of those who committed all eight crimes during the measurement period. If the different crime types were independent, this combination would occur with probability .000106, so there would be only one chance in five of observing even one respondent with this combination.

The most common combination comprises those respondents who said they did not commit any of the eight listed crimes. To what extent could they be telling the truth? Our evidence from the prisoner respondents, for whom we have official record data, shows that 42 percent of respondents who denied all eight crimes in Table 2.2 were convicted of crimes other than those eight (e.g., arson, kidnap, rape, other sex crimes),† so they might well have been truthful.

The next five combinations (those ranked from 2 to 6) each comprises respondents who said they committed only one of the eight types of crimes: drug dealing, assault, burglary, theft other than auto theft, and robbery. The following combinations in Table 2.2 are, with two exceptions, mixtures involving robbery, burglary, or both.

How can the combinations that are mixtures of two or more crime types be meaningfully aggregated and understood? We took two approaches to answering this question, one based empirically on the correlations among the yes-no activity variables for the crime types and the other based on an evaluation of the publicly perceived seriousness of the crime types. In the empirical analysis, both the correlation matrix

*That is, we assume for purposes of comparison that each of the eight crimes was committed independently of the others, with the probabilities shown (as percents) in Table 2.1.

†Fewer of the prisoner respondents (11.2 percent) than jail respondents denied committing all eight crimes in Table 2.2, consistent with the greater chance of being sentenced to jail for a minor crime not covered by the survey.

(Appendix A, Table A.17) and a factor analysis of the matrix (Table A.18) show that the following types of crimes tend to be committed by the same people:^{*}

- o Robbery and assault[†]
- o Burglary and auto theft
- o Theft, fraud, burglary, and robbery of persons
- o Forgery and fraud
- o Robbery (nonassaultive)
- o Drug dealing

In the analysis based on seriousness of crimes as perceived by the public, we relied on the ratio scores in the national survey of crime severity (Center for Studies in Criminology and Criminal Law, 1980). The types of crimes listed in Table 2.1 are not amenable to definitive classification of seriousness because they encompass criminal acts differing greatly in their details of interaction with and injury to the victim, use of weapons, locale, amount of money involved, etc. However, we gave each of them a maximum and minimum seriousness ratio score, shown in Table 2.3, by examining all the scenarios in the source national survey that corresponded to the crime type in question. These scores show that burglary, auto theft, other theft, forgery, and fraud cover approximately the same range of seriousness, while robbery, drug dealing, and assault cover wider ranges that include substantially higher levels of seriousness.

After we had examined the common combinations of crimes committed (Table 2.2), the factor analysis of activity variables, and the relative seriousness of crime types (Table 2.3), we concluded that meaningful and useful categories of criminal behavior could be obtained by joining forgery, fraud, auto theft, and other theft into a single crime type. These four crimes are likely to occur in the behavior patterns of the

^{*}This list describes six factors that account for 97 percent of the variance in a factor analysis whose details are in Table A.18.

[†]One of the survey questions refers to assault committed during robbery or burglary, which is obviously related to committing robbery. However, assault in other contexts is similarly associated with robbery.

Table 2.3

MINIMUM AND MAXIMUM SERIOUSNESS SCORES

Crime Type	Range of Crime Severity
Assault	6.18-52.94
Drug dealing	1.42-33.85
Robbery	4.38-21.08
Fraud	1.87-17.82
Burglary	2.77-15.56
Forgery	3.37-13.45
Auto theft	4.46-10.85
Other theft	1.39-10.96

SOURCE: Crime severity ratio scores for all scenarios corresponding to the crime type, Center for Studies in Criminology and Criminal Law (1980).

NOTE: Assault includes homicide.

same individuals, often in combination with other crimes. Moreover, the overall seriousness of an individual's criminal behavior is not much affected by interchanging these four crimes. For example, the behavior of the offender who commits robbery, assault, burglary, and auto theft is not necessarily more or less serious than that of the offender who commits robbery, assault, burglary, and forgery.

Table 2.4 shows the common combinations of crimes committed when forgery, fraud, auto theft, and other theft are joined into a single crime type. After the default combination (those who reported none of the survey crimes), the most common combination comprises those who did all of the five types of crime during the measurement period. The rank 3 combination comprises burglar-thieves, rank 4 is thieves, forgers, and frauds, and rank 5 is the robber, burglar, thief.

By arranging the categories in Table 2.4 in order of the range of overall seriousness of the behavior described, and then expanding the combinations so that they encompassed less common similar combinations, we obtained the ten varieties of criminal behavior shown in Table 2.5,

Table 2.4

COMMON COMBINATIONS OF CRIMES COMMITTED
WHEN 32 POSSIBILITIES ARE ALLOWED

Crimes Committed							
Rank Order	Robbery	Assault	Burglary	Forgery, Fraud, or Theft	Drug Dealing	Number of Respondents	Percent
1	0	0	0	0	0	263	12.7
2	1	1	1	1	1	256	12.3
3	0	0	1	1	0	171	8.2
4	0	0	0	1	0	168	8.1
5	1	0	1	1	0	153	7.4
6	1	0	1	1	1	142	6.8
7	0	0	0	0	1	112	5.4
8	1	1	1	1	0	111	5.3
9	0	1	0	0	0	105	5.1
10	0	0	1	1	1	101	4.9
11	0	0	0	1	1	73	3.5
Total in first 11 categories						1655	79.8
21 other categories						420	20.2
Total						2075	100.0

NOTE: 115 respondents, not included in table, have missing data. The missing cases differ slightly from Table 2.2.

plus the eleventh default category ("did none"). These eleven categories collectively encompass *all* of the respondents; no one belongs to any residual group.* The names chosen for each of the ten varieties of criminal behavior are intended primarily to permit reference to them in the text. They are not as precise as the definitions given in the table.†

* Respondents with missing data were, of course, not classified into the categories.

† The names for the varieties were controversial among reviewers of this work. We assure the reader that many alternatives were considered. The term "mere assaulters" is not intended to connote that assault, by itself, is not serious.

Table 2.5

DEFINITION OF HIERARCHICAL VARIETIES OF CRIMINAL BEHAVIOR

Group	Rank order of Example from Table 2.4	Robbery	Assault ^a	Burglary	Theft, ^b Fraud, Forgery, Credit Card Crimes	Drug Deals	Number of Respondents	Percent
Violent predators (robber-assaulter-dealers)	2	+	+	?	?	+	306	15.0
Robber-assaulters	8	+	+	?	?	0	160	7.8
Robber-dealers	6	+	0	?	?	+	188	9.2
Low-level robbers	5	+	0	?	?	0	240	11.8
Mere assaulters	9	0	+	0	0	0	105	5.1
Burglar-dealers	10	0	??	+	?	+	199	9.8
Low-level burglars	3	0	0	+	?	0	171	8.4
Property & drug offenders	11	0	??	0	+	+	128	6.3
Low-level property offenders	4	0	0	0	+	0	168	8.2
Drug dealers	7	0	0	0	0	+	<u>112</u>	<u>5.5</u>
					Total ^c		1777	87.1

NOTE: + = Group member commits this crime, by definition.
 0 = Group member does not commit this crime, by definition.
 ? = Group member may or may not commit this crime. Analysis shows that nearly all members of the group do.
 ?? = Group member may or may not commit this crime. Most don't.

^aAssault includes homicide arising out of assault or robbery.

^bTheft includes auto theft.

^cThe remaining 12.9 percent did not report committing any of the crimes studied. Respondents with missing data (150 out of 2190) were excluded in calculation of percentages. The missing cases differ from those in Table 2.4, because respondents who denied committing robbery but encountered victims while committing burglaries were categorized differently in the two cases.

The specific (nondefinitional) crimes reportedly committed by the inmates of each variety (Table 2.6) demonstrate and clarify several major patterns noted earlier:

- o Criminals who are involved with drugs are more likely to do a range of crimes than criminals who are not involved with drugs.
- o Most robbers also do burglary and theft. Robbers are more likely than burglars to do burglary when there is a good chance of personal encounters in the place being burglarized.
- o Robbers are more likely than any other type of criminal to do auto theft but generally less likely to do forgery or credit card crimes.
- o There are a nontrivial number of robbers who do not physically assault people.
- o Inmates who are *not* robbers and not "mere" assaulters, but who do assaults are virtually all dealing drugs. Since, as we discuss in Chap. 3, dealing drugs is virtually synonymous with taking drugs, this suggests that "burglars," "thieves," and "con men" are unlikely to assault someone physically unless they are drug users.

It was theoretically possible that some of the patterns of criminal behavior we have just discussed might appear in the total inmate study population but actually be idiosyncratic to one state. For example, "nonassaultive robbers" might have been present only in Michigan, or there might have been burglars in some states who tended to do more auto theft than robbers in their state.

However, when we examined the patterns of criminal activity by state, we found that such differences did *not* exist. Each state had at least some inmates whose behavior was described by all the different crime varieties. Moreover, the frequencies of specific crimes being committed by inmates in the same varieties were essentially the same across states; for example, most robbers also do burglary whether they are in Texas, Michigan, or California (see Table 2.7).

Table 2.6
 SPECIFIC CRIMES COMMITTED BY RESPONDENTS IN EACH VARIETY

Variety of Behavior	Percent Respondents in Each Variety who Committed the Crime ^a										
	Homicide	All ^b Robbery	Business Robbery	Person Robbery	Assault	Burglary	Burglary with Person Contact	Auto Theft	Other Theft	Fraud	Forgery-Credit Card Crimes
Violent predators	30	+	58	65	+	83	48	50	71	37	42
Robber-assaulters	33	+	46	59	+	79	44	34	49	15	16
Robber-dealers	-	+	41	43	-	79	45	39	57	22	32
Low-level robbers	-	+	31	31	-	64	41	22	38	10	13
Mere assaulters	36	-	-	-	+	-	-	-	-	-	-
Burglar-dealers	8	22	-	-	43	+	22	34	58	22	32
Low-level burglars	-	34	-	-	-	+	34	21	41	5	18
Property & drug offenders	10	-	-	-	43	-	-	21	52	34	47
Low-level property offenders	-	-	-	-	-	-	-	22	56	20	43
Drug dealers	-	-	-	-	-	-	-	-	-	-	-

NOTE: + = included by definition.
 - = excluded by definition.

^aMaximum estimate of crimes committed; includes inmates convicted of a crime even if they didn't say they did it.
^bIncludes robbery as an outgrowth of burglary, or as an admitted crime of conviction, which may not have been reported as either business robbery or person robbery.

Table 2.7

SPECIFIC CRIMES COMMITTED BY RESPONDENTS OF THREE VARIETIES IN EACH STATE

Crime Variety	N	Specific Crime	Percent of Respondents in Crime Complex Who Did Specific Crime			Sig. ^a
			California	Michigan	Texas	
Robber-assaulter-dealers (Violent predators)	306 ^b	Business robbery	60	57	55	0.50 n.s.
		Burglary	89	77	83	6.13 n.s.
		Burglary with personal contact	49	46	45	0.36 n.s.
		Theft (other than auto)	72	64	85	7.65 n.s.
		Auto theft	51	50	46	0.40 n.s.
		Fraud	34	39	45	2.37 n.s.
		Forgery & credit cards	47	33	44	5.48 n.s.
Burglar-dealers	199 ^c	Burglary with personal contact	18	30	18	3.27 n.s.
		Theft (other than auto)	62	49	62	2.94 n.s.
		Auto theft	27	39	36	2.18 n.s.
		Fraud	22	16	27	2.13 n.s.
		Forgery & credit cards	41	22	32	5.60 n.s.
				Burglary with personal contact	35	38
Low-level burglars	171 ^d	Theft (other than auto)	44	52	28	7.35 n.s.
		Auto theft	28	18	17	2.35 n.s.
		Fraud	9	4	4	1.52 n.s.
		Forgery & credit cards	15	14	24	2.15 n.s.

^a n.s. = not significant at .01 level.
^b 154 (California) + 98 (Michigan) + 54 (Texas).
^c 73 (California) + 67 (Michigan) + 59 (Texas).
^d 46 (California) + 56 (Michigan) + 69 (Texas).

There was, however, a significant difference in the proportion of inmates in each state that belonged to each variety of criminal behavior (Table 2.8). In general, there were more inmates in varieties which included robbery and drug dealing (and therefore a broader range of other crimes) in California than in Michigan, and more in Michigan than in Texas. Conversely, Texas was more likely to have inmates that were primarily income producers (not involved in combinations including assaults or drug dealing) than Michigan, and Michigan had more of the income producers than California. The mere assaulters and drug dealers, however, were generally found in the same proportion in the prison inmate population of all three states.

Comparing respondents in prison with those in jail in the same state, we did, of course, find different proportions of respondents in different varieties (Table 2.9). However, comparing the specific crimes

Table 2.8

MEMBERSHIP OF RESPONDENTS IN CRIME VARIETIES:
STATE DIFFERENCES

Crime Variety	Percent of Respondents of Each Variety		
	California	Michigan	Texas
Violent predators	21	13	10
Robber-assaulters	7	9	8
Robber-dealers	12	8	8
Low-level robbers	10	12	14
Mere assaulters	5	5	6
Burglar-dealers	10	9	10
Low-level burglars	6	8	12
Property & drug offenders	7	6	5
Low-level property offenders	7	9	8
Drug dealers	<u>6</u>	<u>6</u>	<u>5</u>
Total	90	85	86

² NOTE: Texas figures based on weighted sample.
 $\chi^2 = 72.76$; significance < 0.001. Statistic calculated for unweighted sample.

Table 2.9

PREVALENCE OF CRIME VARIETIES AMONG PRISON AND JAIL INMATES

Crime Variety	Percent of Respondents in Each Complex			
	California ^a		Michigan ^b	
	Prison	Jail	Prison	Jail
Violent predators	30	13	17	9
Robber-assaulters	9	5	12	6
Robber-dealers	14	10	9	8
Low-level robbers	14	7	15	7
Mere assaulters	5	5	4	6
Burglar-dealers	8	12	10	9
Low-level burglars	3	9	7	8
Property & drug offenders	5	9	5	7
Low-level property offenders	2	11	6	14
Drug dealers	<u>4</u>	<u>7</u>	<u>5</u>	<u>7</u>
Total	93	87	89	80

$\chi^2_a = 92$; significance < .0001.

$\chi^2_b = 55$; significance < .0001.

committed by the jail inmates and the prisoners who were in the same varieties (for example, specific crimes committed by robber-dealers in prison and robber-dealers in jail), we found very few differences (Table 2.10). Violent predators in prison tended to do more business robbery than violent predators in jail, but no other significant differences were found.

We were also interested in whether respondents convicted in counties with large central cities tended to be more (or less) serious offenders than those from more suburban counties. A comparison of the proportion of respondents who reported each of the varieties of criminal behavior did not reveal differences according to the nature of the central city (Table 2.11). Moreover, the types of crimes committed by respondents of a given variety did not differ according to the county of conviction (Table 2.12).

Table 2.10

SPECIFIC CRIMES COMMITTED BY RESPONDENTS OF THREE VARIETIES
IN PRISON AND JAIL

Crime Variety	Specific Crime	State	N	Percent of Respondents of Variety Who Did Specific Crime		χ^2	Sig. ^a
				Prison	Jail		
Violent predators	Business Robbery	California	154	68	44	7.09	.01
		Michigan	98	63	41	3.12	n.s.
	Burglary	California		86	94	1.25	n.s.
		Michigan		78	77	0	n.s.
	Burglary with personal contact	California		45	57	1.69	n.s.
		Michigan		45	50	0.66	n.s.
	Theft (other than auto)	California		70	74	0.09	n.s.
Michigan			60	71	0.64	n.s.	
Auto theft	California		46	61	2.63	n.s.	
	Michigan		49	53	0.05	n.s.	
Fraud	California		38	26	1.78	n.s.	
	Michigan		39	38	0	n.s.	
Forgery & credit cards	California		48	46	0	n.s.	
	Michigan		29	40	0.63	n.s.	
Burglar-dealers	Burglary with personal contact	California	73	14	20	.07	n.s.
		Michigan	67	31	28	0	n.s.
	Theft (other than auto)	California		54	67	0.67	n.s.
		Michigan		47	52	0.01	n.s.
	Auto theft	California		27	28	0	n.s.
Michigan			37	41	.02	n.s.	
Fraud	California		25	75	0.50	n.s.	
	Michigan		24	7	2.27	n.s.	
Forgery & credit cards	California		39	43	.01	n.s.	
	Michigan		21	24	0	n.s.	
Low-level burglars	Burglary with personal contact	California	46	20	39	.53	n.s.
		Michigan	56	35	41	.04	n.s.
	Theft (other than auto)	California		60	40	.58	n.s.
		Michigan		62	41	1.76	n.s.
	Auto theft	California		40	25	.29	n.s.
Michigan			14	22	.22	n.s.	
Fraud	California		10	8	0	n.s.	
	Michigan		3,4	3.7	0	n.s.	
Forgery & credit cards	California		10	17	.00	n.s.	
	Michigan		17	11	.07	n.s.	

^a n.s. = not significant at .01 level.

Table 2.11

COMPARISON OF CRIME VARIETIES BY COUNTY OF CONVICTION

Crime Variety	Percent of Respondents of Each Variety	
	Medium City ^a	Large City ^a
Violent predators (robber-assaulter-dealers)	16	14
Robber-assaulters	7	8
Robber-dealers	11	8
Low-level robbers	11	12
Mere assaulters	5	5
Burglar-dealers	11	9
Low-level burglars	9	8
Property & drug offenders	6	7
Low-level property offenders	7	9
Drug dealers	<u>5</u>	<u>6</u>
Total	88	87

NOTE: $\chi^2 = 12.15$; not significant at .01 level.

^aConvicted in a county with a large central city or a medium-sized city.

To summarize, the same varieties of criminal behavior were found in the three states, in large and small cities, and in both prisons and jails. The relationship between the crime varieties and the rate at which crimes were committed is discussed in a later section of this chapter.

STABILITY OF CRIMINAL BEHAVIOR

The varieties themselves would have little interest if the variety of criminal behavior to which offenders belong were unstable over time-- for example, most offenders changing from one variety to another over the course of a year and possibly returning later to the same variety. Under such temporal instability, to say that an offender belongs to a particular variety would have little or no predictive value for anticipating the types of crimes he would later commit or the rates at which

Table 2.12

SPECIFIC CRIMES COMMITTED BY RESPONDENTS OF THE SAME
CRIME VARIETY: COMPARISON BY COUNTY OF CONVICTION

Specific Crime	State	N	Percent of Respondents in Complex Who Did Specific Crime			Sig. ^a	
			Medium City	Large City	χ^2		
Violent predators	Business robbery	California	154	64	57	.44	n.s.
		Michigan	98	45	65	3.00	n.s.
		Texas	54	81	43	5.07	n.s.
	Burglary	California		93	86	1.08	n.s.
		Michigan		87	71	2.40	n.s.
		Texas		69	89	2.01	n.s.
	Burglary with personal contact	California		54	45	0.91	n.s.
		Michigan		53	42	0.60	n.s.
		Texas		38	49	0.20	n.s.
	Theft (other than auto)	California		79	66	2.29	n.s.
		Michigan		66	62	0.02	n.s.
		Texas		88	83	0.00	n.s.
	Auto theft	California		51	51	0	n.s.
		Michigan		50	50	0	n.s.
		Texas		41	49	.05	n.s.
	Fraud	California		34	34	0	n.s.
		Michigan		32	43	.67	n.s.
		Texas		44	46	0	n.s.
	Forgery & credit cards	California		50	45	.17	n.s.
		Michigan		24	38	1.65	n.s.
		Texas		39	38	1.31	n.s.
Burglar-dealers	Burglary with personal contact	California	73	18	17	0	n.s.
		Michigan	67	27	33	.04	n.s.
		Texas	59	0	23	1.96	n.2.
	Theft (other than auto)	California		63	61	0	n.s.
		Michigan		54	43	.39	n.s.
		Texas		71	59	.26	n.s.
	Auto theft	California		19	33	1.12	n.s.
		Michigan		32	47	.88	n.s.
		Texas		20	41	1.32	n.s.
	Fraud	California		19	24	.03	n.s.
		Michigan		14	20	.15	n.s.
		Texas		47	21	2.68	n.s.
	Forgery & credit cards	California		36	45	.36	n.s.
		Michigan		22	23	0	n.s.
		Texas		40	30	.18	n.s.
Low-level burglars	Burglary with personal contact	California	46	48	52	0	n.s.
		Michigan	56	36	39	0	n.s.
		Texas	69	50	25	2.5	n.s.
	Theft (other than auto)	California		57	32	1.86	n.s.
		Michigan		61	43	1.14	n.s.
		Texas		25	29	0	n.s.
	Auto theft	California		25	32	.03	n.s.
		Michigan		7	29	3.04	n.s.
		Texas		13	19	.05	n.s.
	Fraud	California		8	9	0	n.s.
		Michigan		7	0	.52	n.s.
		Texas		0	6	.07	n.s.
	Forgery & credit cards	California		17	14	0	n.s.
		Michigan		14	14	0	n.s.
		Texas		27	23	0	n.s.

^an.s. = not significant at .01 level.

he would commit them. Moreover, it would be unlikely that personal characteristics, especially activities as a juvenile, would be strongly associated with membership in a particular variety, since a given individual, with fixed characteristics, would belong to different varieties depending on the time at which he happened to be examined.

Here we present some evidence to the opposite effect, namely that individuals tend to belong to a single variety or to naturally related pairs of varieties. When offenders do make transitions among varieties as they get older, transitions appear to be primarily upward in seriousness (according to the serial ranking of varieties as we have defined them). Our evidence in regard to temporal transitions is quite weak, for two reasons:

1. All the offenders in our sample were arrested at the end of the measurement period for a crime that was sufficiently serious that they were convicted and sentenced to jail or prison. By a selection effect, therefore, one would expect that many members of the sample engaged in more serious criminal behavior during their measurement period than they typically (or ever) did previously.
2. Our data concerning the respondent's criminal activities prior to the measurement period were not collected contemporaneously with those activities. Instead they were collected on the same survey instrument and at the same time as information about activities during the measurement period. (See pp. 42 and 43 of the survey booklet, reproduced in App. E.) If the respondent had any confusion about the time periods prior to the measurement period (and many did, see App. B), or could not remember what he was doing during the period prior to the measurement period, or simply developed a set pattern of responses to questions in the survey, it seems likely he would describe approximately the same criminal behavior in the various time periods.

Nonetheless, by keeping these limitations in mind, reasonably coherent and compelling interpretations of the data can be obtained.

Three transition matrices are shown as Tables 2.13, 2.14, and 2.15. Table 2.13 shows transitions among varieties of behavior during the four years prior to the measurement period. It compares the respondent's variety of behavior during the first two of these years with his variety during the last two. Table 2.14 shows transitions from varieties in the two years before the measurement period to varieties during the measurement period. Table 2.15 is the backward transition matrix corresponding to Table 2.14.

In all three tables, respondents who were not in any of the varieties (as we defined them) during the measurement period have been excluded. Consequently, entries labeled "Not doing these crimes" can be interpreted in light of the fact that in the measurement period the respondents in these categories *did* do one or more of the crimes covered in the survey.

Examining Table 2.13, we can see that among the respondents who were active in one or more of the study crimes during the four years preceding the measurement period (77 percent of those who were active during the measurement period), the vast majority reported the same variety of criminal behavior for both two-year subperiods or switched between inactivity and one of the varieties. For every variety, 45 percent or more of respondents who reported that variety of behavior 3 to 4 years before the measurement period also reported the same variety during the two years preceding the measurement period.

Aside from stopping crime commissions altogether, the predominant pattern was for respondents to have continued committing the same variety of behavior or to have made a transition to a more serious variety. The percentages making transitions to less serious varieties were as follows:

Violent predators	14 percent
Robber-assaulters	23
Robber-dealers	23
Low-level robbers	9
Mere assaulters	18
Burglar-dealers	8
Low-level burglars	5
Property & drug offenders	10
Low-level property offenders	1

Table 2.13

FORWARD TRANSITION MATRIX

Percent of Original Category Entering Final Category
(Respondents not doing these crimes in measurement period excluded)

Variety of Criminal Behavior Three and Four Years Prior to Measurement Period (Window 1)	Variety of Criminal Behavior During Two Years Preceding the Measurement Period (Window 2)											Not Doing These Crimes
	Violent Predators	Robber- Assaulters	Robber- Dealers	Low- Level Robbers	Mere Assaulters	Burglar- Dealers	Low- Level Burglars	Property & Drug Offenders	Low- Level Property Offenders	Drug Dealers	Locked Up	
Violent predators	68	2	7	2	0	3	0	0	0	0	5	13
Robber-assaulters	20	49	0	13	2	2	0	2	4	0	0	7
Robber-dealers	13	2	53	2	0	3	0	8	5	0	0	10
Low-level robbers	12	8	11	49	0	3	4	0	1	0	0	11
Mere assaulters	0	0	0	6	56	6	6	0	0	0	0	22
Burglar-dealers	14	2	7	0	0	64	2	2	1	0	0	4
Low-level burglars	3	1	3	5	1	16	55	1	3	0	0	14
Property & drug offenders	8	2	12	0	0	16	0	45	2	0	0	6
Low-level property offenders	3	2	1	4	1	6	15	4	49	1	0	15
Drug dealers	1	0	7	0	0	12	1	6	3	68	0	4
Locked up	0	0	0	0	0	1	0	17	0	33	17	17
Not doing these crimes	1	1	2	5	2	4	9	2	8	6	0	61

Table 2.14

FORWARD TRANSITION MATRIX

Percent of Original Category Entering Final Category
(Respondents not doing these crimes in measurement period excluded)

Variety of Criminal Behavior During Two Years Preceding the Measurement Period (Window 2)	Variety of Criminal Behavior During the Measurement Period (Window 3)									
	Violent Predators	Robber-Assaulters	Robber-Dealers	Low-Level Robbers	Mere Assaulters	Burglar-Dealers	Low-Level Burglars	Property & Drug Offenders	Low-Level Property Offenders	Drug Dealers
Violent predators	72	3	11	0	2	7	0	3	0	3
Robber-assaulters	28	43	4	12	2	0	2	4	2	4
Robber-dealers	50	1	23	2	1	7	2	10	0	0
Low-level robbers	22	24	12	33	0	1	2	2	2	1
Mere assaulters	4	15	4	15	37	7	0	15	0	4
Burglar-dealers	27	4	25	4	2	30	2	4	0	2
Low-level burglars	4	14	7	30	1	8	29	0	5	2
Property & drug offenders	24	2	15	3	0	14	0	39	2	2
Low-level property offenders	9	12	5	15	1	2	15	5	36	2
Drug dealers	10	2	16	2	0	15	3	14	2	35
Locked up	40	0	0	0	20	0	0	20	0	20
Not doing these crimes	6	6	4	19	16	6	14	3	19	8

Table 2.15

BACKWARD TRANSITION MATRIX

Percent of final category coming from previous category

Variety of Criminal Behavior During Two Years Preceding the Measurement Period (Window 2)	Variety of Criminal Behavior During the Measurement Period (Window 3)									
	Violent Predators	Robber-Assaulters	Robber-Dealers	Low-Level Robbers	Mere Assaulters	Burglar-Dealers	Low-Level Burglars	Property & Drug Offenders	Low-Level Property Offenders	Drug Dealers
Violent predators	27	2	7	0	2	5	0	3	0	3
Robber-assaulters	5	16	1	3	1	0	1	2	1	2
Robber-dealers	16	1	15	1	1	4	1	10	0	0
Low-level robbers	8	18	7	15	0	1	1	2	1	1
Mere assaulters	0	3	1	2	11	1	0	4	0	1
Burglar-dealers	18	6	28	3	3	38	3	8	0	3
Low-level burglars	3	20	9	28	1	12	39	0	7	3
Property & drug offenders	5	1	5	1	0	6	0	26	1	1
Low-level property offenders	4	11	4	9	1	1	12	7	30	2
Drug dealers	5	2	13	1	0	14	3	22	2	49
Locked up entire period	1	0	0	0	1	0	0	1	0	1
Not doing these crimes	9	20	11	38	78	18	40	14	58	34

A strong tendency for those who deal drugs to continue doing so can be observed in the upward transitions in Table 2.13 from varieties of behavior involving drug dealing to other varieties involving drug dealing. For example, property & drug offenders become burglar-dealers, robber-dealers, or violent predators (assaultive-robber-dealers); they do not become low-level burglars or low-level robbers. Burglar-dealers become robber-dealers or violent predators; they are unlikely to become low-level robbers or assaultive (nondealing) robbers.

Table 2.14 confirms these general patterns of transitions two years later in time. The transitions to varieties having higher levels of seriousness are more pronounced in Table 2.14, presumably because of the selection effect noted earlier. The fact that Table 2.14 differs from Table 2.13 in exactly the way that would be anticipated from a selection effect suggests that respondents were not all unthinkingly answering questions about their past crimes, or following a set pattern of responses; on the contrary, a good number of them must have been describing their actual past criminal behavior.

Table 2.15, the backward transition matrix, gives a different perspective on the same information. It shows that of those who reported a given variety during the measurement period, only a minority reported the same variety during the preceding two years. Most either reported a combination of less serious crimes or were not active in the study crimes prior to the measurement period. The respondents who only committed assault (which includes homicide) are most notable in this regard; over three-quarters of them had not been involved in any of the study crimes during the preceding two years, and about half of the remainder had not committed assault.

The property & drug offenders are an exception to the general pattern that offenders tend to come from lower-level varieties. They include many who had been committing more serious crimes in previous periods. But the continuity of drug dealing is apparent in their past activities (dealer, robber-dealer, etc.). Only 14 percent of them had been active in none of the study crimes during the preceding two years.

All other groups that had been over 80 percent active in one or more of the study crimes during the previous two years included drug

dealing in their repertoire: burglar-dealers (82 percent previously active), robber-dealers (89 percent), and violent predators (91 percent).

CRIME COMMISSION RATES

In the survey booklet, after answering "yes" that he had committed a given type of crime, say, burglary, during the measurement period, the respondent was asked to tell how many burglaries he had committed by specifying a range, either "1 to 10" or "11 or more." If the range was "1 to 10," he was asked, "How many?" If the range was "11 or more," he was led through a sequence of questions about the number of months in which he committed burglary and his daily, weekly, or monthly rate of commission.* (See survey page 16, App. E, for the format of the question.)

From the information provided by the respondent, which was sometimes incomplete or self-contradictory, we calculated two estimates of his annualized crime commission rate: a minimum estimate and a maximum estimate.† For most respondents and most crime types, the two estimates coincide. In this report we use each individual's average value between his minimum and maximum estimate for each crime type.‡ The annualized rate can be interpreted as the number of crimes committed per year of free time, since it takes into account the length of time the respondent was incarcerated during his measurement period. For example, if a respondent's measurement period lasted 14 months, of which he spent 5 months in jail, and he reported committing 6 burglaries, his annualized crime rate would be:

$$\begin{aligned}\lambda &= (6 \text{ burglaries}) \cdot (12 \text{ months/year}) / (14-5) \text{ months} \\ &= 6 \cdot \frac{12}{9} \text{ burglaries/year} \\ &= 8.0 \text{ burglaries/year.}\end{aligned}$$

* Peterson et al. (1982) describe the pretests that led to this choice of questionnaire format.

† Appendix A gives details of the calculation.

‡ However, the tables in App. A show mean crime commission rates for both the minimum and maximum estimates.

Based on tests of consistency and reliability of data provided by respondents (App. B), we believe that statistics such as medians and averages, describing crime commission rates for large groups of respondents, are generally accurate within a factor of 1.5. However, these crime commission rates should not be viewed as applicable to offenders in the community. They refer only to a cohort of incoming prison or jail inmates in the counties chosen for this study. Selection effects and other factors cause these rates to be substantially higher than those for "typical" offenders (Rolph, Chaiken, and Houchens, 1981). Moreover, to the extent that differences in crime commission rates are found among the three study states or among counties, these can possibly be attributed to differences in practices of the criminal justice system rather than to differences in the behavior of offenders.

Shape of the Distributions

Even among people who have been incarcerated in prisons and jails, the vast majority of those who commit any particular type of crime do so rather infrequently. Typical respondents who committed assaults, for example, reported one, two, or three assaults during their one-to-two-year measurement period, resulting in an annualized rate of less than 3 per year. The pattern for auto thefts was similar and only slightly higher: Most respondents who committed auto theft did so at an annualized rate under 3.5 per year.

Table 2.16 shows the median crime commission rates for the crimes under study. They range from a low of 2.4 assaults per year to 100 drug deals per year. Excluding drug deals and categories that are combinations of crimes, all the median crime commission rates are under 9 per year. Although the table shows these statistics for the entire study group, the medians are, with one exception, * also under 9 per

* Among California prisoners the median commission rate for theft (other than auto) was 16.

Table 2.16

ANNUALIZED CRIME COMMISSION RATES
All Respondents Who Commit the Crime, Three States^a

Crime Type	Median ^b	90-Percentile ^b
Burglary	5.45	232
Robbery	5.00	87
Business robbery	4.60	57
Person robbery	4.29	57
Assault	2.40	13
Theft	8.59	425
Other than auto	8.00	485
Auto	3.43	77
Forgery & credit cards	4.50	206
Fraud	5.05	258
Forgery + Fraud + Theft	10.29	531
Forgery + Fraud + Theft + Burglary	16.00	634
All except drug dealing	14.77	605
Drug dealing	100	3251
Total	41.60	2126

^aAdjusted, by weighting Texas prisoner respondents, to reflect incoming cohorts to incarceration.

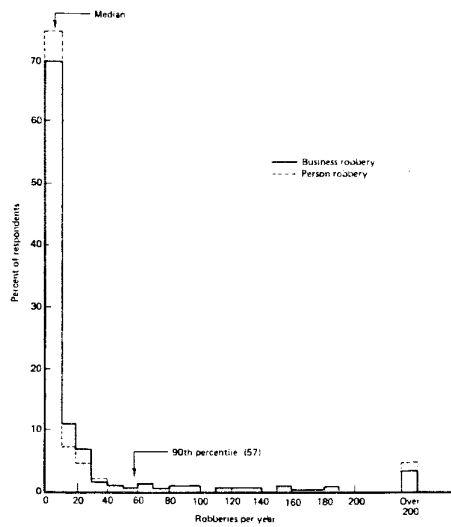
^bThe median and 90th percentile refer to those respondents who commit the crime in question. Fifty percent commit the crime at rates above the median; 10 percent commit the crime at rates above the 90th percentile. See Tables A.3 to A.17 in App. A for more information about the distributions of crime commission rates.

year for respondents in each of the three states and for prisoners separately from jail inmates.

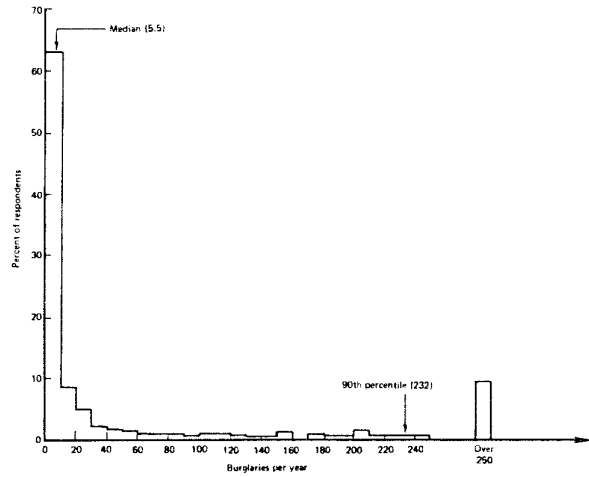
As the table also shows, however, the 90th percentiles of the distributions of these crime commission rates are substantially higher than the medians, generally in the range of 40 to 50 times higher. (Exceptions are robbery and auto theft.) If these distributions were even approximately symmetric (like a normal distribution), then, considering that crime rates cannot be below zero, the 90th percentiles would only be approximately twice the medians. So even from this limited amount of information it is easy to see that the distributions are not at all symmetric and are in fact highly skewed.

Figure 2.1 illustrates the shapes of these distributions and shows the extent to which they differ. All of the distributions have a heavy concentration near zero and a long, thin tail. The two types of robbery (Fig. 2.1(a)) have almost identical distributions, and, despite substantial statistical differences, the shape of the distributions for robbery appears similar to the shape of the distributions for burglary (Fig. 2.1(b)), auto theft (Fig. 2.1(c)), and forgery/credit cards (Fig. 2.1(d)). Theft other than auto (Fig. 2.1(e)) also appears similar to these, but at twice the scale. Two crime types appear visually to be substantially different: Assault (Fig. 2.1(f)) has a very short tail, and drug dealing (Fig. 2.1(g)) has a very long tail. The sum of all study crimes other than drug dealing (Fig. 2.1(h)) takes its shape primarily from the theft crimes, which constitute the largest component.

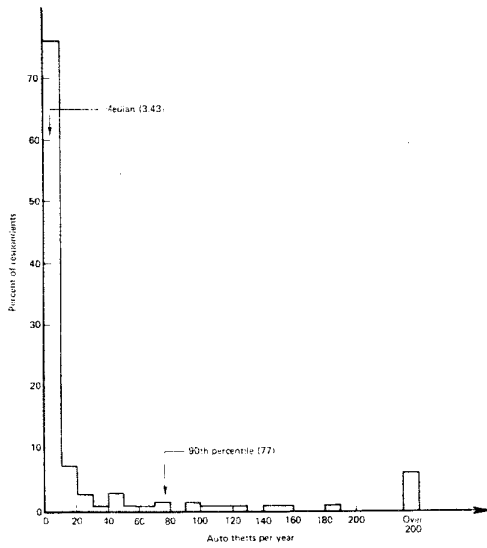
The shape of the crime rate distributions suggests, perhaps, that if the study population were divided in fairly obvious ways into more homogeneous subgroups, the heavy concentration below 10 crimes per year would fall almost entirely in one subgroup, leaving a more even distribution among the other offenders. However, in the remainder of this section we show that many different ways of dividing the offenders into groups leave each subgroup with distributions that look like Fig. 2.1: Most of the offenders in the group who commit any given crime do so at low rates.



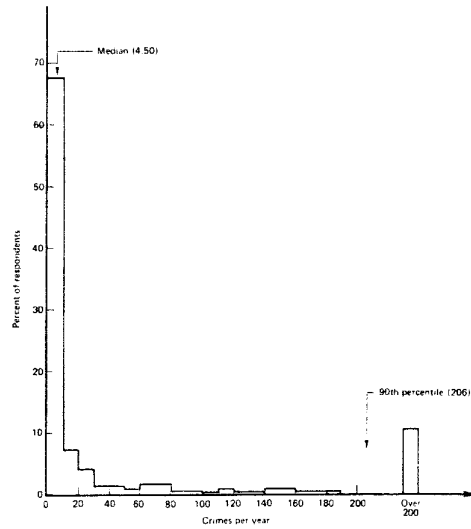
2.1 (a) Two types of robbery (for respondents who commit each type)



2.1 (b) Burglary

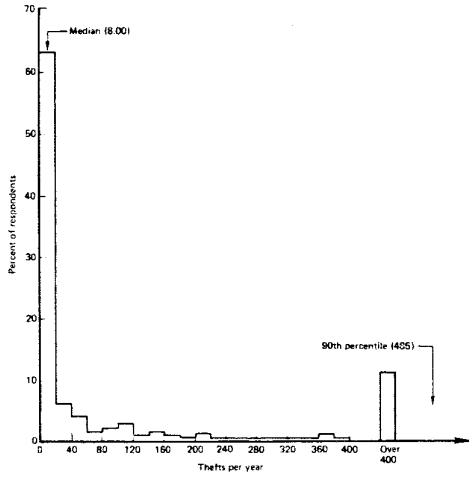


2.1 (c) Auto theft

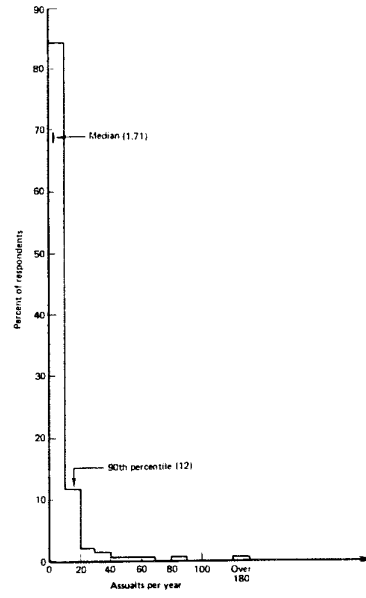


2.1 (d) Forgery and using bad or stolen credit cards

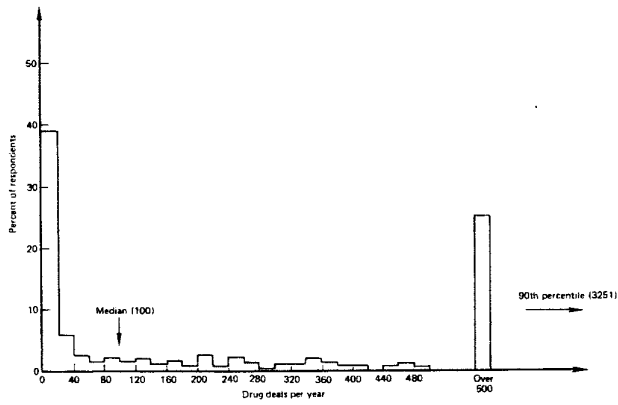
Fig. 2.1 — Distributions of annualized crime commission rates for respondents who commit the crimes



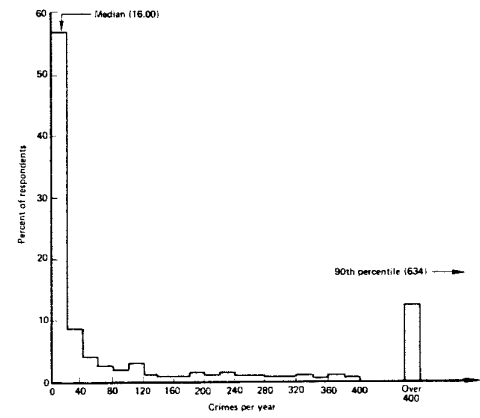
2.1 (e) Theft other than auto



2.1 (f) Assault



2.1 (g) Drug dealing



2.1 (h) Burglary, robbery, assault, theft, forgery, using bad credit cards, and fraud (all study crimes except drug dealing)

Fig. 2.1 – Continued

In characterizing distributions like these, the median is a poor descriptor because its magnitude gives little hint of the high crime-commission rates of the most active offenders. The mean, too, is a poor descriptor because it is unduly sensitive to the values of a few outlier crime-commission rates for the respondents who reported extremely high rates. Tabulations showing medians and means have been relegated to App. A.

Generally in this section, for descriptive purposes, we shall rely on the 90th percentile. This figure is appropriate for several reasons:

- o It is easy to calculate.
- o In comparing crime commission rates (e.g., for different crime types or different subgroups of offenders), we found that the 90th percentile provides approximately the same relative rankings as any other reasonably high quantile (e.g., the 80th percentile). By contrast, very substantial differences among states (and other subgroups) in the far tails of the distributions, which are not present in the bulk of the distributions, result in misleading fluctuations in mean values.
- o The 90th percentile is stable against fairly large errors (e.g., 30 percent) in the highest reported crime commission rates.
- o The offenders whose crime rates are near or above the 90th percentile can certainly be considered high-rate offenders, and yet they are not so few in number that they could be considered insignificant for policy purposes. For example, Table 2.16 shows that 10 percent or more of burglars commit over 232 burglaries per year. This corresponds to nearly 100 offenders just in our survey sample, which contains only a small percentage of the burglars in the three study states.

Differences Among the Study Sites

In terms of the numbers of types of crimes committed and their annualized commission rates, the offenders sampled in prison in

California and Michigan were substantially more active than those sampled in Texas prisons (Table 2.17). For each crime type, the California prisoners accounted for the largest fraction who committed the crime during the measurement period, and Michigan prisoners usually (but not always) were second. The 90th percentile of annualized crime rates were highest in California for business robbery, assault, theft, and drug dealing; highest in Michigan for person robbery, auto theft, and forgery; and approximately equal between California and Michigan for burglary and fraud. For only one crime type (theft other than auto) did the Texas prisoners report higher annualized commission rates (measured by the 90th percentile) than Michigan prisoners, while for most of the others the Texas prisoners were substantially lower than both Michigan and California.

The strongest differences in crime commission rates among the states were for burglary, business robbery, person robbery, and assault.* In particular:

- o Burglary. The Texas prisoners were much more likely to report having committed 2 or fewer burglaries per year, and much less likely to report 100 or more per year, than California or Michigan prisoners.
- o Business robbery. California prisoners who reported committing business robbery were much more likely than the others to have committed over 10 business robberies per year.
- o Person robbery and assault. Texas prisoners who robbed or assaulted persons did so at dramatically lower rates than the prisoners in the other two states.

* This was determined by selecting cut points appropriate to the crime type and performing grouped χ^2 tests. The cut points for all types of robbery were 1, 2, 3, 4, 5, 10, and 50 crimes/year; for assault and auto theft, 1, 2, 3, 4, 5, 10, and 20 crimes/year; for drug dealing, 5, 10, 50, 100, 500, 1000, and 3000 crimes/year; and for all other crimes, 1, 2, 3, 4, 5, 10, 50, 100, and 300 crimes/year. The grouped χ^2 method is preferable to testing significance of the differences of mean values across states, because the means are sensitive to outliers. All grouped χ^2 tests mentioned in this chapter have the same cut point.

Table 2.17

COMPARISON OF CRIME COMMISSIONS
AMONG PRISONER RESPONDENTS

Crime Type	Percent Committing Crime			90th Percentile Annualized Rate ^a		
	Calif.	Mich.	Texas	Calif.	Mich.	Texas
Burglary	54	45	47	384	400	112
Robbery	49	38	26	155	155	22
Business robbery	35	26	16	155	31	20
Person robbery	29	26	17	85	198	11
Assault	50	38	28	18	12	8
Theft	52	50	43	676	454	322
Other than auto	42	40	36	724	296	387
Auto	24	23	19	99	413	10
Forgery & credit cards	28	14	22	197	344	110
Fraud	19	16	14	268	263	180
Forgery + Fraud + Theft	63	58	54	788	522	413
Forgery + Fraud + Theft + Burglary	73	66	66	986	654	440
All except drug dealing	85	78	74	989	645	338
Drug dealing	54	41	35	4013	3612	2508
Total	90	84	80	3004	2005	1288

^a90th percentile refers to crime commission rate of respondents who commit the crime. See Tables A.3 to A.16 in App. A for further details of these distributions.

The distinctions among the three states in respondents' crime commission rates for theft were much less pronounced than in their rates for the four crimes described above, and the distinctions among the states in their rates for fraud and for forgery and using bad credit cards were insignificant.

Even in the cases where the respondents' annualized rates for a crime differed significantly among the states, the *general* shapes of the

distributions were nonetheless similar in each state: a highly skewed distribution with a heavy concentration near zero and a long, thin tail. This similarity is illustrated for the crime of burglary in Fig. 2.2.

Comparison of Jail Inmates with Prison Inmates

Within a given state, jail inmates were generally less likely to commit each of the crimes studied here than were prison inmates (Table 2.18)* (primarily because more jail inmates are convicted of crimes other than the ones studied). Among offenders who do commit a given crime, however, the annualized crime commission rates were typically not significantly different between jail inmates and prison inmates in the same state (Table 2.19). Moreover, setting aside the issue of significance, jail respondents did not always have lower crime commission rates than those in prison, nor were the relationships between jail and prison consistent between states. For example, Michigan jail inmates who committed theft (other than auto) did so at slightly higher rates than the prison inmates in our sample, but the reverse was true for California prison and jail inmates.†

The only crime type for which a significant jail/prison difference was found was business robbery. In California, high-rate business robbers are significantly more common among the prison population than among jail populations from the same counties. In fact, the 90th percentile for annualized business robbery rate among California prisoner respondents was 155 robberies per year, compared with 58 for California jail respondents.

Comparison of Offenders Reporting Different Varieties of Criminal Behavior

We found out categorization of offenders into 10 varieties of criminal behavior conceptually very useful for understanding crime

* In our sample, the only exception to this observation was a slightly lower percentage of Michigan prisoners than Michigan jail inmates who were active in forgery and credit card deals.

† These comparisons are based on 90th percentiles in cases where the distributions are not significantly different. (See Table 2.19.)

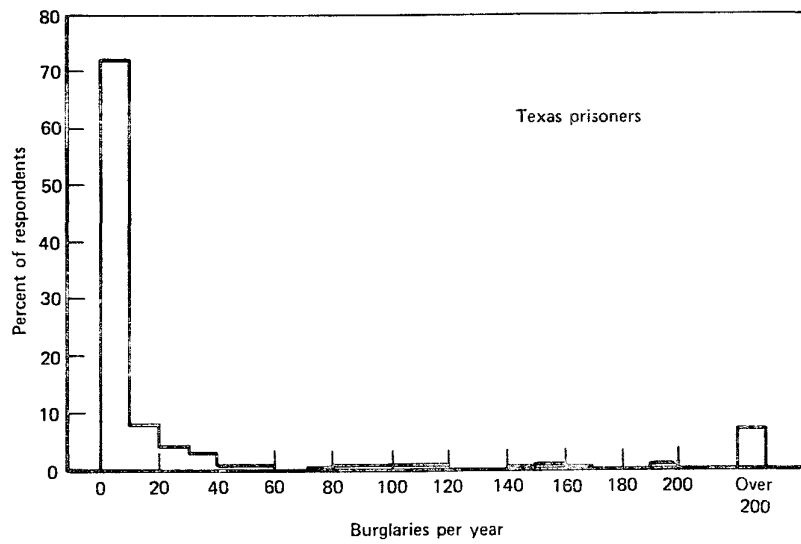
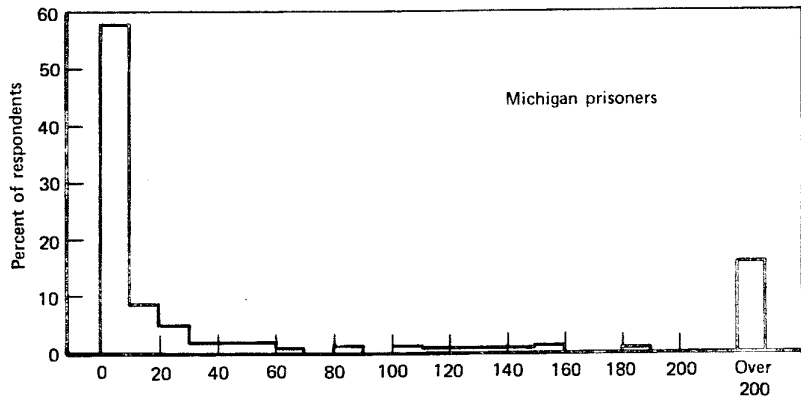
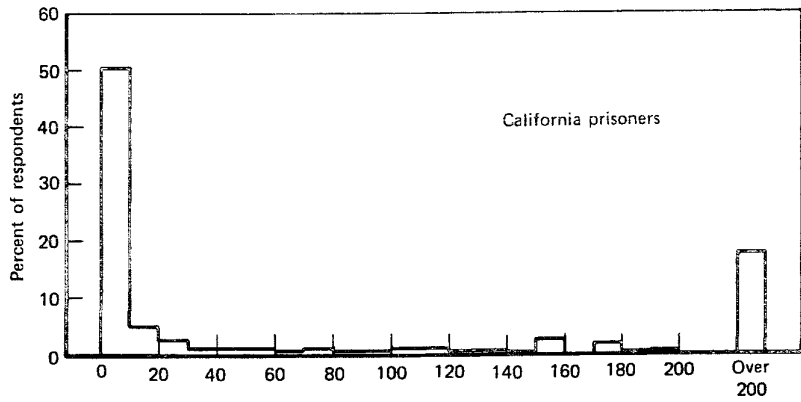


Fig. 2.2 — Comparisons of distributions of annualized burglary rates — three states: respondents who commit burglary

Table 2.18

COMPARISON OF PERCENT COMMITTING STUDY CRIMES
BETWEEN PRISONERS AND JAIL INMATES

Crime Type	Percent Committing the Crime					
	California		Signif. Diff. .01 ^a	Michigan		Signif. Diff. .01
	Prison	Jail		Prison	Jail	
Burglary	54	43	Yes	45	35	Yes
Robbery	62	35	Yes	51	31	Yes
Business robbery	35	11	Yes	26	8	Yes
Person robbery	30	18	Yes	26	15	Yes
Assault	50	30	Yes	38	26	Yes
Theft	52	50	No	50	39	Yes
Other than auto	42	42	No	40	31	Yes
Auto	24	21	No	23	16	Yes
Forgery & credit cards	29	25	No	14	16	No
Fraud	19	16	No	16	11	No
Forgery + Fraud + Theft	63	60	No	58	48	Yes
Forgery + Fraud + Theft + Burglary	74	68	No	66	58	No
All except drug dealing	85	75	Yes	78	67	Yes
Drug dealing	54	45	Yes	41	36	No
Total	90	82	Yes	84	74	Yes

^aSignificant difference at .01 level.

commission rates. We found that offenders who reported a given variety commit each crime type at similar rates, independent of the state in which they were sampled or whether they were found in prison or jail. However, the differences in crime commission rates among crime varieties were very pronounced.

More precisely, we found that among offenders reporting a given variety of criminal behavior, every annualized crime commission rate

Table 2.19

COMPARISON OF ANNUALIZED CRIME RATES BETWEEN PRISONERS AND JAIL INMATES

Crime Type	Crime Rate ^a					
	California		Signif. Diff. .01 ^b	Michigan		Signif. Diff. .01
	Prison	Jail		Prison	Jail	
Burglary	384	189	No	400	213	No
Robbery						
Business robbery	155	58	Yes	31	96	No
Person robbery	85	80	No	198	33	No
Assault	17	12	No	10	14	No
Theft						
Other than auto	724	583	No	296	384	No
Auto	99	56	No	413	43	No
Forgery & credit cards	197	269	No	344	77	No
Fraud	268	327	No	263	367	No
Drug dealing	4013	3251	No	3612	3055	No

^a90th percentile of distribution, for those who commit the crime.

^bSignificantly different at .01 level by grouped χ^2 test.

was not significantly different from one state to another or between prison inmates and jail inmates.* The similarity of crime rates was found for the crimes that are definitionally determined for offenders in a variety and also (among those respondents who commit the crimes) for all other crimes not definitionally excluded. This suggests that the varieties of criminal behavior are cogent characterizations of important distinctions among criminal offenders, and the main explanation for differences in crime rates among various populations of offenders lies in the relative prevalence of the various varieties in those populations.

*Tests were made by grouped chi-square. Some large differences from state to state, and between prison and jail, exist in the far tail of the distribution, but they are not relevant for this test.

Table 2.20 shows the disparity of the presence of high-rate offenders among the different varieties. The violent predators not only commit three or more types of crimes, but they do so at high rates. They have the highest annualized rates for robbery, assault, and drug dealing (the crimes that define this variety) and also for burglary. The highest rate for theft is found among thieves who also deal drugs (and/or commit assault).

A notable observation is that offenders who commit a single crime ("specialists") do so at substantially lower rates than offenders who commit that crime and also other crimes. In particular:

- o Fully 90 percent of robbers who do not commit assault and do not deal drugs commit fewer than 10 robberies per year, whereas 10 percent of robber-assaulter-dealers (violent predators) commit over 135 robberies per year.
- o Ninety percent of offenders who commit only assault commit fewer than 3.5 assaults per year. However, nearly 60 percent of violent predators commit more than 3.5 assaults per year.
- o Only 10 percent of burglars who do not commit robbery commit over 150 burglaries per year. However, 20 percent of violent predators commit at least this many burglaries per year.
- o Offenders who deal drugs but do not commit any other crimes studied here have on the whole lower annualized drug dealing rates than do robbers who also assault and deal drugs.

The strength of the differences in crime commission rates among varieties of criminal behavior is illustrated by Fig. 2.3, which compares the distribution of business robbery for violent predators and for low-level robbers.

INTERPRETATION OF THE VARIETIES OF CRIMINAL BEHAVIOR

On the whole, the varieties of criminal behavior we defined in Table 2.5 constitute a hierarchical ordering of the patterns observed in the survey data (the mere assaulters being a major exception). Offenders in varieties at the top of the list commit more, and more

Table 2.20
 COMPARISON OF COMMISSION RATES OF HIGH-RATE OFFENDERS AMONG VARIETIES OF CRIMINAL BEHAVIOR
 90th Percentile Value of Annualized Crime Rate^a

Variety of Criminal Behavior	Robbery				Assault	Burglary	Theft	Forgery & Credit Cards	Fraud	Drug Dealing
	All ^b	Business	Person	Person						
Violent predators	135	96	82	18	516	517	200	278	4088	
Robber-assaulters	65	46	38	14	315	726	27	293	--	
Robber-dealers	41	60	32	--	377	407	255	106	2931	
Low-level robbers	10	15	9	--	206	189	78	811	--	
Mere assaulters	--	--	--	3.5	--	--	--	--	--	
Burglar-dealers	--	--	--	6	113	406	274	64	2890	
Low-level burglars	--	--	--	--	105	97	62	36	--	
Property & drug offenders	--	--	--	9	--	663	283	264	3302	
Low-level property offenders	--	--	--	--	--	560	486	1160	--	
Drug dealers	--	--	--	--	--	--	--	--	3035	

Significant difference across varieties? (all crime rates considered)^c

Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

^aTen percent of the respondents in the crime variety who commit the crime commit it at or above the rate indicated in the table (a different 10 percent for each crime). Table 2.6 shows the percentage who commit the crime. Further information about these distributions is in Table A.19 at the end of App. A.

^b"All" robbery is not the sum of business and person robbery. It includes also robberies that were reported as outgrowths of burglary and could not be classified as either business or person robbery.

^cSignificance test is by grouped χ^2 at the .01 level. The test does not refer to the 90th percentiles. Respondents who did not commit the crime are excluded in the test.

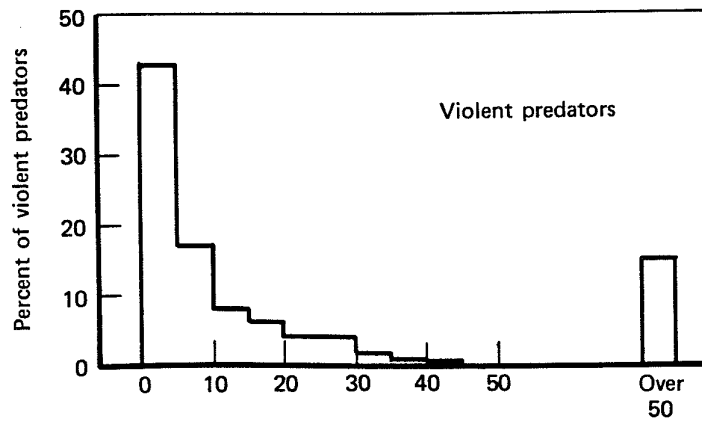
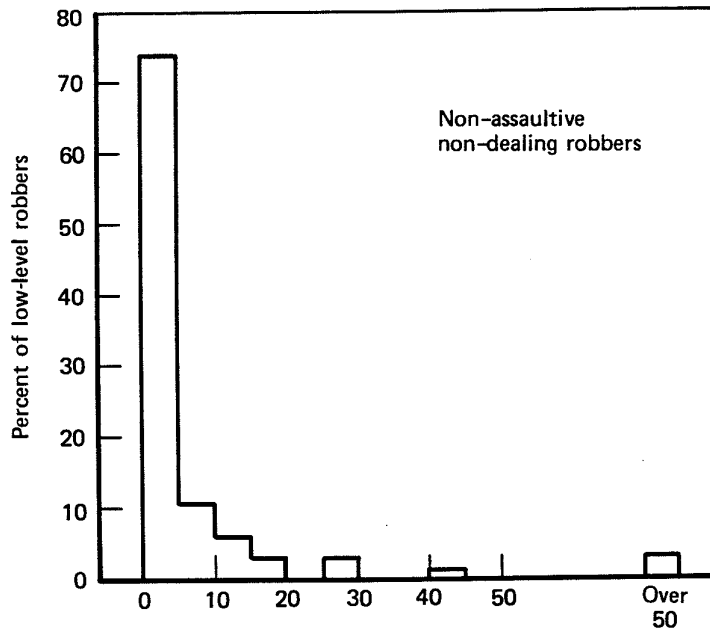


Fig. 2.3 — Distributions of annualized commission rate for business robbery: robbers of two varieties

serious, types of crimes than those in lower varieties, and they are more likely to commit both the serious and the less serious crimes at high annualized rates. Moreover, to the extent that we can discern how offenders make transitions among varieties as their criminal careers progress, they tend to move to more serious varieties (or else they stop committing crimes altogether).

In this section we discuss some interpretations of the varieties and the relationships among them.

Comparison with Typologies

By no means do we view the varieties as a comprehensive typology of offenders. The survey asked about a limited collection of crime types, and therefore we have a substantial residual group of offenders who could not be classified. In addition, the sample simulates an incoming incarceration cohort; therefore, some types of criminals are not represented in the sample.

We do, however, find congruence between our empirically generated varieties of behavior and categories in more comprehensive and theoretically generated typologies of offenders. More specifically, the violent predator closely resembles Irwin's "State raised youth" (Irwin, 1970), Glaser's "Vocational Predators" (Glaser, 1972), and Gibbons's "Professional/'Heavy' Role Career" (Gibbons, 1968). Similarly, the mere assaulter appears to be a mixture of Irwin's "lower class" and "Square John," Glaser's "Subcultural Assaulter" and "Quasi-Insane Assaulter," and Gibbons's "Personal Offender," "One-Time Loser," and "Psychopathic Assaultist Role Career." These comparisons are clarified by the descriptions of offenders' personal characteristics in Chaps. 3 and 4.

The Issues of Specialization

Several studies in the past few years suggest that criminal "specialists" do not exist (e.g., Figlio, 1981; Peterson and Braiker, 1981). They point out that persons with long arrest histories most often have arrests for a variety of crimes (Wolfgang, Figlio, and Sellin, 1972; Holland et al., 1981). In addition, Peterson and Braiker (1981)

studied self-report data about criminal acts similar to the data we examined here, and they noted that few inmates report doing only one kind of crime. These findings are interpreted as evidence that no stable, specialized patterns of criminal activities exist.

Our findings are similar, but we interpret them differently. For example, among the common combinations of crimes committed when 256 possibilities are allowed (Table 2.2), the patterns consisting of one and only one crime were as follows:

<u>Rank Order</u>	<u>Only Crime Committed</u>	<u>Percent of Respondents</u>
2	Drug dealing	5.4
3	Assault	4.8
4	Burglary	3.2
5	Theft (other than auto)	2.9
6	Robbery	2.5
11	Forgery	1.8
(a)	Auto theft	0.8
(a)	Fraud	<u>0.3</u>
	Any single crime	21.7
	None of the eight crimes	12.8
	Two or more crimes	<u>65.5</u>
	Total	100.0

^aNot shown in Table 2.2.

So our data confirm that a majority of respondents report committing two or more types of crimes.

If one studied the career path of any profession, however, even a profession that is considered highly specialized, one would find the same sort of evidence that is used to argue the nonexistence of criminal specialization. For example, a superficial study of all the M.D.s and nurses on a hospital staff conceivably could conclude that they were neither distinguishable nor specialized. They all studied chemistry, physiology, human anatomy, and the like, and performed multiple medical activities both during their internship and recently: checking blood pressure, palpating abdomens, checking dressings, and so on. None would confine their activities to one specific act.

To determine who the specialists are, it is necessary to study the *unique* activities that professional persons *do or do not perform in conjunction with other activities*. For example, in addition to the specific acts listed above, usually only an M.D. will perform an incision to open a chest cavity and only a thoracic surgeon will transplant a heart.

By analogy, some criminal acts are as common and elementary to criminals as measuring blood pressure is to many members of a medical staff. For example, most criminals in our sample did some form of theft. To say a burglar does not specialize in burglary because he shoplifts is like saying a surgeon does not specialize because he takes blood pressure.

With this view in mind, we can think of the varieties of criminal behavior we have defined as "specialties." Then it is not surprising that most robbers also committed burglary and most inmates who reported doing burglary or robbery also did some form of theft, forgery, or fraud. Theft is a kind of crime that almost any upwardly mobile professional criminal would learn as part of his early training and continue to commit routinely. However, the high-level varieties are distinguished by inclusion or omission of more serious crimes such as assault, which are less a factor of "career advancement" and more attributable to psychological or subcultural factors.

Although we think it is useful to consider the varieties of criminal behavior as specialties, we are not fundamentally at odds with researchers who deny specialization. The difference between our view and theirs can be explained by differences in data sources, conceptual formulation, and definitions.

Data Sources. We examine self-reports rather than conviction records or arrest records. While there may be many questions about the accuracy of self-reports, there can be little doubt that arrests, and especially convictions, often represent a small--and atypical--sample of the totality of criminal acts of an individual. In Chap. 3, in fact, we show that official conviction records are a poor surrogate for the types of crimes committed by an individual, and arrest records are barely better. Hence a classification of offenders that rests on

their official records of contacts with the criminal justice system will necessarily draw a different picture of criminal behavior from one that rests on self-reports.

Conceptual Formulation and Definitions. We define specialization in terms of the totality of what *offenders* do, while research that concludes that there is little specialization focuses on individual *offenses*. Even when offenses are categorized into very broad groups, such as nonindex, injury, theft, damage, and combination, the data typically show little stability of criminal behavior within groups (Wolfgang et al., 1972). Figlio (1981) even suggests that as a very good approximation, the prior offensive behavior of a recidivist is irrelevant in predicting the type of crime he will be arrested for next. According to his study, no matter which of the five offense groups describes the crime for which a person was last arrested, his next arrest will belong to one of the five groups with these probabilities:

Nonindex6070
Injury0969
Theft1739
Damage0325
Combination0897

From our perspective, findings such as these are entirely consistent with the view that there are some very active criminals who simultaneously engage in all of these types of crimes. The offense type of the next arrest for such individuals is simply determined by a random draw based on the mixture of offenses he commits and the probability of arrest for each of them.

Since high-rate criminals contribute large quantities of arrest data concerning transitions from one offense type to another, while low-rate offenders might contribute not even a single transition to the data, the transition matrices overwhelmingly reflect the behavior of people who are frequently arrested. Many of these high-rate offenders are violent predators or other high-level varieties, and the data concerning their arrest transitions have "washed out" the offensive behavior of the low-level varieties.

By contrast, we have examined the stability over time of the entire combination of crimes committed by an offender. In this way we find substantial stability in varieties of criminal behavior or very clear and understandable types of transition among varieties. For example, suppose an offender is arrested for assault and belongs to the variety that has committed assault and no other crimes. We would predict that if he is a recidivist, his next arrest charge is very likely to be assault. But another offender who is arrested for assault and belongs to a variety that commits a mixture of crimes might be arrested next time for burglary, or drug dealing, or some other offense. We show in the remainder of this report that an important value of the distinction among varieties is that the offenders belonging to different varieties can be distinguished by their personal characteristics, while offenders who "commit assault" cannot.

In sum, our work tends to refute the notion that specific offenses by a given offender are essentially random, especially over time. There is a definite pattern to the combination of crimes that offenders in our sample committed. Almost all those who committed offenses that are publicly perceived to be very serious, such as robbery with assault, were also very likely to commit crimes perceived as less serious, such as theft. Moreover, there was significant stability over time for the different groups of offenders. And since our sample consisted of inmates, one could also note a regular progression of increase in seriousness of crimes committed for inmates who did not appear to be "stable." We suggest that evidence for randomness and nonspecialization is a product of the (official record) data analyzed and the conceptual formulation of the research instead of evidence against "behavioral stability."

We also show that seriousness as defined by reported varieties of criminal behavior corresponds with seriousness in terms of annualized rates at which specific crimes were committed. The violent predators--respondents who committed the configuration of crimes publicly perceived as most serious--substantially overlap the group of respondents who committed most of the crimes we studied at high rates. In other words, although we do not define the serious offender with absolute

parameters, there is no doubt that in terms of public perceptions, persistence in committing offenses, and rates of committing crimes, the most serious offenders can be found predominantly among the group we call violent predators.

Chapter 3

IDENTIFYING THE HIGH-RATE SERIOUS OFFENDER

INTRODUCTION AND SUMMARY OF CHAPTER

The results of Chap. 2 show that respondents who committed certain combinations of crimes were much more likely to be high-rate offenders than respondents who committed other combinations. More specifically, violent predators--robbers who committed assaults and drug deals as well as robberies during the measurement period--not only tended to be higher-rate robbers than all other types of robbers, but also they committed burglary and other property crimes at high rates.

This chapter discusses how violent predators and other robbers can be identified from their personal characteristics and prior criminal activities, and which of their characteristics predict high (or low) crime commission rates. (More properly, the methods used here could be called "postdiction," since the measurement period is in the past.) We show that routinely collected official record data are inadequate for identifying the violent predator, and then discuss revealing personal characteristics that could be collected by criminal justice agencies. Chapter 4 examines offenders who do not commit robbery.

Violent predators are shown to be among the youngest members of the incarceration cohort, occupationally unstable and extreme in their use of drugs. Typically, they were highly visible to authorities as juveniles, since they were frequent users of hard drugs, including heroin, and began doing frequent property and violent crimes at or before age 15. Because they were so young when they began the jail or prison sentence during which they were sampled, they did not have extensive adult prior records.

Since violent predators are defined by their concurrent commission of robbery, assault, and drug dealing, it might seem easy to identify them from information about whether or not they committed these particular crimes during their current conviction offense, during other incidents that led to convictions (or perhaps only arrests), and as juveniles. However, the data show that, even among offenders currently

incarcerated for robbery, this kind of official record information, including juvenile arrests and juvenile convictions, only poorly identifies the violent predators. Among offenders not currently convicted of robbery, it is not possible to identify violent predators from the type of information described--and many of them are convicted of other crimes.

Among offenders convicted of robbery, high-rate commission of serious crimes is associated with the following information: age-adjusted number of robbery convictions, robbery arrest rates, prior institutionalization data, drug-use information, and indicators of juvenile violence. Given that information, a prediction can be made separating the low-rate robber, who commits on the average 1 robbery, 1 burglary, and 10 thefts a year, from the high-rate robber, who commits on the average 37 robberies, 45 burglaries, and 38 thefts per year. (In addition, of course, some offenders who are not high-rate robbers commit thefts at high rates.)

These numerical illustrations of the strength of the prediction equations have been determined by estimating regression coefficients for a randomly selected half of the sample, predicting crime rates for the other half of the sample from equations with these estimated coefficients, and then comparing the actual crime commission rates for those predicted to be high-rate offenders with the rates for those predicted to be low.

THE CHARACTERISTICS OF THE VIOLENT PREDATOR

Table 3.1 shows the highly distinct characteristics of respondents who displayed five varieties of behavior: violent predators, robber-assaulters, robber-dealers, low-level robbers, and mere assaulters.

Compared with all other respondents, the violent predator is more likely to have been committing violent crimes before age 16, to have committed violent crimes frequently as a juvenile, and as a juvenile to have used hard drugs frequently, including addictive use of heroin. He is also more likely to have been convicted of a crime before age 16 and to have had multiple commitments to juvenile institutions.

Almost all violent predators were using hard drugs during the measurement period and they were more likely than any other respondents to be using drugs every day and in high quantities.

Table 3.1

CHARACTERISTICS OF ROBBERS AND MERE ASSAULTERS
All Respondents--Prison and Jail

Characteristic	Percent of All Respondents (or Mean Value)	Variety of Criminal Behavior				
		Violent Predators	Robber-Assaulters	Robber-Dealers	Low-Level Robbers	Mere Assaulters
<u>JUVENILE BEHAVIOR</u>						
Did no property or violent crime before age 16; property after 16	15					
Property crime but not violent crime before age 16	30			+		
Violent crime before age 16	14	+				
Violent crime frequently as juvenile	7	+	+			
Juvenile frequent use of hard drugs other than heroin	32	+		+		-
Juvenile use of heroin--not prolonged periods	8	+				
Juvenile heroin addiction	12	+		+		-
<u>JUVENILE RECORD</u>						
Juvenile arrest before age 16 but no conviction before age 16	20					
Juvenile conviction before age 16	19	+				
Juvenile multiple commitments to state facilities	13	+	+	+		
Ever married	45		-			+
Living with wife or other woman in window 1	44					+
Completed high school	41					-
<u>EMPLOYMENT</u>						
Did not work in window 1 but worked in window 2 and 3	14					
Unemployed in window periods	12					-
Worked in all window periods	44				-	
Percent street months worked in measurement period	44 ^a	-		-		+
Average number of months worked at each job in measurement period	4 ^a	-		-		+
<u>AGE/COHORT</u>						
Age in measurement period	25.6 ^a	-	-			+
Birth year		+	+	+		-
<u>RACE</u>						
White	38			+		
Black	47	-		-	+	

NOTE: + indicates that the characteristic is significantly more likely (.01 level) to be present in the group than in the average respondent. - indicates the characteristic is significantly less likely to be present. The subgroup mean of the dummy (yes-no) variable for the characteristic was tested against the overall mean for all respondents.

^aMean value, not a percent of respondents.

(continued)

Table 3.1--continued

Characteristic	Percent of All Respondents (or Mean Value)	Variety of Criminal Behavior				
		Violent Predators	Robber-Assaulters	Robber-Dealers	Low-Level Robbers	Mere Assaulters
<u>DRUG USE BEFORE MEASUREMENT PERIOD</u>						
Drug use in window 1	37	+		+	-	-
Drug use in window 2	45	+		+	-	-
<u>DRUG USE IN MEASUREMENT PERIOD</u>						
Alcohol abuse	31					
General drug use	49	+		+	-	-
Heroin use weekly or less	9					
Heroin use daily/paid less than \$50 daily	5					-
Heroin use daily/paid over \$50 daily	16	+	-	+		-
Heroin use daily/barbiturate use at least weekly (less than 10+ pills on days used)	4	+		+		
Used amphetamines and heroin	12	+		+		-
Barbiturate use less than daily and less than 5 pills daily when used	15	+		+	-	-
Barbiturate use less than daily; at least 5 pills daily when used	10	+		+		-
Barbiturate use daily; 5 or more pills	5	+		+		
Barbiturate use and alcohol abuse less than weekly; less than 10 pills when taken	10	+			-	-
Barbiturate use and alcohol abuse less than daily; 10+ pills used on days taken	4	+				
Barbiturate use and alcohol abuse daily	1					
Barbiturate and amphetamine use, less than daily	13	+		+	-	-
Barbiturate and amphetamine use daily (less than 10 pills)	4	+		+		
Barbiturate and amphetamine use daily (10 or more pills)	3	+		+		
Amphetamine use less than weekly	12	+		+		-
Amphetamine use weekly or more, less than 10 daily on days used	11	+		+		-
Amphetamine use weekly or more, 10 or more pills on days used	6	+				-
Combined alcohol and amphetamine use	14	+		+		-
<u>PRIOR INCARCERATION</u>						
Number of months incarcerated in window 2	3.5 ^a	+				
Number of months incarcerated in window 1	2.8 ^a	+				
Number of past prison terms	.85 ^a	-				
Number of past jail terms	1.86 ^a					
<u>PRIOR RECORD</u>						
Total number of arrests	9.82 ^a	+				-
Number of times on probation	1.82 ^a	+				-
Number of times on probation or parole revoked	1.54 ^a	+				-

^aMean value, not a percent of respondents.

They were no more or less likely than any other respondents to have completed high school, but they were less likely to have worked steadily during the measurement period and less able to hold one job for an extended period. On the average, they worked at each job for 3 months.

They were younger than other respondents during the measurement period (average age 22 years and 9 months as compared with 25 years and 7 months for all respondents); therefore, they were less likely to have served previous terms in adult prisons. However, they were more likely to have been placed on probation and to have had their probation revoked. In addition, their average numbers of arrests exceeded those of any other respondents, including those who were substantially older. Finally, violent predators in our respondent sample were preponderately white or Hispanic, not black.

Comparison of the Violent Predator with the Mere Assaulter

Comparing the characteristics of the violent predator with those of other respondents who committed other serious crimes during the measurement period, the most dramatic difference is found between the violent predator and the mere assaulter. In distinction from the above portrait of assaultive-robber-dealers, the composite mere assaulters were older (average age 28 years) during the measurement period, more likely than other respondents to have been married, and more likely to have worked steadily in the measurement period and to have held on to one job, even though they were less likely to have completed high school.

The mere assaulters were far less likely than other respondents, especially violent predators, to have used drugs as juveniles or in any other period. In fact, the only common drug-use patterns they may have had in common with the violent predator are combined barbiturate-alcohol use and barbiturate and amphetamine use in relatively low quantities.

Finally, the mere assaulter was less likely than other respondents, especially violent predators, to have had multiple prior arrests or to have been placed on probation.

Comparison of the Violent Predator with Other Types of Robbers

The violent predator and the mere assaulter are obviously at opposite ends of several spectra. The distinctions between violent predators and other robbers are less dramatic. Although one would expect one of the clearest distinctions between violent predators and both low-level robbers and robber-assaulters to be general drug use (since drug dealing definitionally separates the categories), the drug-pattern distinctions were actually a little more subtle.

Low-level robbers, the robbers least like violent predators, are for the most part black, whereas violent predators are disproportionately white or Hispanic. In addition, the low-level robbers were far less likely to use non-opiate psychotropic drugs (barbiturates and amphetamines) than other respondents, especially violent predators. (Aside from those characteristics, the low-level robbers were virtually indistinguishable from other respondents.)

Robber-assaulters appear to be very like the violent predators in terms of being relatively young, violent as juveniles, and having had multiple commitments to state juvenile facilities. They were no more or less likely than other respondents to be using any type of drug; however, they were distinctly less likely than all other respondents to be addicted to heroin and to be paying over \$50 daily to support their habit. Perhaps partially as a result, they did not have the relatively long record of arrests that were found for the violent predators. The (nonassaultive) robber-dealers appear to differ from violent predators in at least three ways. As juveniles, although they, too, were committing crimes before age 16 and also were likely to have had multiple commitments to juvenile state facilities, they confined their early crime to property crime and did not appear to be any more violent than most respondents. On the other hand, they were more likely than all respondents, including violent predators, never to have been employed. And finally, although they shared the violent predators' predilection for hard drug use beginning at an early age, they did not attain the high degree of drug use the violent predators did in the measurement period in terms of mixing barbiturates and alcohol in high doses or taking amphetamines in high doses weekly. In summary, the

violent predators tended to be on the whole seriously deviant in terms of juvenile criminal behavior, juvenile incarceration, employment, drug use in any period, and total arrests.

IDENTIFYING VIOLENT PREDATORS USING OFFICIAL RECORD DATA

Although violent predators appear to differ qualitatively and quantitatively from all other respondents and from other serious offenders in terms of their social characteristics and their crime rates, it is almost impossible to distinguish this very special type of offender from respondents reporting other serious crimes, or in fact from any other respondent, based solely on their current conviction crimes.

For example, among California prisoners (Table 3.2), although 59 percent of the self-reported violent predators were serving terms for robbery, only two of them (1 percent) were serving terms for the combination of crimes which all violent predators, by definition, report committing: robbery, assault, and drug dealing. An additional 14 percent of the self-reported violent predators were convicted solely for assaultive crimes, and 16 percent were on record as having been convicted for none of the crimes we have been discussing, including, of course, robbery, assault, or drug dealing.

Moreover, expanding the inquiry beyond current conviction crimes, we show below that the violent predators cannot be readily identified with information presently collected and recorded by the criminal justice system in any of the study states. First we examine respondents convicted of robbery and then, in a subsequent section, those convicted of other crimes. Using data collected from California official records, we found that it was possible to define a subgroup of convicted robbers that is significantly more likely to include violent predators than other varieties of robbers. However, the respondents so identified from their records did *not* commit crimes at higher rates than other robbers. Using Michigan and Texas data, it was not possible to identify the violent predators with the official record information that the survey team was able to locate and code in those two states.

Table 3.2

CONVICTION CRIMES OF SELF-REPORTED VIOLENT PREDATORS

Complex Based on Official Record Current Conviction Crime	Percent of Self-Reported Violent Predators in Each Conviction Crime Complex		
	California (N = 100)	Michigan (N = 68)	Texas (N = 54)
Residual convictions	16	25	4
Just drug conviction	3	0	4
Just theft or forgery or fraud conviction	5	10	4
Theft or forgery or fraud + drug or assault, weapons, or homicide conviction	0	3	0
Burglary conviction	11	13	43
Burglary + drug or assault, weapons, or homicide conviction	4	4	0
Just assault, weapons, or homicide conviction	14	19	2
Robbery	14	12	39
Robbery + drug conviction	2	0	2
Robbery + assault or weapons or homicide	30	13	4
Robbery + drugs + assault or weapons or homicide	1	0	0

NOTE: Violent predators surveyed in prison, for whom official record data were collected, are included in this table.

Attempting to Identify Violent Predators Among All Convicted Robbers

Combinations of five types of *official record data* were used in the attempt to identify the self-reported violent predators among all respondents convicted of robbery:

- o Current convictions (other than robbery) for assault, weapons, homicide, and drugs
- o Prior adult convictions for assault, homicide, and drugs
- o Juvenile convictions for assault, homicide, weapons, and drugs
- o Measurement period arrests for assault, homicide, and drugs
- o Drug history (available to us only for California and Michigan prisoners)

Prior and juvenile convictions were used as indicators of past involvement in the crimes defining the violent predator category. Since the varieties of criminal behavior appeared to be stable over time (Chap. 2), these indicators of being a violent predator in the past appeared to be good candidates for variables that would help identify the violent predators in the measurement period.

Using measurement period arrests as possible indicators of specific criminal activity in the measurement period would be questionable on legal grounds, of course. The respondents cannot be presumed guilty of charges that largely had not been subjected to trial. However, we included measurement period arrests in this analysis to demonstrate that their discriminating power is in fact weak.

We adopted the official drug history partly as a surrogate for drug dealing, which was used to define the violent predator. In addition, as shown above, one of the most dramatic characteristics of the violent predator is his persistent, frequent, and high-quantity use of both opiates and psychotropic drugs.

California official records on drug history provided potentially useful information, since they divided the inmates into categories of heroin addicts, heroin users, opiate users, marijuana users, dangerous drug users, and nondrug users. Michigan official record information was rather vague, however; it categorized inmates as nonusers,

experimental, sustained use, episodic use, addicted (and drug use unknown, which included 46 percent of the respondents). Official records concerning drug history were not available from Texas.

As we have already pointed out, current convictions in and of themselves cannot be used to identify the violent predators, in large part simply because the combination of robbery, assault (or homicide or weapons), and drug convictions occur very infrequently in a single commitment to prison. We will now discuss the relative merits of the other official record data in discriminating the violent predator from other robbers.

California. We begin with California, because it provided us with official record information on all possible identifiers discussed above.

An important initial observation is that respondents who were convicted of assault or homicide in conjunction with robbery in California were not more likely to be violent predators^{*} than other convicted robbers. *But when the drug history was added to the conviction crime complex,[†] the information identified 60 percent of the respondents who reported to be violent predators in California* (see Table 3.3; chi-square = 6.67, sig. < .01). However, the "false positives" for this method are quite high: 33 percent of respondents who did not report being violent predators *appeared* to be violent predators according to their conviction crime complex and drug history.

The addition of prior adult convictions for assault or homicide and drug dealing to the information about current convictions and drug history slightly improved the identification of the violent predators in California, and an additional 4 percent were discriminated (chi-square = 6.77, sig. < .01). However, *the added information of juvenile convictions actually detracted from the identification process, since*

*The simple correlation between being a self-reported violent predator (among all convicted robbers) and current convictions for assault with a deadly weapon or homicide was $-.009$.

†A convicted robber was identified (from his official record) as presumptively a violent predator if he had (a) simultaneous convictions for weapons use or homicide or assault, and (b) either simultaneous convictions for drug dealing or an official record of heroin, opiate, or dangerous drug use.

Table 3.3

IDENTIFYING SELF-REPORTED VIOLENT PREDATORS WITH OFFICIAL RECORD INFORMATION IN EACH STATE:
PRISON RESPONDENTS CURRENTLY CONVICTED FOR ROBBERY

Official Record Item	Percent of Self-Reported Violent Predators Who Were Identified as Violent Predators			Percent of Robbers Not Self-Reported as Violent Predators Who Were Identified as Violent Predators		
	California		Texas	California		Texas
	Michigan	Texas	Michigan	California	Michigan	Texas
Current conviction crimes ^a	1	0	0	> 1	0	0
Current + prior adult convictions ^b	4	6	4	5	2	3
Current + prior adult + juvenile convictions ^b	17	++	++	12	++	++
Current + prior adult convictions + arrests ^b in measurement period	4	6	17	7	2	3
Current conviction crime + drug history	60 ^c	6	+	33	10	+
Current + prior adult convictions + drug history	64 ^c	12	+	34	10	+
Current + prior adult + juvenile convictions + drug history	68 ^c	++	++	41	++	++
Current + prior adult convictions + arrests in measurement period + drug history	66	18	+	41	10	+

NOTE: + = data on drug history not available from Texas.

++ = data on juvenile convictions not available from Michigan and Texas

^a Robbery, assault, homicide or weapon, drug dealing.

^b Assault, homicide, drug dealing (weapon for juveniles).

^c Self-reported versatile robbers are significantly (.01 level) more likely than others convicted of robbery to be identified by this criterion.

the juvenile variables increased the false positives to 41 percent of respondents not reporting to be violent predators. Information about arrests in the measurement period was even more useless when added to information about convictions and drug histories: It yielded the same 41 percent of false positives but had fewer true positives.

In addition to the problem of false positives, the separation of convicted California robbers into two groups (presumptive violent predators and others) according to their official record data was not successful in distinguishing respondents with high self-reported crime commission rates from those with low rates. Table 3.4 shows that, among convicted robbers, self-reported violent predators have high annualized crime commission rates for robbery, burglary, assault, theft, fraud, and dealing drugs.* However, the convicted robbers whose *official records* appear to identify them as violent predators do not have higher crime rates for major crimes than those of other convicted robbers. (The exceptions are the crime rates for auto theft and dealing drugs.)

Thus, the "officially identifiable violent predators" are in fact a mixture of offenders who are violent predators (but not necessarily high rate) and others who are neither violent predators nor high-crime-rate members of the group reporting their variety of criminal behavior.

Among self-reported violent predators, we found that those whose official records suggest they are violent predators actually commit crimes neither at higher nor at lower annualized rates than the others. Many of the self-reported violent predators with the highest crime rates are young and have not yet amassed a substantial adult prior record. Moreover, as we pointed out in conjunction with the conviction crimes of the self-reported violent predators, official record data are indicators, but only moderately accurate indicators, of actual behavior. On the whole, using official record data in this simple categorical fashion does not provide useful discrimination between high-rate and low-rate violent predators.

* Compare Table 2.20, which is not limited to California prisoners nor to respondents convicted of robbery.

Table 3.4

COMPARISON OF SELF-REPORT ANNUALIZED CRIME COMMISSION RATES
AMONG CALIFORNIA PRISONERS CONVICTED OF ROBBERY

Crime Type	Comparison Groups	
	S.R. Violent Predators ^a vs. Others Convicted of Robbery	Presumptive Violent, ^b Predators from O.R. vs. Others Convicted of Robbery
Robbery	Higher (.002) ^c	N.s.d.
Burglary	Higher (.001)	N.s.d.
Assault	Higher (.001)	N.s.d.
Theft other than auto	Higher (.02)	N.s.d.
Auto theft	Higher (.001)	Higher (.01)
Forgery & credit cards	N.s.d.	N.s.d.
Fraud	Higher (.03)	N.s.d.
Dealing drugs	Higher (.001)	Higher (.03)

NOTE: N.s.d. = no significant difference at .05 level.

^aViolent predators identified by self-report.

^bPresumptive violent predators identified from their official records. Two methods were used to identify presumptive violent predators from official records, both leading to the same results in this table: (1) those whose current conviction crimes included assault, homicide, or weapons charges and whose records indicated a history of heroin, opiate, or dangerous drug use; (2) those whose current or prior conviction crimes included assault, homicide, or weapons charges and whose drug history or prior conviction crimes indicated heroin, opiate, or dangerous drug use.

^cSignificance level by grouped chi-square test on crime rates. See Chap. 2.

Michigan and Texas. For the two other states studied, the discriminating power of official record data was even lower than in California.* Using Texas official record data, we could not discriminate violent predators from other convicted robbers, primarily because we could not obtain drug history information from Texas records. In Michigan, even though drug history data were collected, we could not identify the violent predators. Part of the reason may be that the Michigan records had no information on drug use history for over 45 percent of the

* See Table 3.3.

respondents, and the information that was available did not differentiate in any way between types of drug use.

Identification of Violent Predators Among Respondents Convicted of Crime Other Than Robbery

Given official record information alone, no significant distinction could be made between self-reported violent predators and other robbers among respondents convicted of crimes other than robbery. Even using a combination of all possible indicators in California including drug history, prior adult and juvenile convictions for robbery, assault, homicide, weapons, drugs, and arrests in the measurement period for robbery, assault, homicide, and drugs, we could identify only 43 percent of the violent predators who had been convicted for homicide or assault and 21 percent of the violent predators who had been convicted of crimes other than robbery, homicide, and assault. Moreover, the combinations of these factors "falsely" identified, respectively, 31 percent and 6 percent of those who were not violent predators according to their self-reports.

Summary of Results

Applied to a group of people sentenced to prison or jail for robbery, official data on drug history and current and prior convictions for assault or drug-related crimes--at least as complete as the data currently collected in California--permit a moderately successful determination of which ones are currently violent predators (assaultive-robber-dealers). However, additional official record information about juvenile criminal activity or recent arrests does not add any strength to the discrimination between violent predators and others convicted of robbery. In the absence of information about the person's drug history, official records of convictions and arrests do not permit discriminating violent predators from others convicted of robbery.

Some of the convicted robbers who appear, from their official records, to be violent predators are in fact low-crime-rate robbers. Hence no simple, straightforward way of looking at official record data will tell which convicted robbers are the most criminally active. (Later sections of this chapter show how such determinations can be made.)

Among a group of people sentenced to prison or jail for crimes other than robbery, the specific collection of official record data we had available did not permit discriminating the violent predators from the others.

FACTORS ASSOCIATED WITH CRIME COMMISSION RATES FOR ROBBERY

The violent predator (one who robs, commits assault, and deals drugs) tends to be a high-rate robber and also to commit a variety of other crimes at higher rates than other respondents. Although a clear, objective description of the violent predator can be given (he is relatively young, a drug user, and a person who began doing serious violent crime as a young juvenile), data commonly collected by the criminal justice system are not adequate to discriminate with great precision between violent predators and other members of an incoming incarceration cohort.

This section describes offender characteristics that are related to commission of robbery at high rates. The results show that although not all violent predators are high-rate robbers, prediction of robbery commission rates among an entire cohort, including offenders who do not commit robbery at all, is based primarily on the same descriptor variables that discriminate violent predators. The remaining important variables are those that discriminate other varieties of robbers. Moderately accurate predictions of robbery commission rates can be made for an incoming incarceration cohort.

Personal Characteristics Explored as Potentially Associated with Robbery Rate

We did not use all the possible predictor variables that could be constructed from survey data or official record data available to us. The following criteria were used to select variables for the prediction analysis.

1. The data for the variables should be potentially available to the criminal justice system. (This eliminated the use of several psychological variables, such as self-identity, which

in the past have been found to have a strong association with the rate of criminal activity, e.g., Peterson and Braiker (1981).)

2. The information is currently used by the criminal justice system for identifying serious offenders or has been shown in past research to be strongly associated with serious adult criminal behavior and/or recidivism after incarceration. The types of variables meeting these criteria, and examples of supporting research, follow.
 - o Juvenile behavior (Glaser, 1964; Hare, 1979; Mann, 1976; Peterson and Braiker, 1981)
 - o General drug use (Glaser, 1964; Mann, Friedman, and Friedman, 1976; Smith et al., 1979; Weissman, 1979; Williams, 1979; Witte, Schmidt, and Sickles, 1978)
 - o Specific forms of drug use
 - Heroin use: frequency (Hoffman and Beck, 1980; Pritchard, 1979)
 - Heroin use: frequency and cost (Gandossy et al., 1980)
 - Barbiturate use: frequency and quantity (McGlothlin, 1979)
 - Amphetamine use: frequency and quantity (Robins and Wish, 1977)
 - Alcohol abuse (Mann, Friedman, and Friedman, 1976; McGlothlin, 1979; Pritchard, 1979; Witte, Schmidt, and Sickles, 1978)
 - Multiple drug use (several forms) (Simonds and Kashoni, 1979)
 - Juvenile drug use (Leukenfeld and Clayton, 1979; Mann, Friedman, and Friedman, 1976)
 - o Race (Davis, 1976; Gottfredson and Gottfredson, 1980; Patterson, 1972; Wolfgang and Cohen, 1970)
 - o Education (Mann, Friedman, and Friedman, 1976; Gottfredson and Gottfredson, 1980)

- o Marital status (Glaser, 1964; Gottfredson and Gottfredson, 1980; Silberman, 1978)
- o Employment (Glaser, 1964; Gottfredson and Gottfredson, 1980; Pritchard, 1979)
- o Age (Glaser, 1964; Peterson and Braiker, 1981)
- o Juvenile interaction with the criminal justice system (Hoffman and Beck, 1980; Pritchard, 1979)
- o Geographical area (Silberman, 1978).

Within these general topic areas, we explored many formulations of predictor variables: individual responses to survey questions, scaled combinations of responses to survey questions, and dummy variables for the levels of the scales. Only variables that were found to be statistically associated with the commission rate for some form of criminal activity *in all three study states separately* were included in the analyses described here. (See App. D.)

Methods for Predicting

For each respondent i , we calculated his estimated crime commission rate λ_i for robbery, as described in App. A. The value of λ_i is the estimated number of crimes committed per year of unincarcerated time. The dependent variables for the predictions in this chapter are $\log_e(\lambda_i + 0.5)$, which allows for the possibility that $\lambda_i = 0$.

We used the statistical package SPSS, Release 9 (1981), and carried out multiple regressions with the procedure NEW REGRESSION, which allows for specifying the model in various ways. In staged stepwise regression, a variable enters the regression equation if its probability of F-to-enter is 0.05 and its tolerance is 0.01. Within a stage, a variable that has already entered is removed if its probability of F-to-remove exceeds 0.10. After the end of a stage, a variable that entered the regression equation in that stage is not subsequently removed.

The respondents were randomly divided into a calibration set and a prediction set of approximately equal size.* The coefficients of the regression models were all estimated using the calibration set of respondents. Then the resulting regression equation was applied to the respondents in the prediction set to derive a predicted value of $\log_e(\lambda_i + 0.5)$. No predicted value of λ_i was estimated; rather, respondents were divided into groups according to their predicted values of the logarithm, and statistics were obtained for their values of λ_i that had previously been estimated from the survey data. In other words, we did not emphasize the values of crime commission rates that were predicted from the regression equations; we were more concerned with the extent to which the commission rates of offenders predicted to have high rates exceeded the rates of those predicted to have low rates.

Because numerous predictor variables are involved in the analysis, nearly every respondent has missing values for one or more of the variables. Without imputation of missing values, neither the regressions nor the predictions could be accomplished. We imputed the state-specific mean for a missing value in all variables having more than 10 percent missing values (exactly half of the variables).†

Many of the predictor variables are dummy (zero-one) variables for levels of Guttman scales. The construction of those scales (App. C) assures that almost all respondents with high scores have the characteristics associated with low scores. For example, these are the levels of the juvenile criminality scale:

- o Did no crime as a juvenile.
- o Did crime but not specified crimes as juvenile.

* Although a random sample was chosen with probability 0.5, the calibration set is actually larger (1071 respondents to 983). No significant differences in important characteristics were found between the inmates in the two sets. Both sets exclude respondents whose age in the measurement period was under 18, so as to avoid tautological relationships between crimes committed in juvenile and measurement periods.

† Few of the survey items had as many as 10 percent missing values, but each scale used in the analysis was constructed from two or more survey items and thus reflected the combined missing values.

- o Did specified property crimes^{*} as a juvenile (at age 16 or after).
- o Did specified property crimes before age 16.
- o Did specified violent crimes[†] before age 16.
- o Did specified violent crime frequently as a juvenile.

The construction of the scale assures that nearly all respondents who frequently committed violent crime also did so before age 16, they committed property crime before age 16, they committed property crime at age 16 or 17, and they committed unspecified crimes as a juvenile. Thus, the expression "did violent crime frequently" encompasses all these forms of behavior, except, of course, the baseline category, "Did no crime as a juvenile."

Overview of Regression Analyses

The remainder of this section describes and elaborates on three multiple regression analyses that are summarized in Table 3.5. In all the regression analyses, the dependent variable is the transformed annualized robbery commission rate. In the first sets of regressions, the focus is on the individual's characteristics and prior history when he is committing crimes. The objective is to explain the amount of robbery he commits. Consequently, we do not use as predictor variables his arrests during the measurement period or the nature of his conviction crime, since these can be viewed as manifestations of his criminal behavior instead of predictors of that behavior.

In the second set of regressions, we analyze the robbery rates of self-admitted robbers. The purpose is to determine the characteristics that are specifically predictive of the annualized *rate*, not simply to distinguish robbers from nonrobbers.

^{*} Broke into some place, stole a car, stole something worth more than about \$100, used a stolen credit card, or forged something.

[†] Robbed someone, threatened someone with a gun or knife or other weapon, hurt someone with a gun or knife or other weapon, beat someone badly, or raped someone.

Table 3.5

REGRESSION ANALYSES FOR ANNUALIZED ROBBERY COMMISSION RATE^a

Study Group ^b	Reason	Type of Independent Variables	Variance Explained
1. All inmates in the calibration sample (simulated incoming cohort)	To determine how high-rate robbers differ from low-rate robbers and nonrobbers	Self-report information ^c	$R^2 = 0.35$
2. All inmates in the calibration sample who reported committing robbery	To determine how high-rate robbers differ from low-rate robbers	Self-report information ^c	$R^2 = 0.35$
3. Prisoners in the calibration sample convicted of robbery	To determine how the official record of convicted robbers can be used to identify high-rate robbers, and to see what other information (now only in self-report) would be useful if added to the official record	Entered in stages. 1: official record items related to convictions $R^2 = 0.13$ 2: official and self-report items on arrests in the measurement period $R^2 = 0.17$ adult incarcerations and other adult criminal history $R^2 = 0.21$ 3: official records for juvenile period. { No variables entered in stage 3 4: self-report items on juvenile criminal history, employment, education, etc..... $R^2 = 0.32$	

^aSelf-reported robbery commission rate was transformed (in regression analyses) by adding a constant and taking the logarithm.

^bInmates who were under age 18 at any time during the measurement period were excluded from all study groups (to avoid tautological correlations with predictor variables from the juvenile period).

^c58 variables representing the personal characteristics described in the text. Many survey self-report items were not used as independent variables.

The third set of regressions limits attention to a group of known robbers (those convicted of robbery) and addresses questions relevant for developing criminal justice policy: How well do official record items predict robbery rates? How much predictive power is added by using variables not currently in official records? What particular kinds of data have value as predictors, assuming that already-available criminal justice record information is to be used first? Because official record data were collected only for respondents in prison, the sample size for the third set of regressions (169 convicted robbers in the calibration sample) is much smaller than for the other two sets (1071 total in the calibration sample).

Predicting Robbery Rate for an Incoming Incarceration Cohort

Figure 3.1 shows the results of the regression analysis for robbery rate of all respondents in the calibration set (first analysis on Table 3.5). The variables used as predictors were all obtained from self-report; they excluded variables describing arrests during the measurement period and the crime(s) for which the respondent is sentenced to prison or jail.

All variables which were potential candidates for inclusion in the regression equation are shown in Fig. 3.1,* grouped into the following categories:

- o Juvenile crime
- o Juvenile record
- o Juvenile drug use
- o Prior criminal record
- o Race, age, education, marital status
- o Employment during the measurement period and the preceding four years
- o Drug use during the measurement period and the preceding four years

* This same schematic description and list of variables is used for many of the regressions in this chapter and Chap. 4.

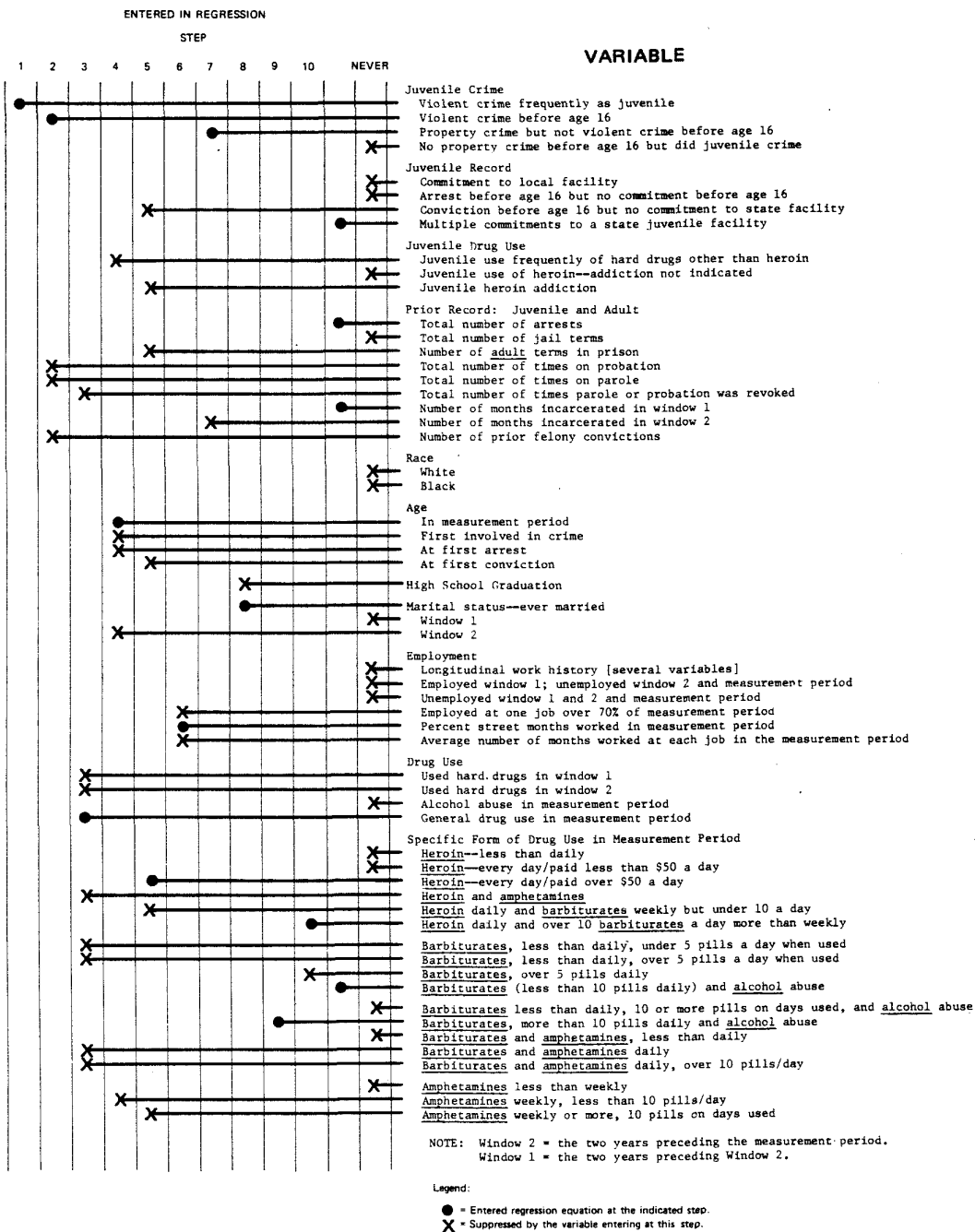


Fig. 3.1 — Schematic description of the candidate variables that entered and failed to enter the regression model for robbery rate among an incoming incarceration cohort

The variables that entered the regression equation are indicated by a solid circle. An "X" indicates variables that are "almost" as strong and could have entered as substitutes if the more highly correlated variable were not available. For example, in step 2 of this regression, the variable representing commission of violent crime before age 16 entered the equation. In so doing, the variable suppressed three other variables that previously had a significant F-to-enter: number of times on probation, number of times on parole, and number of prior felony convictions. If the juvenile violent crime variable had not been available (or had been excluded from the regression), one of these three alternatives would probably have entered the equation.

The following variables entered the equation, yielding, at the end, multiple $R^2 = 0.35$ and F statistic significant at $p < .0001$:

1. *Committing violent crimes frequently as juveniles.* These inmates said they committed the specified list of violent crimes "frequently" (and also, for the most part, said they began doing both violent and property crime before age 16).
2. *Committing violent crimes before age 16.* Although these inmates did not commit violent crimes frequently as juveniles, they did commit them before age 16. Nearly all also committed property crimes before age 16 and committed unspecified crimes as juveniles. This is reflected in the strong correlation with the number of past felony convictions and number of times on probation or parole.
3. *Using "hard" drugs during the measurement period.* The predicting factor was general drug use, but there is also a significant association with long-term use of drugs, in particular amphetamines, barbiturates, and multiple use (heroin and amphetamines, or barbiturates and amphetamines).
4. *Age in the measurement period* had an inverse association with robbery rate. Age also was connected with frequent juvenile use of drugs other than heroin, and using large amounts of amphetamines frequently in the measurement period. As could be expected, it was inversely connected with marital stability

in the two-year period preceding the measurement period and number of terms previously served in adult prison.

5. *Heroin addiction and daily cost of heroin over \$50/day* had a positive association with robbery rate. Alternatively, we found that juvenile heroin addiction, juvenile convictions before age 16 with no subsequent commitments to juvenile state institutions, or sporadic use of barbiturates along with heroin (possibly to ease withdrawal) could be used as "surrogates" for high-cost heroin addiction in predicting robbery rate, since they were all highly correlated.
6. *Percent of street months worked during the measurement period.* The fewer months worked, the more likely the respondent was to have done robbery at a high rate. Employment was also correlated, as one would anticipate, with whether or not high school was completed.
7. *Committing property crime (but no violent crime) before age 16* explained variance in robbery rate beyond the factors discussed above; or alternatively the prediction model could include the number of months incarcerated during window 2.
8. *Marital status* had a significant correlation with robbery. Those who had ever been married were least likely to do robbery at high rates.
9. Specific forms of *multiple drug use* that included barbiturates in high doses were indicative of robbery rate.
10. *Juvenile commitments to state facilities* or length of incarceration in the period immediately preceding the measurement period was positively associated with robbery rate after all other factors discussed above were accounted for.

In summary, the portrait of the high-rate robber among an incoming incarceration cohort is a relatively young man who committed violent crimes frequently as a juvenile, began committing violent crime before age 16, and is a long-term user of a mixture of psychotropic drugs or addictive doses of heroin. He has supported his life-style of drug use with property crimes, which he began before age 16. He is not

likely to work very much nor to assume family obligations. He has spent relatively long terms institutionalized in the recent past in juvenile state facilities.

Once these factors were accounted for, there still remained an association between robbery rate and the state from which the sample was selected (Texas lowest), and respondents in prison in California and Michigan had significantly higher robbery rates than those in jail.

The following factors were found *not* to be associated with robbery rate for the incoming incarceration cohort:

- o Juvenile use of heroin if not addictive
- o Committing juvenile crime after age 16
- o Commitment to a local juvenile facility
- o Arrest before age 16 (without subsequent conviction)
- o Number of prior terms in jail or on parole
- o Race
- o Total unemployment over all periods studied
- o Alcohol abuse in the absence of other drug use
- o Heroin addiction without relatively high daily costs for heroin
- o Infrequent use of amphetamines in relatively *low* doses
- o Size of central city in county of conviction

Differences in Robbery Rates Among Those Predicted High and Low

The regression equation corresponding to Fig. 3.1 is shown in Table 3.6. To explain the strength of this (and subsequent) regression equations when applied to members in the prediction set, we arbitrarily divided the prediction set into three groups: the 20 percent of respondents with lowest predicted logarithm (the "low" subgroup), the 20 percent with highest predicted logarithm (the "high" subgroup), and the rest ("medium" subgroup). For the regression in Table 3.6, the cutoff logarithm for the low group is -0.366 and for the high group is 1.065. The ratio of predicted crime commission rates at these two cutoffs is a factor of 12.

Table 3.7 shows statistics for the *actual* crime commission rates of respondents in the low, medium, and high groups. That is, the values

Table 3.6

REGRESSION MODEL FOR LOGARITHM OF ANNUALIZED ROBBERY COMMISSION RATE

All respondents in calibration set

Variable	Coefficient (B)	Sig. F for This Variable	Multiple R ²	
			Change	Total
Juvenile crime: violent crime frequently ^a	2.21	< 0.0001	0.126	0.13
Juvenile crime: violent before age 16, but not frequently ^a	0.84	< 0.0001	0.052	0.18
General drug use in measurement period ^a	0.22	0.04	0.039	0.22
Age in measurement period	- 0.02	0.0009	0.026	0.24
Heroin use: daily more than \$50 ^a	0.57	0.0002	0.019	0.26
Percent of measurement period employed	- 0.42	0.001	0.012	0.27
Juvenile crime: property crime before age 16, ^a but no violent crime ^a	0.31	0.006	0.007	0.28
Ever married ^a	- 0.37	0.0004	0.008	0.29
Barbiturates and alcohol use in measurement period, 10 or more pills on days used ^a	0.66	0.02	0.005	0.29
Heroin daily and barbiturates weekly, but fewer than 10 pills per day ^a	- 2.39	0.003	0.005	0.30
Barbiturates daily, over 5 pills ^a	0.80	0.002	0.005	0.30
Months locked up during the two-year period 3 and 4 years before measurement period	0.017	0.05	0.003	0.31
In prison (versus in jail) ^a	0.73	< 0.0001	0.022	0.33
In Texas sample ^a	- 0.49	< 0.0001	0.012	0.35
(Constant)	1.76	< 0.0001		

^aDummy variable equaling 0 or 1.

Table 3.7
 CRIME COMMISSION RATES IN SUBGROUPS DEFINED BY THEIR PREDICTED ROBBERY RATE
 All Respondents in Prediction Sample

Crime Type	Predicted Robbery Rate ^a	Percent Not Doing Crime	Percent With Rate Under 10/Year ^b	Median Rate	Average Rate ^c		90th Percentile of Rate	Signif. of Difference in Distribution
					Value	Ratio to Low		
Robbery	Low	85.9	97.2	0.0	0.4	1.0	1	.001
	Medium	61.3	93.7	0.0	5.9	13.1	6	
	High	29.8	66.9	5.2	29.1	64.7	63	
Burglary	Low	79.1	97.3	0.0	2.2	1.0	2	.001
	Medium	54.5	85.7	0.0	23.3	10.7	24	
	High	30.9	58.6	4.5	143.2	66.0	378	
Assault	Low	80.8	98.7	0.0	0.4	1.0	1	.001
	Medium	72.0	96.2	0.0	1.1	2.8	3	
	High	44.7	87.3	1.1	2.8	7.3	12	
Auto theft	Low	92.9	100.0	0.0	0.1	1.0	0	.001
	Medium	82.5	96.2	0.0	21.2	154.9	3	
	High	69.5	86.7	0.0	47.5	346.8	12	
Theft other than auto	Low	77.4	91.0	0.0	13.2	1.0	8	.001
	Medium	64.7	84.1	0.0	70.6	5.3	57	
	High	44.7	64.5	3.4	135.0	10.2	248	
Forgery & credit cards	Low	81.6	95.6	0.0	3.8	1.0	3	.002
	Medium	82.7	92.8	0.0	22.6	6.0	4	
	High	68.2	87.7	0.0	28.3	7.5	12	
Fraud	Low	91.1	98.1	0.0	0.5	1.0	0	.001
	Medium	88.0	95.0	0.0	59.6	127.5	2	
	High	70.8	87.6	0.0	26.0	55.5	17	
Drug dealing	Low	76.1	88.7	0.0	152	1.0	29	.001
	Medium	58.5	74.1	0.0	451	3.0	903	
	High	36.5	46.8	11.4	797	5.2	2258	

^aLow = predicted to be in lowest 20 percent; high = predicted to be in highest 20 percent.
^bIncluding those with zero rate (not doing the crime).
^cAverage includes respondents who don't do the crime.

of λ_i as estimated from survey responses were used in the calculations, not the predicted values. These calculations were carried out for eight different types of crimes, but in each case the subgroups (low, medium, and high) are defined by the predicted *robbery* rate.

Table 3.7 shows that the regression equation for robbery tends to separate high-rate from low-rate offenders for all the crime types studied. The prediction is highly successful at the low end. For example, 85.9 percent of respondents predicted to be low reported committing no robberies during the measurement period, and only 2.8 percent of them committed robbery at rates exceeding 10 per year. (Table 3.8 shows the number of respondents corresponding to these percentages.) For every crime type shown except forgery and credit cards, a larger fraction of the predicted low-robbery group are nondoers than of the predicted medium- or high-rate group.

At the high end, the regression equation seems to capture the bulk of the high-rate offenders,^{*} but some respondents who reported not committing robbery are also predicted to be high. For example, 10 percent of those predicted to be high-rate robbers committed over 63 robberies per year, but 29.8 percent of them reported committing no robberies.

Despite the classification errors in the "predicted high" group, the prediction is very successful as measured by the mean crime commission rates in each subgroup. The average robbery rate for those predicted high is over 29 robberies per year and is nearly 65 times as high as the robbery rate for those predicted low. The average rate of committing other crimes is also substantially higher for those predicted to have high robbery rates than for those predicted to have low robbery rates.[†]

Only for the crime of fraud is the crime commission rate for the average respondent higher than for those predicted to have high robbery rates (Table 3.9). For the crimes of burglary, assault, and theft the average commission rate for the "predicted high" robber is two or more times that of the average respondent.

^{*}Two-thirds of robbers whose rate exceeded 50 robberies per year were predicted "high"; none were predicted "low."

[†]This finding is state-dependent, as described in the next subsection.

Table 3.8

ACCURACY FOR PREDICTING ROBBERY RATE
USING SELF-REPORTED DATA
Count of Respondents in Prediction Sample

Actual Robbery Rate	Predicted	
	Low Rate	High Rate
Under 10/year	138 ^b	101 ^a
Between 10 and 50/year	4 ^b	34
Over 50/year	0 ^b	16
Total	142	151

^a"False positive."

^b"False negative."

Table 3.9

CRIME COMMISSION RATES FOR RESPONDENTS
PREDICTED TO HAVE HIGH ROBBERY RATES

Crime Type	Annualized Crime Commission Rate	
	Average for Predicted High Robbery Rate ^a	Ratio to Average For All Respondents
Robbery	29.1	3.3
Burglary	143.2	3.7
Assault	2.8	2.3
Auto theft	47.5	2.3
Theft other than auto	135.0	2.0
Forgery & credit cards	28.3	1.5
Fraud	26.0	0.6
Drug dealing	797	1.8

^aPredicted to have robbery commission rate in the highest 20 percent.

Predicting Robbery Rate for Each State's Incoming Cohort

Since respondents in California reported higher robbery commission rates than those in Michigan, who in turn reported higher rates than those in Texas (see Table 2.17), the information presented above can possibly be interpreted by hypothesizing that the regression equation is simply capturing the characteristics of the California respondent. It is not, however, and within each of the study states the regression equation separates high-rate from low-rate robbers.

To demonstrate how the three-state regression equation works in each study state, we compared three regression models of robbery commission rate data: one each for California, Michigan, and Texas respondents. The most important variables that entered each of the regression models were nearly identical (Table 3.10). The lower multiple R^2 for the Texas model (0.29) than for the California and Michigan models (0.41 and 0.40) shows that the low crime rates of Texas robbers do not vary strongly with their personal characteristics.

Next we compared the predictions arising from each of the three state-specific regression models with the predictions arising from the three-state model as applied to the state in question. For the California and Michigan data, the two methods of predicting produced generally the same results. For example, in California the mean absolute difference between the predicted logarithm from the three-state model and the predicted logarithm from the California model was 0.5, corresponding to a ratio of crime rates of 1.6. This may be compared with the ratio between the highest predicted crime rate and the lowest, which was nearly 500 using either model. The relationship between the two predictions is in Fig. 3.2, which shows visually that respondents predicted high by one method are also predicted high by the other. The results for Michigan were quite similar.

In Texas, the match between the two predictions is even better than it is in the other two states (Fig. 3.3), primarily because all of the Texas prisoners have predicted robbery rates lower than those of the high-rate California or Michigan prisoners. However, a small number of Texas respondents who were predicted to have fairly high values according to the three-state model were not predicted to have

Table 3.10

PREDICTOR VARIABLES FOR ANNUALIZED ROBBERY RATE

Variable	Three-State Model (R ² = 0.35)	California (R ² = 0.41)	Michigan (R ² = 0.40)	Texas (R ² = 0.29)
1. Juvenile crime: violent crime frequently	✓	✓	✓	✓
2. Juvenile crime: violent crime before age 16	✓	✓	✓	✓
3. Juvenile crime: property crime but not violent crime before age 16	✓	(a)	(b)	✓
4. Age in measurement period	✓	✓	✓	
5. Marital status	✓			✓
6. Percent of measurement period employed	✓	(c)	✓	✓
7. General drug use	✓	✓	✓	
8. Heroin use: daily more than \$50	✓	(d)	(e)	✓
9. Heroin and barbiturates	✓		✓	
10. Barbiturates and alcohol	✓	(f)	(f)	(f)

NOTE: ✓ signifies that the variable entered the regression equation.

^aThis variable did not enter the regression. The correlated variable "total number of arrests" entered instead.

^bThis variable did not enter the regression. The correlated variable "committed to state juvenile facility" entered instead.

^cThis variable did not enter the regression. A correlated variable for employment in Windows 2 and 3 entered instead.

^dThis variable did not enter the regression. The correlated variable "juvenile heroin addiction" entered instead.

^eThis variable did not enter the regression. The correlated variable "used heroin and amphetamines" entered instead.

^fThis variable did not enter the regression. A correlated variable for use of barbiturates in combination with another drug entered instead.

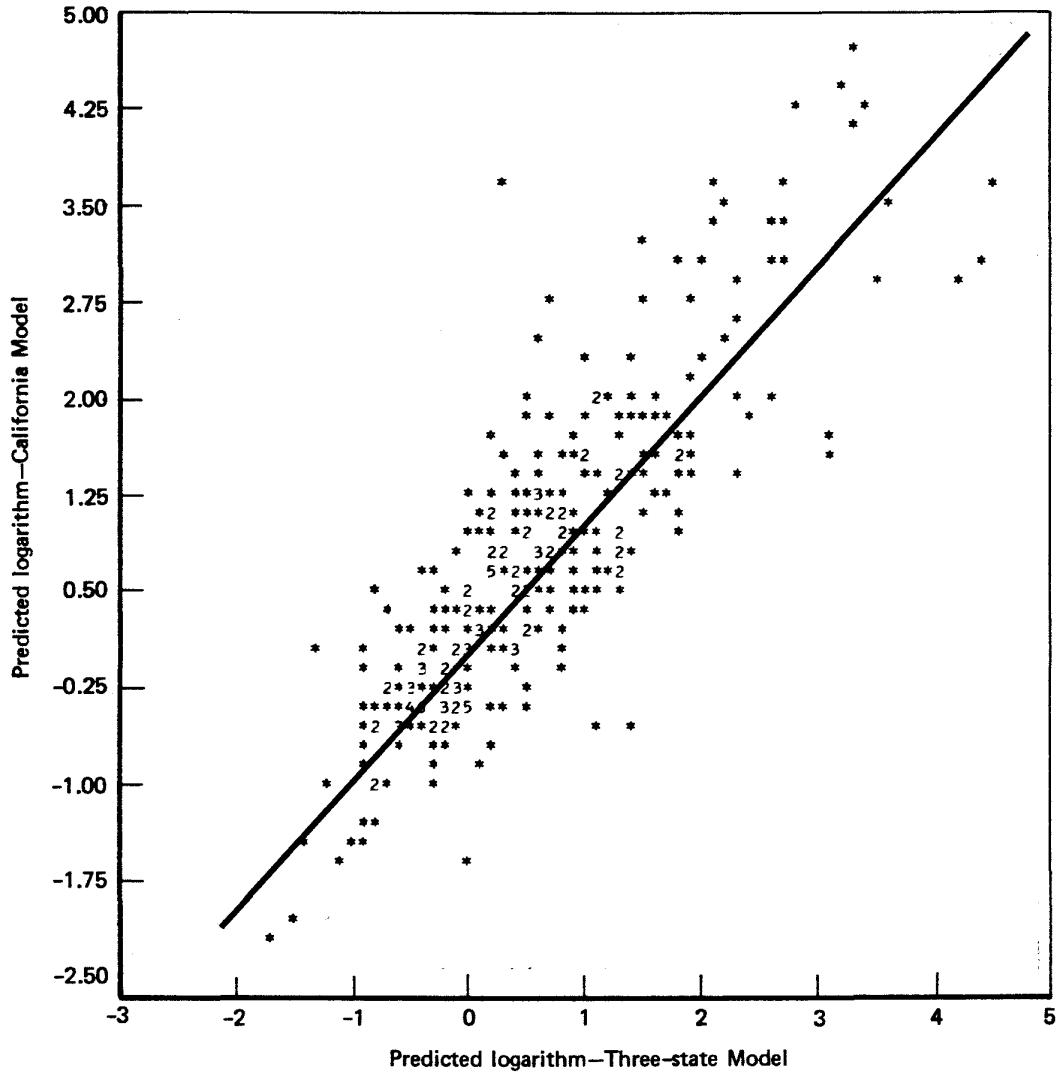


Fig. 3.2 — Scattergram comparing the predicted logarithm from two robbery rate regression models: one estimated for California respondents in the calibration set, the other for all respondents in the calibration set. California respondents in the prediction set are included in the scattergram. (2 = two respondents with the same predictions, etc.)

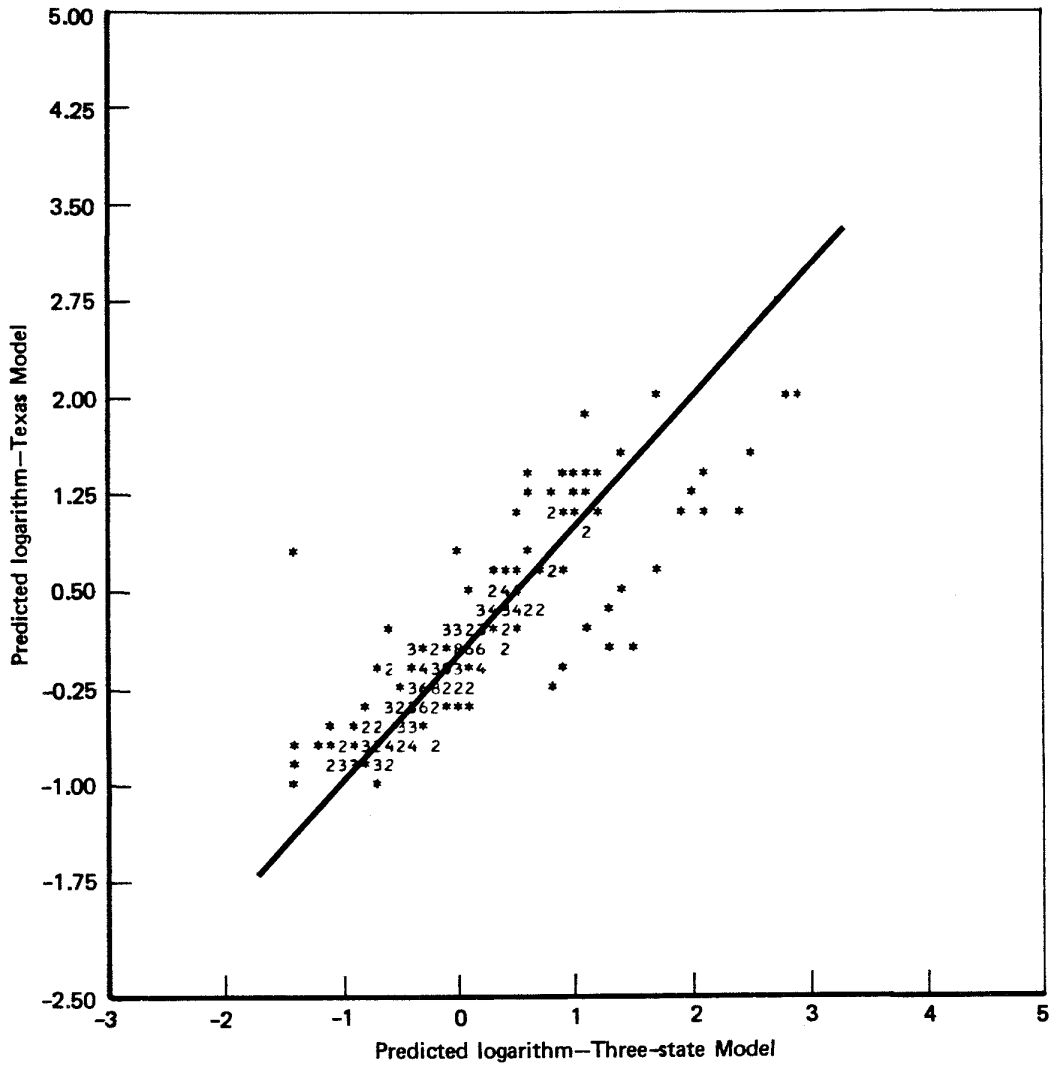


Fig. 3.3 — Scattergram comparing the predicted logarithm from two robbery rate regression models: one estimated for Texas prisoners in the calibration set, the other for all respondents in the calibration set. Texas prisoners in the prediction set are included in the scattergram. (2 = two prisoners with the same pair of predictions, etc.)

high-robbery rates according to the Texas-specific model. This indicates that some Texas prisoners have characteristics that are associated with committing robbery at moderately high rates in the other two states, and yet their robbery rates are not that high.

The state-specific models did not indicate that commission rates for crimes other than robbery are as closely related to robbery-rate predictions as appears to be the case in Table 3.9, where three states are considered together. In fact, only for the crimes of burglary, assault, and drug dealing were the crime rates high *in all three states* for respondents with high state-specific predictions of robbery rates. In Michigan and Texas, the predicted high-rate robbers were not high-rate auto thieves or forgers, and in Texas they were not high-rate thieves (other than auto).

Limitations of Self-Report Prior Criminal Record Data

The predictors involving prior criminal record that were candidates for entry into the regression equation for robbery (Fig. 3.1) were weakly associated with robbery rate and, with one exception, did not actually enter the regression equation. However, because of the format and wording of the survey instrument, the self-report prior record items are not specifically related to any one crime (e.g., robbery), nor are they necessarily focused on the respondent's adulthood (age 18 and older). Consequently, the failure of these predictor variables to explain any noticeable part of the variance in robbery rates could potentially be explained by limitations of the variables themselves rather than by lack of predictive value of adult prior record information.

To show that adult prior record information in fact adds little predictive value to the other variables previously discussed, we substituted official record information about prior adult convictions for the self-report items. Since official record data had been obtained only for *prisoners*, we obtained the regression equation using self-report prior record data for comparison. The seven candidate predictor variables derived from the official record were the numbers of prior convictions for robbery, burglary, assault, murder, rape, and drug

dealing, which were age-adjusted by including an age variable also in the regression.

Table 3.11 shows that the self-report variable "prior felony convictions" entered the regression equation for prisoners, although it did not enter for the total group of respondents (including jail instead of prison).^{*} When the official-report items were substituted, only the number of prior convictions for robbery entered, and it did not suppress any of the other variables in the equation. The multiple R^2 for the equation including the official record item was 0.364, only slightly higher than the value 0.347 for the comparison regression. We conclude that our use of self-report prior record variables (which are the only prior record variables available for jail respondents) do not distort the resulting regression models in any important way.

Stability of Predictions Against Removal of Poor Quality Responses

Prison respondents whose survey answers had poor external reliability (they disagreed substantially with their official records) or poor internal quality (they were incomplete, inconsistent, or confused) were identified by methods described in App. B. To determine the extent to which such respondents may have distorted the results of the prediction analysis, we excluded them and recalculated the mean annualized crime commission rates for respondents predicted high, medium, and low (Table 3.12). Since data for checking external reliability were available only for prisoner respondents, Table 3.12 shows prisoners (rather than respondents in jail as well as prison) as the comparison group.

The table shows that for robbery and three other crime types (burglary, assault, and auto theft), the ratio of crime rates between those predicted high on robbery and those predicted low is somewhat reduced by restricting the calculation to responses with good reliability and internal quality. When responses having poor reliability or quality are excluded, the mean for the predicted low group is slightly

^{*}This is the only important difference between the variables in the model for all respondents and the variables in the model for prisoners. Compare Tables 3.10 and 3.11.

Table 3.11

PREDICTOR VARIABLES FOR ANNUALIZED ROBBERY RATE

Three-state model for prisoners only

Variable	Variables Entering the Regression Equation	
	Self-Report Items Only ($R^2 = 0.347$)	Prior Convictions Official Record Only ^a ($R^2 = 0.364$)
1. Juvenile crime: violent crime frequently	✓	✓
2. Juvenile crime: violent crime before age 16	✓	✓
3. Prior record: Self-report past felony convictions	✓	
Official record past robbery convictions		✓
4. Age in measurement period	✓	✓
5. Marital status	✓	✓
6. Percent of measurement period employed	✓	✓
7. Heroin use: daily more than \$50	✓	✓
8. Heroin and barbiturates	✓	✓
9. Barbiturates and alcohol	✓	✓
10. Barbiturates	✓	✓

^aNo self-report prior record items are candidates for entry; they are replaced by official record data.

Table 3.12

STABILITY OF PREDICTIONS AGAINST REMOVAL OF
POOR QUALITY RESPONSES

Crime Type	Predicted Robbery Rate ^a	Average Crime Commission Rate	
		All Prisoner Respondents ^b	Excluding PEIQ ^c
Robbery	Low	0.6	0.7
	Medium	3.1	3.6
	High	27.0	21.9
Burglary	Low	3.6	4.6
	Medium	25.6	21.7
	High	143.8	94.8
Assault	Low	0.3	0.4
	Medium	1.2	1.1
	High	2.8	2.5
Auto theft	Low	0.1	0.2
	Medium	30.3	7.0
	High	30.7	13.3
Theft other than auto	Low	2.6	0.9
	Medium	73.9	96.0
	High	151.0	122.1
Forgery & credit cards	Low	5.0	5.4
	Medium	11.9	12.0
	High	22.1	30.1
Fraud	Low	0.1	0.1
	Medium	23.8	10.5
	High	15.3	17.0
Drug dealing	Low	33.6	44.6
	Medium	366.5	318.0
	High	648.9	760.1

^aLow = predicted to be in lowest 20 percent; high = predicted to be in highest 20 percent.

^bAll prisoner respondents in the prediction sample.

^cExcluding Poor External or Internal Quality: Respondents in the prediction sample whose summary measure of poor external reliability was in the worst 20 percent or whose summary measure of poor internal quality was in the worst 20 percent were excluded. See App. B.

increased, and the mean for the predicted high group is decreased. For the other four crime types, the removal of responses with poor reliability or quality does not appear to have a consistent or significant effect. In all cases, even when these respondents are removed, the offenders predicted to have high robbery rates do in fact have substantially higher average rates for all the crimes shown.

Predicting Robbery Rate for Self-Reported Robbers

The regression model described in this section is the second one shown in the summary Table 3.5. It continues to use self-report data but addresses the question of predicting robbery commission rates conditional on knowing that the person commits robbery. Under many circumstances, e.g., a conviction for robbery, one has reason to be certain that the person whose robbery rate is to be predicted actually commits robbery. The variables that were found to have the strongest associations ($R^2 = .35$, F statistic significant at $p < .0001$) with robbery rate among all self-reported robbers are, in general, factors having to do with juvenile activities, prior incarceration, current and prior employment, and very specific forms of drug use during the measurement period. When all known factors were accounted for, the Texas robbers still had significantly lower robbery commission rates than those in the other two study states, and the robbers who were jail inmates in Michigan and California had lower robbery rates than their counterparts in prison.

Figure 3.4 shows the specific factors found to be significantly related to robbery rate among all robbers:

1. *Frequent violent behavior as a juvenile.* This was highly correlated with multiple commitments to a state juvenile facility.
2. *Percent of street months worked in measurement period* (inverse relationship). Unemployment was associated with heroin addiction and was also correlated with parole or probation revocations.

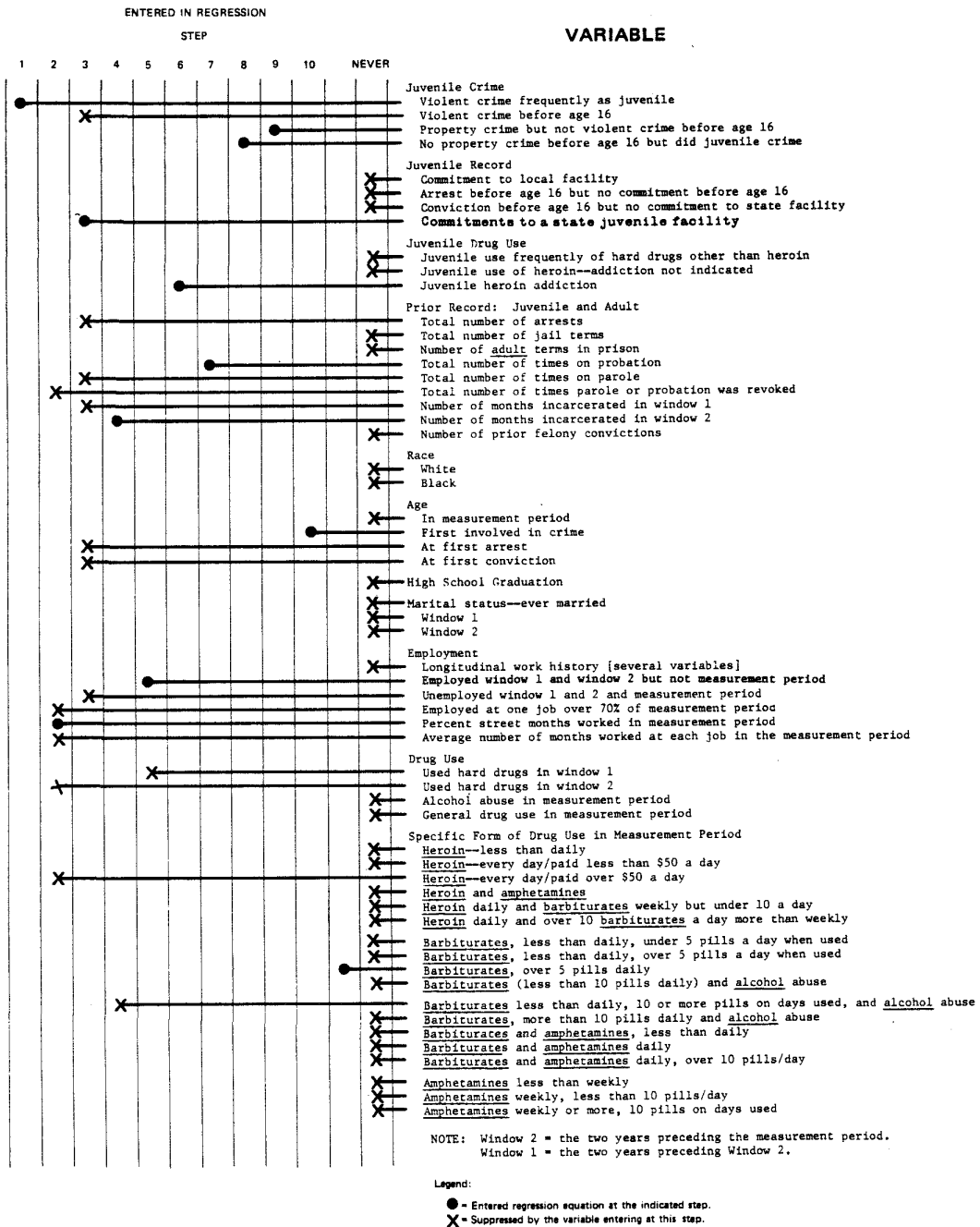


Fig. 3.4 — Schematic description of the candidate variables that entered and failed to enter the regression model for robbery rate among self-reported robbers

3. Having been *committed to a state juvenile facility*, or alternatively, committing violent crime before age 16, having a relatively large number of total arrests, time on parole, or months institutionalized in the period 2 to 4 years before the measurement period.
4. *Length of institutionalization in the two years preceding the measurement period*. This appeared to be related to frequent barbiturate use combined with alcohol abuse.
5. *Being unemployed in the measurement period after working in the previous four years* (negative relationship). This variable appears to adjust item 2, above, so that respondents who have a persistent pattern of low employment or unemployment have higher robbery rates than those whose unemployment in the measurement period is idiosyncratic.
6. *Addiction to heroin beginning as a juvenile*.
7. *Number of times on probation* (negative relationship).
8. Having done *no crime before age 16*, or having done only property crime, not violent crime, before age 16 (negative relationship).
9. *Age at first involvement in crime after juvenile years* (inverse relationship).
10. Use of *barbiturates* in high doses during the measurement period.

The factors we specifically found were *not* related to robbery rate among robbers were:

- o Juvenile interactions with the criminal justice system other than commitments to state facilities
- o Juvenile drug use other than heroin addiction
- o Prior felony convictions, jail terms, and terms in adult prison
- o Race
- o Age in measurement period
- o Education

- o Marital status
- o Alcohol abuse
- o General drug use in the absence of barbiturate use
- o Heroin use or addiction if daily costs were not high
- o Multiple drug use with the exception of barbiturates in high quantities, combined with alcohol abuse

In summary, compared with other robbers the high-rate robber tends to have been concurrently frequently violent and addicted to heroin as a juvenile, to have been incarcerated in juvenile state institutions for relatively long periods, and to have had relatively numerous times on parole and parole revocations (but not numerous times on probation). He tends to have a very poor employment record, and his drug use, which typically began when he was a juvenile, was, during the measurement period, either a \$50+ per day heroin habit or frequent use of barbiturates in high doses combined with alcohol abuse.

After accounting for all the above factors, respondent robbers in Texas had lower robbery rates than robbers in the other two study states, and robbers in jail in California and Michigan had lower robbery rates than their counterparts in prison.

Comparing Factors Associated with Robbery Rates with Characteristics of Four Varieties of Robbers

The composite description just given of the high-rate robber corresponds closely with the description given earlier of the violent predator (the robber who commits assault and deals drugs as well). Moreover, the high-rate robber has characteristics that distinguish him from the typical robber-assaulter, robber-dealer, or low-level robber. The high-rate robber is unlike the robber-dealer in terms of the crimes he committed as a juvenile; he is unlike the robber-assaulter in that one of his primary motivations for his high-rate crime appears to be his over-\$50-per-day heroin habit; and he is unlike the low-level robber in terms of his persistent drug use, especially combined barbiturate and alcohol abuse.

By examining those variables whose predictive value for robbery rate among an *incoming incarceration cohort* differed from their

predictive value for robbery rate *among robbers* (Table 3.13), it can be seen that these variables are associated with varieties of criminal behavior other than that of violent predators. For example, committing property crime but not violent crime before age 16 is a characteristic unique to robber-dealers, and in fact it is inversely associated with being a violent predator. Never having been married, on the other hand, is associated with being a robber-assaulter, but not with being any other type of robber.

This comparison suggests that the factors associated with robbery rate among an incarceration cohort are, to a large extent, identifying a mixture of robber-dealers, robber-assaulters, and violent predators. The factors associated with robbery rate among robbers are, to a large extent, differentiating the violent predators from other robbers. This comparison provides a concrete example of the general observation that some personal characteristics may predict the commission of certain acts (e.g., robbery) and yet be unrelated or negatively related to commission of those acts at high rates.

To determine which factors were primary in determining rates of activity, rather than whether or not robberies were committed, we explored the factors predictive of robbery rate among violent predators alone. We found that of all the potential predictors previously considered as candidates for entry into the regression equation, only *frequent violent crime as a juvenile* and *job instability*^{*} significantly predict robbery rate among violent predators ($R^2 = .18$, F statistic significant at $p < .0001$).

In summary, many of the factors that can be used to predict robbery rates actually are best considered as associated with varieties of criminal behavior rather than with committing crimes at high rates. Once one knows the combination of crimes committed by a robber, it is very difficult to make further discrimination of the rates at which robbery is committed. One of the strong predictors, high-rate commission of violent crimes during the juvenile period, is not conceptually helpful, because it merely states that robbers who were previously

*"Job instability" refers to entry of the variable "average number of months worked at each job in measurement period" with a negative coefficient.

Table 3.13

VARIABLES WHOSE PREDICTIVE VALUE FOR ROBBERY RATE
DIFFERS WHEN CONDITIONAL ON COMMITTING ROBBERY

Selected Variables Associated With Robbery Rate for an Incoming Incarceration Cohort	Association With Robbery Rate, Conditional on Committing Robbery	Variety of Behavior With Which Factor Was Significantly Associated
<ul style="list-style-type: none"> ● Property crime but not violent crime before age 16-- <u>positive relationship</u> 	<ul style="list-style-type: none"> ● <u>Negative</u> relationship 	<ul style="list-style-type: none"> ● Robber-dealers (positive relationship)
<ul style="list-style-type: none"> ● Age in measurement period 	<ul style="list-style-type: none"> ● No relationship 	<ul style="list-style-type: none"> ● Robber-dealers ● Robber-assaulters ● Violent predators
<ul style="list-style-type: none"> ● Marital status 	<ul style="list-style-type: none"> ● No relationship 	<ul style="list-style-type: none"> ● Robber-assaulters
<ul style="list-style-type: none"> ● General drug use in measurement period 	<ul style="list-style-type: none"> ● No relationship 	<ul style="list-style-type: none"> ● Violent predators ● Robber-dealers

high-rate robbers are likely to be current high-rate robbers. The only other important predictor of robbery rate among violent predators is job instability.

Predicting Robbery Rate Among Convicted Robbers

We now turn our attention to the third regression in the summary Table 3.5. We ask what information can judges, parole boards, or other practitioners use to identify the high-rate robber among men convicted of robbery? The results show that the best pragmatic information one can use for identifying the high-rate robber among those convicted for robbery and currently sentenced to prison are (1) age-adjusted past convictions for robbery, (2) arrest rates for robbery, (3) prior institutionalization date, (4) long-term heroin addiction beginning as a juvenile, or frequent and high-quantity barbiturate use combined with alcohol abuse, and (5) information about violence in the juvenile years.

To derive a model for predicting robbery rate for convicted robbers, we used stepwise regression techniques, ordering the variables according to their accessibility and acceptability to the criminal justice system. All variables having a high level of accessibility and acceptability were considered as candidates for entry before variables having lower levels. Any variables that entered the model were left in the model and not removed in favor of stronger, but less acceptable, variables. The ordering of the variables was as follows:

1. Information currently used by the criminal justice system.
 - Current conviction offenses
 - Number of current convictions
 - Aggravating circumstances of conviction crime
 - Prior convictions, age adjusted
2. Information often currently collected, but not considered suitable for sentencing decision.
 - General drug use
 - Other prior record information
 - Recent arrests
3. Information not necessarily collected but that could potentially be available as part of presentence reports.
 - Juvenile incarceration in state facilities
 - Juvenile heroin addiction
 - Persistent or extensive drug use
 - Employment
 - Education
 - Marital status
4. Information generally not used by the criminal justice system.
 - Juvenile criminal behavior
 - Race

The regression used self-report data for juvenile interactions with the criminal justice system, because these data were available for all three study states. The results show that these variables do not enter the regression, and a separate analysis, developed for California

prisoners only and described below, shows the same is true for official records of juvenile interactions with the justice system. The variables that entered the three-state model are shown in Table 3.14. The following is a discussion of the major categories.

1. *Current conviction crimes in conjunction with robbery.*
Conviction crimes in conjunction with robbery, including assault and weapons crimes, are virtually worthless in identifying the high-rate robber.
2. *Weapon use and injury to victim during conviction crime.*
Neither using a weapon, nor the use of a specific weapon including guns, knives, or blunt instruments, nor injury to a victim during the robbery for which conviction occurred was associated with robbery rate.
3. *Prior adult convictions.* Since varieties of criminal behavior are somewhat stable over time, it comes as no surprise that the only prior conviction information that helped identify the high-rate robber was the number of prior convictions for robbery.

The young high-rate robber has not had much time to collect an adult record for robbery. Therefore, prior conviction for robbery itself is only a weak indicator of robbery rate, while adjusting for age in the measurement period approximately doubles the variance explained.

4. *General drug use.* Although drug users tend to do robbery at higher rates than nondrug users, knowledge about nonspecific use does not help identify the high-rate robber since it confounds violent predators with robber-dealers and other robbers.
5. *Times on probation, parole, and probation and parole revocations.* Although these factors were found to be moderately strong predictors of robbery rate for all robbers (Fig. 3.4), they did not enter the regression for prisoner respondents (Table 3.11) and they do not enter this regression for prisoner respondents convicted of robbery.

Table 3.14

FACTORS ASSOCIATED WITH ROBBERY RATE: CONVICTED ROBBERS^a
 OFFICIAL RECORD INFORMATION AND SELF-REPORT
 SOCIOECONOMIC INFORMATION

Type of Information	Specific Factors That Did Not Enter Regression Equation	Specific Factors That Did Enter Regression Equation
Current conviction crime in conjunction with robbery	Assault with a deadly weapon Auto theft Burglary Drug sales Forgery, fraud, or credit card crime Kidnap Homicide Receiving stolen property Rape Sex crimes other than rape Theft Weapons Total no. of conviction crimes	None
Weapon used and injury to victim during conviction crime	Used any weapon Used a gun Used a handgun Used a rifle Used a knife Used a blunt instrument Injury to victim	None
Number of prior convictions for specific crimes/age in measurement period	Burglary Assault Drugs Homicide Rape	Prior convictions for robbery Age in measurement period
General drug use in measurement period	Dummy variable	None
Other prior record information	Number of times on probation Number of times on parole Number of times probation or parole was revoked Juvenile incarcerations	None

For footnotes, see end of table.

Table 3.14--continued

Type of Information	Specific Factors That Did Not Enter regression Equation	Specific Factors That Did Enter Regression Equation
Arrest rate for specific crimes during measurement period	Arrest rate for all incidents Arrest rate for assault Arrest rate for burglary Arrest rate for drugs Arrest rate for homicide Arrest rate for auto theft + theft + forgery + fraud + credit card crimes Arrest rate for all of the above + robbery	Arrest rate for robbery
Length of institutionalization in periods before measurement period	Length of institutionalization in window 1 One or more commitments to a state juvenile facility ^b	(Categorized) length of institutionalization during window 1
Juvenile heroin addiction	---	Dummy variable
Specific drug use during measurement period	Use of barbiturates in high doses Heroin addiction/paid over \$50 daily for heroin ^b (correlated with juvenile addiction)	Combined alcohol abuse and barbiturate use in large quantities
Persistent drug use	Drug use in window 1 ^b Drug use in window 2 ^b	
Employment	Percent street months worked in measurement period Total unemployment in measurement period	None
Education	High school graduation	---
Juvenile criminal behavior	Violent crime before age 16 Property crime before age 16 but not violent crime Juvenile crime after age 16	Committed violent crimes frequently as a juvenile
State in which incarcerated	Texas California	---
Race	White Black	

For footnotes, see following page.

Table 3.14--continued

NOTE: Multiple $R^2 = .32$; F statistic significant at $p < .0001$. SPSS staged stepwise regressions, submitted in order presented in first column of table.

^aAll convicted robbers in prison in calibration sample (N=169).

^bVariable is highly correlated with both robbery rate and a variable that did enter, and can be used as an alternative measure.

6. *Arrest rate for robbery.* Although the presence or absence of arrests for specific crimes could not be used to identify the violent predator, his recent *arrest rate* for robbery (number of arrests divided by street months in the measurement period) is a powerful indicator of his robbery rate. Whether or not this factor can be used for a pragmatic purpose is an ethical but certainly not a statistical concern.
7. *Length of previous institutionalization* in the two years immediately preceding the measurement period. This was a significant but not very powerful factor related to robbery rate. To some extent it is synonymous with having been incarcerated in a state facility as a juvenile.
8. *Specific forms of drug use.* Two specific forms of drug use were strong predictors of robbery rate: long-term heroin addiction and using barbiturates in high quantities combined with alcohol abuse.

The heroin factor that was found to be most powerful in the model under discussion was juvenile heroin addiction; however, this was highly correlated with a "\$50-or-more-a-day heroin habit" in the measurement period and with drug use in the four years preceding the measurement period. Prolonged heroin addiction, of course, is readily visible to virtually any trained medical observer, if not even to casual observers. Identification of combined high-quantity barbiturate use and alcohol abuse requires a slightly more sophisticated physical examination. But again, the pathological effects are rather specific and detectable.

9. *Employment and education.* Once the above factors, especially prolonged heroin use, had been accounted for, employment (which of course individually is one of the most powerful predictors of robbery rate) and education no longer explained any significant amount of variance.
10. *Juvenile criminal behavior.* Even after all other factors entered into the regression equation, frequent violent acts in the juvenile years (which also indicated beginning both violent and property crime before age 16 and doing frequent property crime) accounted for 5 percent of the variance in robbery rate. This was still a strong variable above and beyond juvenile incarceration and probation. It is therefore doubtful that juvenile justice records can provide an indicator of juvenile violence that is fully adequate to identify the high-rate offender.

However, since the juvenile violent crimes about which we asked were nontrivial (robbery; rape; threat with a gun, knife, or other weapon; injury with a gun, knife, or other weapon; "beating someone badly"), it is likely that frequent commission of any of these acts, especially before age 16, would be recorded by the public schools and thus be potentially available to the criminal justice system.

11. *State and race.* State and race were not significant variables after the above factors entered the regression equation.

In summary, the high-rate robber tends to be someone who has been highly visible to officials since he was a child in terms of his frequent acts of criminal behavior, prolonged or intense drug use, and intensity of interaction with the criminal justice system for his robbery activities. He is relatively easy to identify, but it is doubtful whether the information that is most accessible and powerful in his identification can ethically or legally be used to restrain him at the present time.

Differences in Crime Rates Among Convicted Robbers
Predicted High and Low

To illustrate the strength of prediction variables having different degrees of accessibility and acceptability to the criminal justice system, we extracted three regression models from the staged stepwise regression in Table 3.14:

- Model 1:* Includes only prior robbery convictions and age as prediction variables* ($R^2 = 0.13$, F statistic significant at $p = 0.0007$).
- Model 2:* Includes prior robbery convictions, age, and recent arrests and incarcerations ($R^2 = 0.21$, F statistic significant at $p = 0.0001$).
- Model 3:* Includes prior robbery convictions, age, recent arrests and incarcerations, juvenile heroin addiction, use of barbiturates and alcohol, and frequency of juvenile commission of violent crimes ($R^2 = 0.32$, F statistic significant at $p < 0.0001$).

Each model was used to identify a "predicted low" group (the lowest 20 percent for that model) and a "predicted high" group (the highest 20 percent). The comparisons of mean crime rates between those predicted low and those predicted high (Table 3.15) show that respectably good distinctions (ratios of more than 10 in actual robbery rate) can be accomplished simply by using age-adjusted prior convictions for robbery. Adding recent arrests and incarcerations (Model 2) approximately doubles the ratio from high to low, primarily by making a more precise identification of the *low*-rate robbers. Only by adding the less accessible variables (Model 3) can the truly high-rate robbers be identified, and the ratio doubles again. (The robbery rate for those predicted high by Model 3 is 40 times the robbery rate for those predicted low.)

*Also included implicitly in this model are all current conviction offenses and prior convictions for offenses other than robbery, since these did not enter the regression equation.

Table 3.15

CRIME RATES IN SUBGROUPS OF CONVICTED ROBBERS
DEFINED BY THREE REGRESSION MODELS

Crime Type	Predicted Robbery Rate	Mean Crime Commission Rate					
		Model 1		Model 2		Model 3	
		All Prisoners	Excl. PEIQ ^a	All Prisoners	Excl. PEIQ	All Prisoners	Excl. PEIQ
Robbery	Low	1.7	1.2	0.9	1.0	0.9	1.0
	Medium	12.9	11.9	15.6	14.7	10.4	12.2
	High	18.1	20.6	17.3	23.0	37.5	40.8
Burglary	Low	4.2	0.4	0.9	1.1	1.0	1.2
	Medium	15.9	6.6	13.5	3.1	10.1	5.2
	High	7.9	12.3	26.8	41.9	44.8	37.3
Assault	Low	0.7	0.6	0.3	0.3	0.3	0.3
	Medium	1.2	0.9	1.8	1.9	1.1	1.2
	High	3.0	3.9	2.5	2.6	5.9	7.9
Auto theft	Low	0.1	0.1	0.0	0.0	0.0	0.0
	Medium	14.4	14.1	13.0	14.8	11.5	14.5
	High	0.5	0.5	2.8	0.7	8.2	1.0
Theft other than auto	Low	0.8	0.6	10.3	11.5	10.2	12.1
	Medium	89.1	105.8	19.8	13.7	83.1	106.4
	High	12.5	18.2	272.6	540.8	37.9	4.7
Forgery & credit cards	Low	0.6	0.3	0.7	0.8	0.7	0.8
	Medium	2.6	2.9	2.1	0.7	4.0	3.2
	High	4.0	1.0	8.4	15.5	0.6	0.0
Fraud	Low	0.2	0.2	0.2	0.2	0.2	0.2
	Medium	7.3	6.3	10.2	9.2	12.6	12.4
	High	21.5	19.8	13.6	22.4	3.2	3.5
Drug dealing	Low	113.8	135.6	98.4	105.3	92.6	107.8
	Medium	307.9	277.2	268.6	219.4	305.6	255.8
	High	394.1	486.1	386.8	555.1	270.9	402.0

NOTE: Variables in Model 1: Prior robbery convictions, age.
 Variables in Model 2: Same as Model 1 plus: recent arrests and incarcerations.
 Variables in Model 3: Same as Model 2 plus: drug use and juvenile activity
 (self-report).

^aExcluding Poor External or Internal Quality: Respondents in the prediction sample whose summary measure of poor external reliability was in the worst 20 percent or whose summary measure of poor internal quality was in the worst 20 percent were excluded. See App. B.

For these regression models, the effect of excluding respondents having poor external reliability or internal quality is the opposite of that shown in Table 3.12. When the poor quality responses are excluded, the mean robbery rate for the "predicted low" group decreases, and the mean robbery rate for the "predicted high" group increases. This pattern is explained by the fact that many of the predictor variables in the models shown in Table 3.15 are themselves obtained from official records, so respondents who have good correspondence between their responses and official record data naturally have stronger correlations between their responses and the predictor variables. (In Table 3.12 the predictor variables are self-report items.)

The part of Table 3.15 that shows crimes other than robbery indicates that the official-record items which are most powerful for predicting high-rate robbers tend to be specific to robbery. They do not identify the robber who commits other crimes at high rates as well as do the regression models using self-report predictors (for example, the models in Tables 3.9 and 3.12).

Table 3.16 shows the number of convicted robbers among the prisoners in the prediction sample who are predicted to have low rates and high rates. Even though the sample size is small compared with the other analyses in this report, we see once again that the false negative problem is almost nonexistent for these models, while the false positive problem is substantial and decreases with the strength of the model.

Substituting Official Juvenile Record for Self-Report

For California prisoners, official record data were available concerning their juvenile arrests, convictions, and incarcerations. These variables contain much greater detail and specificity in relation to robbery than do the self-report variables describing juvenile activities, but we found that none of them explained any significant part of the variance in robbery rates of convicted robbers. Not only are the juvenile record data (as currently maintained and collected) useless for discriminating high-rate robbers after adult-record information has been taken into account, but they are mostly insignificantly related to robbery rate even without controlling for other variables.

Table 3.16

ACCURACY FOR PREDICTING ROBBERY RATE OF CONVICTED
ROBBERS USING OFFICIAL RECORD DATA

Count of Prisoner Respondents
Convicted of Robbery^a

Actual Robbery Rate	Predicted (Model 1)		Predicted (Model 2)		Predicted (Model 3)	
	Low Rate	High Rate	Low Rate	High Rate	Low Rate	High Rate
Under 3 per year	15	9 ^b	18	5 ^b	18	3 ^b
3 to 10 per year	4	5	2	10	2	11
10 to 50 per year	1 ^c	9	0 ^c	7	0 ^c	7
Over 50 per year	0 ^c	2	0 ^c	3	0 ^c	4
Total	20	25	20	25	20	25

NOTE: Variables in Model 1: Prior robbery convictions, age. Variables in Model 2: Same as Model 1 plus recent arrests and incarcerations. Variables in Model 3: Same as Model 2 plus drug use and juvenile activity (self-report).

^aIn prediction sample.

^b"False positive."

^c"False negative."

The juvenile record variables considered as candidates for the regression were as follows:

- o Whether arrested before age 16^{*}
- o Total number of juvenile arrests
- o Whether convicted before age 16^{*}
- o Total number of juvenile convictions
- o Number of juvenile commitments to local facilities
- o Number of juvenile commitments to state facilities[†]

^{*}Dummy variable, 0 = No, 1 = Yes.

[†]California Youth Authority or state prison.

- o Number of times arrested for assault
- o Number of times arrested for auto theft
- o Number of times arrested for burglary
- o Number of times arrested for drug crimes
- o Number of times arrested for forgery or credit card crimes
- o Number of times arrested for murder
- o Number of times arrested for possession of stolen property
- o Number of times arrested for rape or other sex crimes
- o Number of times arrested for robbery
- o Number of times arrested for theft other than auto
- o Number of times arrested for weapons charges

The three-state regression Model 2 for robbery rate (summarized in the Note in Table 3.15) was estimated separately for California prisoners,* resulting in multiple $R^2 = 0.20$, approximately the same as for the original three-state model. Note that no self-report items concerning juvenile activities are included in Model 2. Then, attempting to enter into the California regression any or all of the official-record juvenile variables listed above, none of them entered the equation. (In fact, none had F-to-enter significant at the 0.10 level.)

In summary, the self-report descriptions of juvenile behavior increased R^2 for prediction of robbery rate from 0.21 to 0.29 in the three-state model,† but official-record juvenile variables failed to increase R^2 from 0.20 in the model estimated for California prisoners.

Reasons for Anticipating High Recidivism Among High-Rate Robbers

The variables we found to be predictive of high robbery commission rates have also been found, in earlier research, to be predictive of recidivism. For example, Hoffman and Beck (1980) revalidated a 1976 salient factor score for federal prisoners that includes opiate

* In this regression the respondents were not divided into a calibration set and a prediction set, because the sample size of the calibration set would have been too small. The actual sample size was 130.

† In Model 2 described above, the multiple R^2 was 0.21, and in Model 3, 0.32. However, Model 3 includes drug use variables as well as juvenile variables.

addiction, number of prior convictions, number of prior incarcerations, number of parole revocations, and absence of employment for 6 out of the preceding 24 months in the community. All these variables either entered our regression equations for robbery commission rate or were suppressed at an early (i.e., powerful) stage of the regression.

FACTORS ASSOCIATED WITH COMMISSION RATES FOR CRIMES OTHER THAN ROBBERY AMONG VIOLENT PREDATORS

We have demonstrated that given an incoming incarceration cohort, once one identifies the high-rate robbers, one also has essentially identified convicts who do burglary and other crimes at high rates. Moreover, the high-rate robbers have substantial overlap with violent predators. In this section we discuss what information, aside from simply being a violent predator, is associated with rates of doing crimes *other than robbery*. Table 3.17 summarizes the results of eight multiple regression analyses, for eight types or combinations of crimes. In all the analyses, we considered only the violent predators. The results showed that the primary factors associated with crime rates among violent predators are unemployment and extreme drug use (Table 3.17).

Virtually all violent predators used drugs, but drug use which was extreme even for them had a strong relation with crime rates for all crimes shown except burglary and auto theft. Although there were minor variations as to which type of drug had the strongest association with specific crimes, the most costly and intense drug uses, \$50 a day heroin addiction and frequent high-quantity use of nonopiate psychotropic drugs, were significantly related to rates of assault, forgery, fraud, credit card crimes, drug deals, and overall crime rates.* Theft rate, however, was related to persistence of drug use (use in the measurement period and the four preceding years) rather than to high-rate use.

On the whole, violent predators tend to be employed less regularly and to have less stability at any one job than other convicts. Total

* For the crime of assault, the negative coefficient for infrequent use of amphetamines points to a positive relationship with frequent use.

Table 3.17
 FACTORS ASSOCIATED WITH RATES OF COMMITTING CRIMES
 Violent Predators in Calibration Sample

Type of Crime	Factors Associated with Crime Rate	Specific Predictor Variables	Alternative Predictor Variables (Significant but Suppressed in Stepwise Regression)	B	R ²
Assault	Employment	Continuous unemployment in measurement period and four preceding years		0.47	0.30
	Drug use	Less than weekly use of amphetamines	Percent of months worked in measurement period	-0.44	
	Juvenile crime	Frequent violent crime as a juvenile	Average length of job in measurement period	0.39	
	Prior record	Number of months institutionalized in two years preceding the measurement period		0.05	
		Age first involved in crime		-0.07	
		Institutionalized in state juvenile facility	Past felony convictions	-0.36	

(continued)

Table 3.17--continued

Type of Crime	Factors Associated with Crime Rate	Specific Predictor Variables	Alternative Predictor Variables (Significant but Suppressed in Stepwise Regression)	B	R ²
Burglary	Race	White (dummy variable)	--	1.11	0.06
Auto theft	Age	Age in measurement period		-.1137	0.05
	Prior record	Past prison terms	Commitment to state juvenile facility Age at first conviction	.3659	
Theft other than auto	Drug use	Window 2 drug use	Window 1 drug use General drug use in measurement period	1.1550	0.06
	Employment	Continuous unemployment in measurement period and four preceding years		1.3652	

(continued)

Table 3.17--continued

Type of Crime	Factors Associated with Crime Rate	Specific Predictor Variables	Alternative Predictor Variables (Significant but Suppressed in Stepwise Regression)	B	R ²
Forgery & credit cards	Drug use	Amphetamines used weekly or more in high quantities	Frequent combined use of barbiturates and amphetamines in high doses	1.6043	0.12
	Employment	Heroin addiction combined with barbiturate use	Frequent barbiturate use in high doses and alcohol abuse	.3036	
	Employment	Continuous unemployment in all window periods	\$50/day heroin addiction habit	.9184	
Fraud	Drug use	Barbiturate use in large quantities in measurement period		.9669	0.15
	Employment	Juvenile heroin addiction	\$50/day heroin addiction habit	.8354	
	Employment	Continuous unemployment in all window periods		1.3458	

(continued)

Table 3.17--continued

Type of Crime	Factors Associated with Crime Rate	Specific Predictor Variables	Alternative Predictor Variables (Significant but Suppressed in Stepwise Regression)	B	R ²
Drug deals	Drug use	Use of hard drugs in measurement period (dummy variable)	\$50/day heroin addiction habit Drug use in all window periods Frequent use of barbiturates combined with heroin addiction	2.5826	0.22
	Marital status	Ever married (dummy variable)		1.1290	
	Juvenile crime	Did not do property or violent crime until after age 16		-1.7164	
Robbery + Burglary + Auto theft + Theft + Forgery + Fraud + Assault	Drug use	Amphetamines used weekly or more in high quantities	Use of barbiturates in high quantities Alcohol abuse combined with barbiturate use in high quantities Combined amphetamine and barbiturate use in high quantities	.9695	0.17
	Employment	Continuous unemployment in all window periods Average months worked at each job during measurement period		1.0973	
	Race	White		-.1049	
				.8537	

unemployment among violent predators is significantly related to rates of assault, theft, forgery or credit card crime, fraud, and overall crime rates. In addition, after total unemployment was accounted for, job instability (among those who were working at all) accounted for a significant amount of variance in overall crime rates. It is interesting to note that unemployment is *not* related to the drug dealing rate among violent predators. The more "socially stable" violent predators appear to be high-rate dealers: those who had been married and were slightly older than the rest.

The two crime rates that do not conform to the general picture are those for burglary and auto theft. Among the violent predators, none of the predictor variables available to us explained any substantial amount of variance in rates for these two crimes. The only variable that entered the regression for burglary rate was race. Whites in our sample of inmates tended to be higher-rate burglars than blacks. The rate of auto theft was slightly associated with the number of prior past terms in prison, age adjusted. In other words, high-rate auto theft appears to be a "staple crime" of criminals who are recurrently in and out of the criminal justice system.

In summary, the most serious of the most serious offenders are totally unemployed men who are *not* merely casual drug users. They were first involved in crime at very young ages, were persistently violent as juveniles, and spent relatively long terms institutionalized immediately prior to the measurement period. In our sample of prisoners in Texas, virtually no offenders with these characteristics were found.

Crime Rates for Violent Predators Predicted High and Low

Comparisons of actual crime rates for those predicted to have high, medium, and low rates were made for violent predators in the same way as described for the previous regression analyses. Even for types of crimes with respectably high R^2 in Table 3.17, such as assault, the numerical differences between those predicted high and those predicted low were found to be unremarkable. For example, violent predators predicted to have high assault rates averaged 8.4 assaults per year, while those predicted to have low assault rates averaged 5.0 per year.

The difference between 5.0 and 8.4 has little practical importance, reflecting the fact that violent predators are, on the whole, very high-rate assaulters.

Chapter 4

OFFENDERS WHO COMMIT LESS SERIOUS CRIMES

INTRODUCTION

Violent predators commit so many crimes at high rates that their data overwhelm information about other types of offenders who may also commit some crimes at high rates. For example, a regression analysis of burglary commission rates reveals that the characteristics of high-rate burglars are essentially identical with those of violent predators--because violent predators are often high-rate burglars. Similar "findings" are obtained if any varieties of robbers are included in the analysis.

Nonetheless, it is interesting to know what types of offenders, other than robbers, commit burglary and other property crimes at high rates. In this chapter we report the results of regression analyses in which robbers were excluded. We show that the burglar-dealers include respondents who committed burglary and theft at high rates, and low-level property offenders include respondents who committed forgery and fraud at high rates.

Burglars who are not robbers have personal characteristics that are more "socially acceptable" than those of robbers, and property offenders (who do not do burglary or robbery) are more socially acceptable than burglars in terms of juvenile behavior, employment patterns, drug use, education, and marital stability. When examining only adult prior record, however, these older, less serious offenders appear to have more serious records than those of the high-rate violent predator.

High-rate burglars and property offenders can be distinguished from their low-rate counterparts primarily on the basis of their employment record and drug use. We show that those burglars predicted to be high-rate do an average of 165 burglaries and 202 thefts a year, while those predicted to be low-rate do 4 burglaries and 7 thefts.

Once again, these numerical illustrations of the strength of the prediction equations have been determined by estimating regression coefficients for a randomly selected half of the sample, predicting

crime rates for the other half of the sample from equations with these estimated coefficients, and then comparing the actual crime commission rates for those predicted to be high-rate offenders with the rates for those predicted to be low.

Table 4.1 summarizes the regression analyses reported in this chapter. The next two sections discuss burglars who do not commit robbery, and the final two sections discuss two varieties of property offenders.

CHARACTERISTICS OF BURGLARS

Although many of the most active burglars in an incoming incarceration cohort are also robbers, the burglars who do not commit robbery are also interesting. Our analysis of varieties of criminal behavior (Chap. 2) distinguished burglar-dealers from low-level burglars. This section describes the characteristics of these offenders that distinguish them from other inmates in our sample.

Characteristics of Burglar-Dealers

Burglar-dealers most closely resemble the robber-dealers (Table 4.2). However, the burglar-dealers appear in several ways to be more "socially acceptable" than their robber counterparts.

Like the robber-dealers, the burglar-dealers were more likely than all other respondents to have committed property crime but not violent crime before age 16. However, the robber-dealers differ from the burglar-dealers in their use of hard drugs frequently as juveniles, their addiction to heroin as juveniles, and their multiple commitments to state juvenile facilities.

Both robber-dealers and burglar-dealers were predominantly white. However, the burglar-dealers were not significantly younger than all respondents as were the robber-dealers. Nor did they characteristically have relatively poor employment patterns.

Both robber-dealers and burglar-dealers had had relatively long periods of drug use before the measurement period. And both groups were significantly more likely than other respondents to have a \$50 or more a day heroin habit, to use barbiturates, and to combine alcohol

Table 4.1

SUMMARY OF REGRESSION ANALYSES FOR OFFENDERS
WHO DO NOT COMMIT ROBBERY

Study Group ^a	Dependent Variable ^b	Type of Independent Variable	Variance Explained (R ²)
1. Nonrobbing burglars in calibration sample (N=169)	Burglary rate	Self-report items	0.11
2. Same	Auto theft rate	Self-report items	0.12
3. Same	Other theft rate	Self-report items	0.38
4. Same	Rate for all study crimes except drug dealing	Self-report items	0.27
5. Two varieties of property offenders ^c (N=158)	Auto theft rate	Self-report items	0.09
6. Same	Other theft rate	Self-report items	0.29
7. Same	Forgery rate	Self-report items	0.17
8. Same	Fraud rate	Self-report items	0.22
9. Same	Rate for all study crimes except drug dealing	Self-report items	0.22

^aInmates who were under age 18 at any time during the measurement period were excluded from all study groups.

^bSelf-reported annualized rates were transformed by adding a constant and taking the logarithm.

^cDrug & property offenders, and low-level property offenders.

Table 4.2

CHARACTERISTICS OF RESPONDENTS WHO WERE ROBBER-DEALERS,
BURGLAR-DEALERS, AND LOW-LEVEL BURGLARS

Characteristic	Variety of Criminal Behavior in the Measurement Period		
	Robber- Dealers	Burglar- Dealers	Low- Level Burglars
<u>JUVENILE BEHAVIOR:</u>			
Did no property or violent crime before age 16; property after 16			+
Property crime but not violent crime before age 16	+	+	
Violent crime before age 16			
Violent crime frequently as juvenile			-
Juvenile frequent use of hard drugs other than heroin	+		
Juvenile use of heroin--not prolonged periods			
Juvenile heroin addiction	+		
<u>JUVENILE RECORD:</u>			
Juvenile arrest before age 16, but no conviction before age 16			+
Juvenile conviction before age 16			
Juvenile multiple commitments to state facilities	+		
Living with wife or other woman in window 1			-
Completed high school			-

NOTE: + indicates that the characteristic is significantly more likely (.01 level) to be present in the group than in the average respondent.
- indicates that the characteristic is significantly less likely to be present in the group than in the average respondent.

Table 4.2--continued

Characteristic	Variety of Criminal Behavior in the Measurement Period		
	Robber- Dealers	Burglar- Dealers	Low- Level Burglars
<u>EMPLOYMENT:</u>			
Did not work in window 1 but worked in windows 2 and 3			
Did not work in window periods			
Worked in all window periods	-		
Percent street months worked in measurement period	-		
Average number of months worked at each job in the measurement period	-		
<u>AGE/COHORT:</u>			
Age in measurement period			
Birthyear	+		
<u>RACE:</u>			
White	+	+	
Black	-		
<u>DRUG USE BEFORE MEASUREMENT PERIOD:</u>			
Drug use in window 1	+	+	-
Drug use in window 2	+	+	-
<u>DRUG USE IN MEASUREMENT PERIOD:</u>			
Alcohol abuse			
General drug use	+	+	-
Heroin use weekly or less			
Heroin use daily/paid less than \$50 day			
Heroin use daily/paid over \$50 daily	+	+	

Table 4.2--continued

Characteristic	Variety of Criminal Behavior in the Measurement Period		
	Robber-Dealers	Burglar-Dealers	Low-Level Burglars
Heroin use daily/barbiturate use, weekly (less than 10+ pills on day used)	+		
Used amphetamines and heroin	+		
Barbiturate use less than daily and less than 5 pills daily, when used	+	+	
Barbiturate use less than daily; at least 5 pills daily when used	+		
Barbiturate use daily, 5 or more pills	+		
Barbiturate use and alcohol abuse less than weekly; less than 10 pills when taken			
Barbiturate use and alcohol abuse less than daily; 10+ pills used on days taken			
Barbiturate use and alcohol abuse daily			
Barbiturate and amphetamine use, less than daily	+		
Barbiturate and amphetamine use daily (less than 10 pills)	+		
Barbiturate and amphetamine use daily (10 or more pills)	+		
Amphetamine use less than weekly	+		
Amphetamine use weekly or more, less than 10 pills on days used	+		-
Amphetamine use weekly or more, 10 or more pills on days used			
Combined alcohol and amphetamine use	+	+	
<u>PRIOR INCARCERATION:</u>			
Number of months incarcerated in window 2			
Number of months incarcerated in window 1			

Table 4.2--continued

Characteristic	Variety of Criminal Behavior in the Measurement Period		
	Robber- Dealers	Burglar- Dealers	Low- Level Burglars
Number past prison terms			
Number past jail terms			
<u>PRIOR RECORD</u>			
Total number of arrests			
Number of times on probation			
Number of times probation or parole revoked			

with amphetamines during the measurement period. However, unlike the robber-dealer, the burglar-dealer was not significantly likely to be using barbiturates frequently and in high quantities, nor was he likely to be combining nonopiate psychotropic drugs or combining heroin with other psychotropic drugs.

In other words, burglar-dealers were predominately white drug users, who began committing property crimes (but not necessarily using drugs) as juveniles. They are no more likely to have a prior adult or juvenile record than any other respondent. When compared with all inmates in an incoming incarceration, they appear to be "normal" in terms of employment record, education, age, and marital status. When compared with robber-dealers, they appear to be less extensive drug users and better employed.

Characteristics of Low-Level Burglars

Although both low-level burglars and violent predators commit burglary, they tend to form opposite poles of a continuum. Low-level burglars are significantly more likely than all respondents *not* to have committed violent crimes as juveniles and *not* to have used drugs in the measurement period or the four preceding years. They tend to be relatively late starters at doing crime; although they did property crime as juveniles, it was typically not until after age 16 that they started.

They were, however, more likely to have been arrested before age 16, but *not* convicted, than all respondents. One of the offenses they may have been arrested for was truancy, since they were significantly less likely to have completed high school than all respondents. However, in spite of their lack of a diploma, they were no more or less likely than any other respondents to have been employed.

FACTORS ASSOCIATED WITH CRIME RATES AMONG BURGLARS: BURGLARY, THEFT, AND AUTO THEFT

Burglars who are not robbers appear to be more socially acceptable than robbers, and they tend to do less burglary than robbers. Here we show that essentially the same primary factors, employment and drug

use, are associated with rates of income-producing crimes among robbers and burglars, but the specific predictor variables that are associated with crime rates among burglars are less acutely deviant than those that predict robbery rates among robbers. Moreover, while burglary rates among violent predators are not strongly associated with any of our predictor variables, burglary rates among burglars can be predicted with moderate success using the same predictor variables that apply to other income-producing crimes.

Continuous unemployment was one of the major factors associated with crime rates among violent predators. However, it was *not* found to be associated with crime rates among nonrobbing burglars; instead, employment *instability* appeared to be a factor. The percent of street months the respondent worked during the measurement period is the strongest predictor of burglary commission rate (Fig. 4.1). (See also Figs. 4.2, 4.3, and Table 4.3 for other crime rates.)

Job instability among high-rate burglars did *not* appear to be due to their low educational levels.* However, employment was found to be negatively associated with the persistent drug use that is characteristic of the burglar-dealers. Both percent of street months worked and burglary rates are highly intercorrelated with a \$50 a day heroin habit in the measurement period and use of drugs in the four preceding years.

Above and beyond its deleterious effects on employment, drug use explains a significant amount of variance in burglary, theft, and auto theft rates among burglars. However, different types of drug use are associated with the different types of crime rates. High-cost heroin addiction is positively associated with burglary and negatively associated with auto theft. Psychotropic drug use is positively associated with auto theft.

High-cost heroin addiction is associated with theft; so are non-opiate psychotropic drugs--and these, used in *relatively moderate levels*, were the specific factors associated with theft and auto theft, as opposed to the extreme high-quantity/high-frequency factors we found

* No significant correlation between graduation from high school and employment was found for burglars.

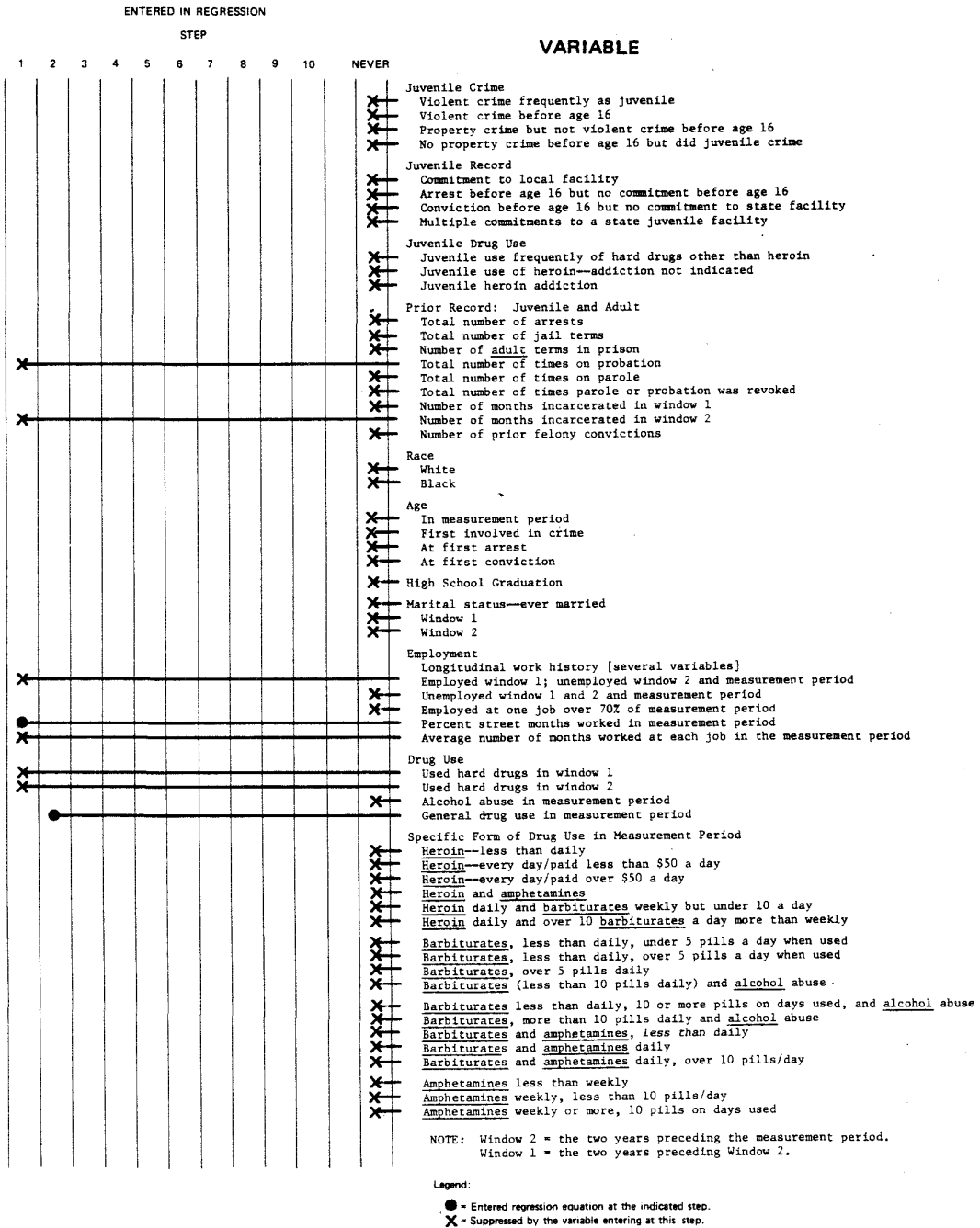


Fig. 4.1 — Schematic representation of the candidate variables that entered and failed to enter the regression model for burglary rate among nonrobbing burglars ($R^2 = 0.11$)

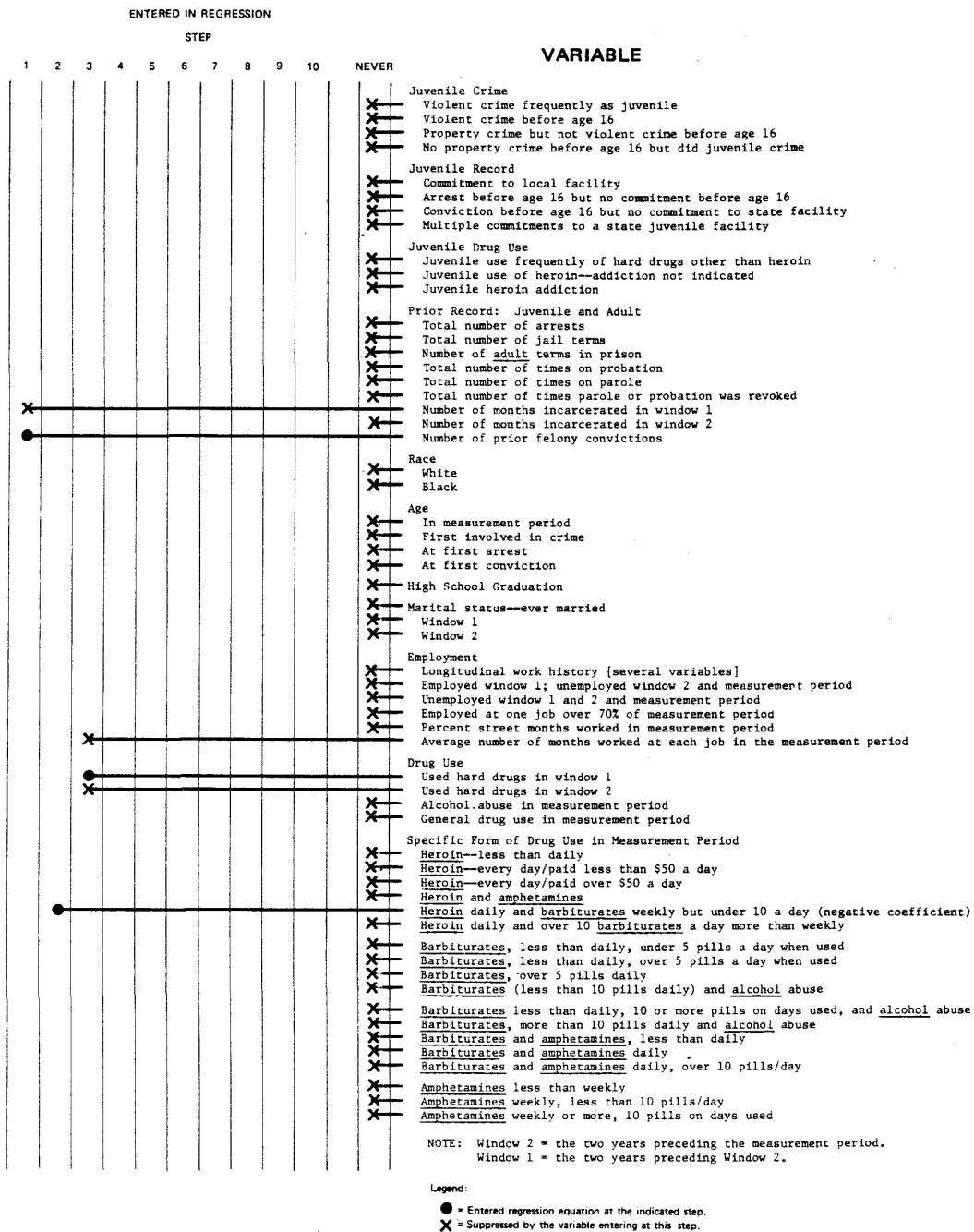


Fig. 4.2 — Schematic representation of the candidate variables that entered and failed to enter the regression model for auto theft rate among nonrobbing burglars in the calibration sample ($R^2 = 0.12$)

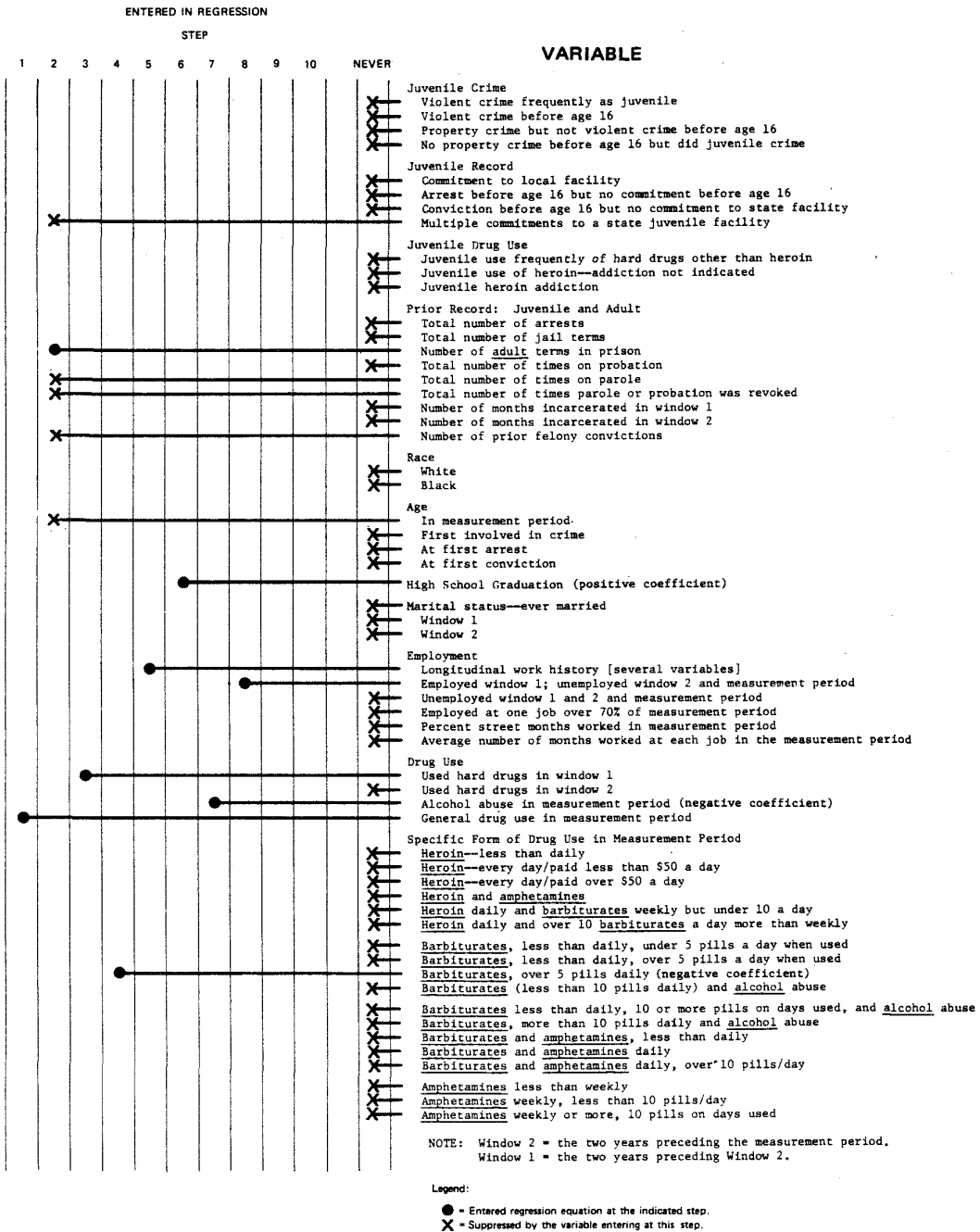


Fig. 4.3 — Schematic representation of the candidate variables that entered and failed to enter the regression model for theft (other than auto) among nonrobbing burglars in the calibration sample ($R^2 = 0.38$)

Table 4.3

FACTORS ASSOCIATED WITH TOTAL CRIME RATES:^a BURGLAR-DEALERS
AND INCOME BURGLARS IN CALIBRATION SAMPLE

Type of Information	Specific Predictor Variables that Entered the Regression	B	Alternative Predictors	Multiple R ²
Drug use	General drug use in measurement period (dummy variable)	1.0096	Moderate use of psychotropic drugs	
	\$50 a day heroin addiction	1.143		
Prior record	---		Number of past terms in prison	
			Number of past felony convictions	
			Number of probation or parole revocations	
Employment	Percent street months worked in measurement period	-3.436	Did not work in measurement period but did in 4 years prior to measurement period	.27

^aBurglary + theft + auto theft + forgery & credit cards + fraud + assault.

to be associated with high crime rates among the violent predators. In fact, use of high quantities of barbiturates was inversely correlated with theft rate among burglars.

Other than employment and drug use, the factors associated with crime rates among burglars are age in the measurement period and prior record. Length of time previously institutionalized is associated with burglary, theft, and auto theft rates. But the "revolving door" phenomenon was found primarily to be associated with theft rate. The burglars who had the highest theft rates tended to be significantly *older* than the rest of the burglars and to have had more past prison terms, more arrests, and more times on parole, and to have been institutionalized as juveniles in a state facility.

For burglars, the overall crime rate (excluding drug-sale crime rates and largely composed of theft rate) is associated with essentially the same factors of unstable employment and drug use, specifically general drug use in the measurement period and a \$50 or more a day heroin addiction. Again, we found that interactions with the criminal justice system (although not primary factors once drug use and employment were controlled) are highly correlated with overall crime rate, as is age.

In summary, the high-rate criminals among the nonrobbing burglars are older men who are either heroin addicts with costly habits or occupationally unstable users of relatively moderate doses of non-opiate psychotropic drugs. They have long arrest and conviction histories, and histories of being in and out of adult prison. Unlike the high-rate robbers, they were not particularly likely to be doing crime as juveniles; and unlike robbers, they were not likely to be totally unemployed for long periods of time.

Finally, once employment and drug use are accounted for, *burglars* in Texas are *not* significantly likely to do crimes at lower rates than burglars in California or Michigan.

Differences in Crime Rates Among Those Predicted High and Low

The regression models for burglary rates (Fig. 4.2) and other-than-auto theft rates (Fig. 4.3) among nonrobbing burglars were applied to

members of the prediction set. The actual crime commission rates of those predicted to have low, medium, and high rates of burglary are shown in Table 4.4, and the rates of those predicted to have low, medium, and high rates of theft (other than auto) are shown in Table 4.5.

The practical value of the prediction is very good in both cases, with those predicted high on burglary having 22 times the burglary rate of those predicted low, and with those predicted high on theft (other than auto) having 38 times the theft rate of those predicted low. Those predicted to have high burglary rates also have high theft and fraud rates, but they are not remarkable in regard to the other crimes shown. Similarly, those predicted high on theft have high burglary and fraud rates. In fact, the average burglary rate for those predicted to have high *theft* rates happens to be higher than the average burglary rate for those predicted to have high *burglary* rates. This would be very unlikely to happen if the prediction set and the calibration set were identical, but it occurs here because of random distinctions among members of the two sets.

CHARACTERISTICS OF PROPERTY OFFENDERS

The last, and definitely least serious, offenders we discuss are the two varieties of property offenders: low-level and drug & property offenders. Unlike the robbers and the burglars, whose juvenile behavior and juvenile interaction with the criminal justice system are distinctive, property offenders in an incoming cohort appear to have been neither "better" nor "worse" as children than anyone else (Table 4.6). Low-level property offenders were less likely to use hard drugs other than heroin as juveniles, but otherwise the property offenders appear to be well spread over the range of juvenile activity.

The low-level property offenders tended to be the oldest among the respondents, and least likely to have ever used drugs in the measurement period or the preceding four years, especially the non-opiate psychotropic drugs. They were not, however, novice criminals; they were significantly more likely than all respondents to have served time in adult prison.

Table 4.4

CRIME COMMISSION RATES FOR SUBGROUPS OF NONROBBING BURGLARS
IN THE PREDICTION SET, DEFINED BY THEIR
PREDICTED BURGLARY RATE

Crime Type	Predicted Burglary Rate ^a	Crime Rate	
		Average	Ratio to Low
Burglary	Low	4.0	1.0
	Medium	41.9	10.5
	High	90.0	22.6
Assault	Low	0.4	1.0
	Medium	0.4	0.8
	High	0.8	1.8
Auto theft	Low	275.7 ^b	1.0
	Medium	5.0	0.02
	High	11.8	0.04
Theft other than auto	Low	17.5	1.0
	Medium	82.5	4.7
	High	95.8	5.5
Forgery & credit cards	Low	10.9	1.0
	Medium	27.8	2.6
	High	27.2	2.5
Fraud	Low	0.3	1.0
	Medium	5.7	17.3
	High	127.7	384.0
Drug dealing	Low	54.5	1.0
	Medium	385.4	7.1
	High	87.7	1.6

^aLow = predicted burglary rate is in the lowest 20 percent.
High = predicted burglary rate is in the highest 20 percent.

^bA single person in the prediction sample whose predicted burglary rate was low reported a very high auto theft rate. Excluding this person, the average is 1.17 auto thefts per year.

Table 4.5

CRIME COMMISSION RATES FOR SUBGROUPS OF NONROBBING BURGLARS
IN THE PREDICTION SET, DEFINED BY THEIR
PREDICTED THEFT RATE

Crime Type	Predicted Theft Rate ^a	Crime Rate	
		Average	Ratio to Low
Theft other than auto	Low	7.3	1.0
	Medium	60.5	8.3
	High	202.6	27.9
Burglary	Low	4.3	1.0
	Medium	21.2	5.0
	High	165.1	38.6
Assault	Low	0.03	1.0
	Medium	0.4	14.9
	High	1.1	39.5
Auto theft	Low	6.3	1.0
	Medium	92.5	14.6
	High	1.2	0.2
Forgery & credit cards	Low	31.8	1.0
	Medium	16.2	0.5
	High	50.7	1.6
Fraud	Low	1.6	1.0
	Medium	1.3	0.8
	High	184.0	116.6
Drug dealing	Low	54.6	1.0
	Medium	289.0	5.3
	High	432.5	7.9

^aLow = predicted rate of theft (other than auto) in the lowest 20 percent.

High = predicted rate of theft (other than auto) in the highest 20 percent.

Table 4.6

CHARACTERISTICS OF PROPERTY OFFENDERS

Characteristic	Drug & Property Offenders	Low-Level Property Offenders
<u>JUVENILE BEHAVIOR</u>		
Did no property or violent crime before age 16; property after 16		
Property crime but not violent crime before age 16		
Violent crime before age 16		
Violent crime frequently as juvenile		
Juvenile frequent use of hard drugs other than heroin		-
Juvenile use of heroin--not prolonged periods		
Juvenile heroin addiction		
<u>JUVENILE RECORD</u>		
Juvenile arrest before age 16 but no conviction before age 16		
Juvenile conviction before age 16		
Juvenile multiple commitments to state facilities		
Characteristic:		
Ever married?		
Living with wife or other woman in window 1?	+	
Completed high school?	+	

NOTE: + indicates that the characteristic is significantly more likely (.01 level) to be present in the group than in the average respondent.
 - indicates the characteristic is significantly less likely to be present.

(continued)

Table 4.6--continued

Characteristic	Drug & Property Offenders	Low-Level Property Offenders
<u>EMPLOYMENT</u>		
Did not work in window 1 but worked in window 2 and 3		
Did not work in window periods		
Worked in all window periods		
Percent street months worked in measurement period		
Average number of months worked at each job in the measurement period		
<u>AGE/COHORT</u>		
Age in measurement period		
Birthyear		-
<u>RACE</u>		
White		
Black		
<u>DRUG USE BEFORE MEASUREMENT PERIOD</u>		
Drug use in window 1?	+	-
Drug use in window 2?	+	-
<u>DRUG USE IN MEASUREMENT PERIOD</u>		
Alcohol Abuse?		
General drug use?	+	-
Heroin use weekly or less	+	
Heroin use daily/paid over \$50 daily	+	-

(continued)

Table 4.6--continued

Characteristic	Drug & Property Offenders	Low-Level Property Offenders
<u>DRUG USE IN MEASUREMENT PERIOD</u> (continued)		
Heroin use daily , barbiturate use weekly (less than 10+ pills once a week)		
Used amphetamines and heroin?		-
Barbiturate use less than daily and less than 5 pills daily, when used		-
Barbiturate use less than daily; at least 5 pills daily when used		-
Barbiturate use daily--5 or more pills		
Barbiturate use and alcohol abuse less than weekly; less than 10 pills when taken		-
Barbiturate use and alcohol abuse less than daily; 10+ pills used on days taken		
Barbiturate use and alcohol abuse daily		
Barbiturate and amphetamine use, less than daily		-
Barbiturate and amphetamine use daily (less than 10 pills)		
Barbiturate and amphetamine use daily (10 or more pills)		
Amphetamine use less than weekly		
Amphetamine use weekly or more, less than 10 pills on days used		-
Amphetamine use weekly or more, 10 or more pills on days used		
Combined alcohol and amphetamine use		-

(continued)

Table 4.6-- continued

Characteristic	Drug & Property Offenders	Low-Level Property Offenders
<u>PRIOR INCARCERATION</u>		
Number of months incarcerated in window 2		
Number of months incarcerated in window 1		
Number past prison terms		+
Number past jail terms	-	
<u>PRIOR RECORD</u>		
Total number of arrests		
Number of times on probation		
Number of times probation or parole revoked		

The drug and property offenders were remarkably different from the others in the incoming incarceration cohort in terms of their higher educational level and their prior avoidance of jail sentences. Although they tended to have significantly more heroin addiction than other members of the incarceration cohort and to have been using drugs for all window periods, they were no more or less likely to use non-opiate psychotropic drugs than all other respondents.

In summary, property offenders as a whole appear to be significantly older and better educated than other respondents. Neither their juvenile criminal behavior nor their employment patterns were particularly distinctive. However, their drug use patterns, if they were using drugs, indicated a significant avoidance of nonopiate psychotropic drug use as juveniles and in the measurement period.

FACTORS ASSOCIATED WITH RATES OF CRIME AMONG PROPERTY OFFENDERS

Since the two varieties of property offenders are composed of convicts who have committed an array of less serious crimes, it is not surprising that different sets of factors were found to be associated with the rates for each crime type. (See Table 4.7.)

It is also notable, but not surprising, that the factors associated with high rates of crime for this predominantly older, more educated group of inmates are different from those associated with high-rate crime among convicts committing other complexes of crimes, especially robbers.

Factors Associated with Theft Rate

The factors associated with theft rate (and overall crime rate, since this primarily reflected theft) were in several ways similar to those associated with robbery rate among robbers (Fig. 4.4). Both theft rate for property offenders and robbery rate among robbers were associated with frequent violent crime as juveniles, long histories of arrests and convictions, very poor employment histories, and long-term heroin addiction.

The differences between the major factors associated with robbery rate among robbers and theft rate among property offenders appear to

Table 4.7
 FACTORS ASSOCIATED WITH RATES OF CRIME
 Property Offenders^a in Calibration Set

Crime Type	Type of Information	Specific Predictor Variables Which Entered the Regression	Alternative Predictors (Suppressed in Stepwise Regression)	B	R ²
Theft other than auto	Prior record	Total number of arrests	[Six prior record variables shown in Fig. 4.4] Frequent violent crime as juvenile Juvenile heroin addiction	.0889	.29
	Drug use	Heroin addiction/less than \$50 daily Heroin addiction/\$50 a day habit Drug use in 3 and 4 years before measurement period	Juvenile frequent use of drugs other than heroin Employment instability [from variables shown in Fig. 4.4]	3.4505	
	Marital status	Ever married?		2.8314	
				-1.1245	
				-.9184	

^a Respondents who did not commit robbery or burglary but did commit auto theft, other theft, fraud, forgery or credit card crimes.
 (continued)

Table 4.7--continued

Crime Type	Type of Information	Specific Predictor Variables Which Entered the Regression	Alternative Predictors (Suppressed in Stepwise Regression)	B	R ²
Auto theft	Prior record	Length of time incarcerated in 2 years prior to measurement period	Juvenile conviction before age 16 (no commitment to state facility)	.0288	.09
	Drug use	Nonaddictive use of heroin in measurement period	High frequency and quantity use of amphetamines and barbiturates	.6546	
Forgery & credit card crimes	Prior record	Committed to juvenile state facility at least once		1.1054	.17
	Drug use	Frequent high quantity use of barbiturates and amphetamines	Combined alcohol abuse and frequent high quantity use of barbiturates and alcohol	5.2540	
	Education	Frequent use of moderate levels of amphetamines		2.0726	
	Marital status	Completed high school		.7518	
		Living with wife or other woman in 2 years prior to measurement period		.6996	

(continued)

Table 4.7--continued

Crime Type	Type of Information	Specific Predictor Variables Which Entered the Regression	Alternative Predictors (Suppressed in Stepwise Regression)	B	R ²
Fraud	Prior record	Total number of arrests	\$50/day heroin habit in measurement period	.0870	.22
	Education	Completed high school		1.0529	
	Age	Age in measurement period		-.0484	
	Marital status	Living with wife or other woman in 2 years prior to measurement period		.7113	
	Employment	Worked 4 years prior to measurement period, but not in measurement period		1.2946	
Theft + Auto theft + Forgery + Fraud + Assault	Prior record	Total number of arrests	Number of prior felony convictions Number of prior terms in prison Number of times on probation Number of times on parole Number of times probation or parole was revoked	.1029	.22

(continued)

Table 4.7--continued

Crime Type	Type of Information	Specific Predictor Variables Which Entered the Regression	Alternative Predictors (Suppressed in Stepwise Regression)	B	R ²
Theft + Auto theft + Forgery + Fraud + Assault (continued)	Prior record (continued)	Total number of arrests (continued)	Length of time institutionalized 3 and 4 years before measurement period Length of time institutionalized in 2 years prior to measurement period Institutionalization in state juvenile facility Frequent violent crimes as juveniles Juvenile heroin addiction \$50/day heroin habit in measurement period Unemployment (all measures)	-1.5435	1.0511
	Drug use	Alcohol abuse in the measurement period Use of hard drugs in 2 years prior to measurement period	General drug use in measurement period (positive relationship)		

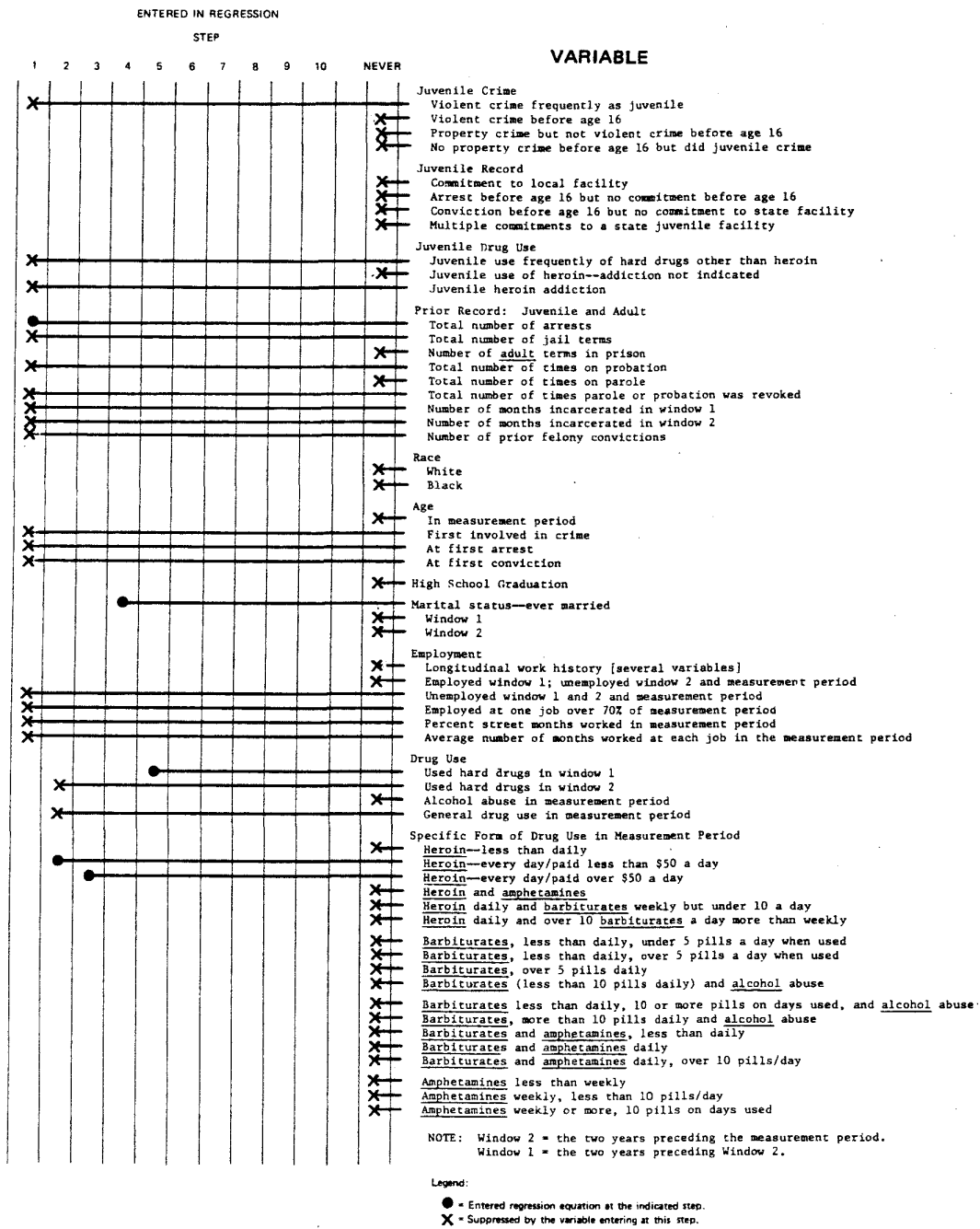


Fig. 4.4 — Schematic representation of the candidate variables that entered and failed to enter the regression model for theft rate among property offenders (offenders who commit property crimes but not burglary or robbery) ($R^2 = 0.29$)

be extent of juvenile incarceration and use of nonopioid psychotropic drugs. Robbery rate among robbers is associated with both of these factors. Theft rate among property offenders is not.

We may be observing a cohort effect here. The older property offenders who were serious and heroin-addicted juvenile delinquents did not become involved in a violent subculture akin to the "modern-day" younger respondents who use extreme amounts of psychotropic drugs and who are deemed to require recurrent incarcerations in state facilities. The older respondents "settled down" to a life of high-rate theft and sporadic work patterns and intermittent jail terms to support their persistent heroin habits.

Explanations other than cohort effects can also be suggested. Some thieves may have been robbers when younger, in which case their juvenile activities would, of course, resemble those of robbers. Or, robbers may characteristically drop out of crime at earlier ages than thieves (perhaps by death), so that among members of an incarceration cohort with similar characteristics, the older ones are more likely to be thieves.

Factors Associated with Fraud and Forgery Rates Among Property Offenders

While high-rate thieves and high-rate robbers have some characteristics in common, the same was not true of property offenders who commit fraud, forgery, or credit-card crimes at high rates. Both high-rate fraud and forgery were found to be positively associated with education and marital status. Both rates were associated with prior record: Fraud was associated with total number of arrests (but not convictions), which may be explained by its association with high-cost heroin addiction (see Table 4.7); forgery, with commitment to a juvenile state institution. In addition, fraud rate was associated with recent unemployment, that is, working in the four years preceding the measurement period but not in the measurement period.

Forgery and credit-card crime rates, on the other hand, were not associated with employment but were associated with psychotropic drug use. Neither forgery rate nor fraud rate was found to be associated with juvenile drug use.

In summary, two sets of factors were found to be associated with high-rate commission of property offenses. One set of factors suggests that the older property offenders who were serious juvenile delinquents and who are now high-rate thieves might once have been high-rate robbers or, had they been born later and in a different milieu, might have developed into high-rate robbers.

Another set of factors indicates that when relatively well-educated and socially stable people turn to crime because of involvement in a subculture where drug use is common, or because of a heroin habit developed as an adult and loss of employment, they will commit predominantly nonviolent, relatively sophisticated crimes at high rates.

Crime Rates for Property Offenders Predicted High and Low

The regression models shown in Table 4.7 were applied to property offenders in the prediction set. The results showed that the regressions do not help to single out the especially high-rate offender for the crimes of auto theft and fraud, but they are quite successful for forgery and moderately successful for theft. Throughout all the analyses reported here, the high-rate auto thief had eluded characterization. As Table 4.8 shows, the high-rate auto thief is certainly not found among the property offenders.

For forgery and credit-card crimes, property offenders who are predicted to be high-rate average 37 times the crime rate of those predicted to be low. We also found (not shown in Table 4.8) that those predicted to commit forgery and credit-card crimes at high rates also committed the other crimes at high rates. Thus, the regression model for forgery and credit-card crimes is more dependable, when checked in the prediction set, than the model for fraud, which happens to have higher R^2 in the calibration set.

Table 4.8

CRIME COMMISSION RATES OF SUBGROUPS OF PROPERTY OFFENDERS^a
IN THE PREDICTION SET, DEFINED BY THEIR PREDICTED RATE

Crime Type	Predicted Crime Rate	Actual Crime Rate	
		Average	Ratio to Low
Theft other than auto	Low	50.0	1.0
	Medium	99.7	2.0
	High	186.0	3.7
Auto theft	Low	0.2	1.0
	Medium	0.4	2.2
	High	0.3	1.3
Forgery & credit cards	Low	3.3	1.0
	Medium	58.3	17.6
	High	123.1	37.1
Fraud	Low	58.2	1.0
	Medium	301.6	5.2
	High	25.1	0.4

^a Respondents who did not commit robbery or burglary but did commit auto theft, other theft, fraud, forgery, or credit-card crimes.

Chapter 5

DRUG USE AND CRIME

INTRODUCTION

The previous chapters confirm research that suggests a significant association between drug use and crime (e.g., Smith et al., 1979; Weissman, 1979; Witte, Schmidt, and Sickles, 1978). In addition, they indicate that drug use is one of the major factors in *serious high-rate* crime. For example, the violent predators, whose rates for all crimes were dramatically higher than the rest of the incoming incarceration cohort, were far more likely than the others to have used hard drugs, including heroin, frequently as a juvenile, and to have used drugs daily and in high quantities during the measurement period. In addition, relatively extreme use of amphetamines and use of high quantities of barbiturates along with alcohol abuse (prior to incarceration) were reported by the violent predators significantly more than by virtually any other respondents, including other robbers.

In our discussion of factors associated with crime rates, we demonstrated that even when factors such as education, age, and employment were accounted for, drug use was one of the major factors associated with virtually every type of crime we studied. We found specific forms of drug use to be strong "postdictors" of specific crime rates.

We now will discuss the relationship between drug use and crime rates in greater detail. We first present findings about the association of particular forms of drug use and crime rates. We show that juvenile drug use is one of the strongest factors associated with the rates of committing robbery, assault, and burglary as an adult. We suggest that heroin addiction in the absence of high monetary costs is not a factor associated with crime rates; we further show that recreational use of heroin is akin to nonopiate psychotropic drug use in its relationship to assault.* And we suggest that nonopiate

* We use the term "nonopiate psychotropic drugs" to refer to barbiturates and amphetamines, as distinguished from opiates and alcohol, although the latter also have psychotropic effects.

psychotropic drug use, especially in the form of multiple drug use, is a strong factor in violent crime.

Then we discuss state differences in drug use and suggest that high crime rates in California are due in part to higher drug use rates.

We also discuss the chronological onset of crime and drug use and suggest that among *adults* the onset of drug use is just as likely to follow onset of crime as to be a criminogenic factor.

Finally, we present findings that indicate that involvement in drug use alone is rarely a sole motive for being involved in crime.

ASSOCIATIONS BETWEEN CRIME AND DRUG USE

Chapters 3 and 4 report on the association of drug use and rates of various types of crimes, after controlling for other predictor variables. Here we show that specific forms of drug use by themselves* are strongly correlated with rates of committing crimes publicly perceived as very serious: robbery, burglary, assault. In addition, drug use is strongly correlated with theft and overall crime rate (excluding drug sales[†]). Drug use factors explain 13 percent, 15 percent, and 15 percent of the variance in robbery, burglary, and assault rates, and 14 percent and 20 percent of the variance in theft and overall crimes (see Table 5.1). The associations between drug use and rates of less serious crimes--auto theft, fraud and forgery or credit-card crimes--although significant, are not as strong.

As has been suggested by past research, the relationship cannot be discussed in unidirectional or simplistic terms. In order to discuss the relationship meaningfully, especially for policy recommendations, one must at least recognize that the same drug, including heroin, may be taken at different frequencies and quantities by different individuals (Blum, 1979); that there may be a threshold dose which has to be exceeded before a drug will overtly affect the behavior

* Other factors such as age and education not controlled.

† Drug sales are of course most highly correlated with drug use; to include drug sales would tautologically inflate the relationship.

Table 5.1

ASSOCIATION BETWEEN CRIME RATES AND DRUG USE
ALL RESPONDENTS IN CALIBRATION SAMPLE^a

Drug Use Factor	Robbery	Assault	Burglary	Theft	GTA	Fraud	Forgery Credit Cards	Total
<u>Juvenile use:</u>								
Frequent use of hard drugs								
Other than heroin	+ 3	+ 6	+ 3	+				+
Nonaddictive use of heroin	5	+ 4	4				+	+
Heroin addiction	++ 2	+ 5	++ 2	++		+ 3		+++
Use of hard drugs in Window 1	++	++ 1	++	++ 3	+ 1	+	+ 4	+++ 3
Use of hard drugs in Window 2	++	++	++	++		+	+	+++
<u>Use of Drug in Measurement Period</u>								
Alcohol abuse		+ 3						
General drug use	++ 1	++	+++ 1	+++ 1	+	+	++	+++ 1
<u>Heroin use:</u>								
Nonaddictive use		+			+			
Addictive use/less than \$50 daily for heroin		7*						
Addictive use/\$50 or more daily for heroin	++ 4	+	++	++ 2		++ 1	++ 1	+++ 2
<u>Amphetamine use:</u>								
Less than weekly use								
Weekly or more/less than 10 pills on days used	+		+	+	+			+
Weekly or more/10 or more pills on days used	+	+	+ 6		3	4*	+	+
<u>Barbiturate use:</u>								
Less than daily use/less than 5 pills on days used	+	+	+	+				+
Less than daily use/5 or more pills on days used	+	++ 2	+	+ 5		2	+3	++
Daily use of 15 or more pills	+	+	+					+ 5
<u>Multiple use:</u>								
Used amphetamines and heroin	+	+	++	++			+	++
Barbiturate use/less than 10 pills on days used plus alcohol abuse		+	+		+			+
Barbiturate use/10 or more pills on days used plus alcohol abuse	+	+	+				+	+
Barbiturate use daily 10 or more pills plus alcohol abuse							+	
Barbiturate use plus amphetamine use less than daily	+	+	+	++				+
Barbiturate use plus amphetamine use/10 pills on days used		+	+					+
Barbiturate use plus amphetamine use/10 or more pills daily	+ 6	+	+		+ 2		+ 2	+ 4
Heroin addiction plus barbiturate use weekly	+ 7*		+ 5	+				+
Heroin addiction Plus barbiturate use weekly/ 10 or more pills on days used				4*				
Multiple R square-Stepwise Regressions factors listed above	.13	.15	.15	.14	.02	.05	.08	.20

* Negative association after other factors are controlled.
 + = Simple correlation $R^2 \geq .10$.
 ++ = Simple correlation $R^2 \geq .20$.
 +++ = Simple correlation $R^2 \geq .30$.
 1 ... 10 Step entered multiple regression.

^aThis is the same calibration sample described in Chap. 3.

of an individual (Greenberg, 1976); and that different drugs have different pharmacological effects which bring about behavior likely to be law-violating (McGlothlin, 1979).

Past studies have also suggested that the relationship between drug use and crime may have less to do with direct effects of the drugs than with factors such as the cost of the drugs (Blum, 1979) or with biological, psychological, or social factors which increase proclivity for both drug abuse and criminal behavior (Blum, 1978; Hare, 1979). We will therefore discuss the associations between drug use and crime rates in specific terms. Except where noted, the associations were found to be significant in California, Michigan, and Texas separately, although we report overall associations here.

Juvenile Drug Use

Juvenile drug use among a general population is, of course, not an all-or-none phenomenon. It can range from casual sporadic use of marijuana, to the form of addiction in which all actions are devoted to obtaining and using heroin. The respondents in our sample also reported a range of involvement with drugs as juveniles, from no experimentation with any drugs (including marijuana), to frequent use of heroin. However, the reported frequency of juvenile involvement with hard drugs was higher than found among unincarcerated populations. Thirty-one percent reported using hard drugs other than heroin frequently as juveniles; an additional 21 percent reported using heroin.

The common conception that juvenile drug use is progressive in nature, beginning with marijuana use and progressing through experimentation with "harder" drugs, frequent use of hard drugs including heroin, and ultimately heroin addiction, was borne out by our respondents' reports.* However, the progression was obviously not inevitable, since only a relatively moderate fraction of the entire cohort became addicted to heroin (13 percent) as juveniles and a nontrivial number appear to use heroin without becoming addicted (9 percent).

* Because of this progressive nature, we were able to construct a Guttman scale of juvenile drug use (see App. C).

We found that juvenile drug use was one of the strongest factors associated with rates of robbery, burglary, and assault in the measurement period (Table 5.1). However, the association was confined to frequent use of "hard" drugs, including heroin. We found *no* association between crime rates and juvenile use of marijuana or experimentation with hard drugs, providing no subsequent, more frequent use took place in the juvenile years. (These findings, as all other findings about drugs in this report, are based on a simulated incoming criminal incarceration cohort and cannot be generalized to any other population.)

Although frequent juvenile use of drugs other than heroin, sporadic juvenile use of heroin, and juvenile heroin addiction were all strongly correlated with burglary, robbery, and assault rates in the measurement period, sporadic use of heroin was the strongest juvenile drug use factor associated with assault rate. This corresponds with the finding we present below that nonaddictive use of heroin in the measurement period is also significantly correlated with assault rate.

Juvenile drug use was also found to be correlated with theft rate in the measurement period.* However, after specific forms of drug use in the measurement period were controlled, juvenile drug use did not appear to explain any significant variance in the theft rate. This suggests that, although the most ardent juvenile users of drugs in the incoming cohort did theft at fairly high rates (in addition to burglary, robbery, and assault), drug users who did not begin until they were adults were also high-rate thieves.

Alcohol Abuse

Alcohol abuse in the measurement period, in and of itself, was found to be significantly associated only with assault rates. In fact, after persistent drug use and barbiturate use it was found to be the strongest factor associated with rates of assault in the

* Juvenile drug use was also correlated with total crime rate in the measurement period. The total crime rate in this case did not include drug deals. Since theft is committed at higher rates than any other crime about which we asked, total rate primarily reflects theft rate.

measurement period. Alcohol abuse in conjunction with barbiturate use was also correlated with robbery and burglary rates; however, this combined abuse only became a factor in robbery rates given use of relatively high quantities of barbiturates (10 or more pills taken on days used).

Heroin Use

The respondents who used heroin during the measurement period were found to commit crimes at much higher rates than other offenders. We thus confirm concurrent findings of Ball et al. (1982). For example, California respondents who were addicted to heroin prior to incarceration reported committing over fifteen times as many robberies, twenty times as many burglaries, and ten times as many thefts as respondents who did not use drugs (see Table 5.2).

However, although we found a significant association between heroin use and rates of crime for each crime type we studied, the relationships were not necessarily linear nor independent of cost. We found that heroin addiction was *not* associated with crime rates unless the amount paid for heroin exceeded \$50/day (Table 5.1). This is congruent with Goldstein's (1980) findings based on observational studies that a substantial number of addicts obtain heroin in exchange for quasi-legal services, for example, bringing drug dealers new customers, and avoid committing major crimes themselves.

On the other hand, we found heroin addiction combined with costs of \$50 or more a day to be a major factor associated in the sample as a whole^{*} with rates of robbery, burglary, theft, fraud, and forgery, and to a lesser degree with assault. (It was not significantly associated with car theft.)

We also found that frequency of heroin use has a curvilinear association with assault rates. Respondents who reported using heroin only weekly or less reported a significantly higher assault rate than other respondents. In addition, we found that once one controls for

* As we will discuss, the relationship differs in Michigan because heroin costs are lower.

Table 5.2

APPROXIMATION OF AVERAGE NUMBER OF DAYS PER UNINCARCERATED YEAR IN WHICH SPECIFIC CRIMES WERE COMMITTED BY HEROIN ADDICTS AND NONADDICTS^a

California Inmates--Prison and Jail

Crime Type	Drug Use During Measurement Period			
	No Drug Use ^b	Drug Use-- Not Heroin	Heroin Use: Not Addicted, or Not Addicted All Months	Heroin Addiction All Months
N	255	114	94	204
Robbery	2.3	11.7	13.1	33.6
Person robbery	0.1	6.7	8.5	15.0
Business robbery	1.2	6.9	3.4	17.8
Burglary	3.4	19.3	31.4	67.6
Assault	1.0	2.8	4.3	4.0
Auto theft	2.3	8.5	2.7	7.1
Theft (other than auto)	6.2	40.2	25.3	65.8
Forgery & credit card crimes	4.6	16.6	13.2	18.2
Fraud	4.1	5.3	10.8	18.4
Theft + forgery + fraud:				
Truncated at 365/yr	14.3	60.5	50.0	88.3
Each crime truncated at 365/yr	17.2	70.6	52.0	109.5
Burglary + theft + forgery + fraud:				
Truncated at 365/yr	16.4	69.9	72.4	133.4
Each crime truncated at 365/yr	20.5	89.9	83.4	177.1
Drug deals	16.9	94.3	114.1	158.1
Total (truncated at 365/yr)	33.1	143.5	156.0	239.2

^aEach crime commission rate was truncated at 365 crimes/year by reducing all higher rates to 365. This procedure was used to permit comparison of data from our survey with results of Ball et al. (1982).

^bOther than marijuana and prescribed drugs.

cost of heroin and use as juveniles, being addicted to heroin and paying less than \$50/day was found to be significantly and *inversely* related to rates of assault.

Juvenile sporadic use of heroin was also strongly related to assault rates. We also found that nonaddictive use of heroin was significantly associated with motor vehicle theft. If, indeed, motor vehicle theft is often an impulse crime, as police officers commonly contend, this would indicate that sporadic heroin use is a characteristic of inmates who are less "career" income-producing criminals than men who are looking for excitement in the form of brawls or joyriding.

Recent studies have shown that heroin is by no means always addictive and that many people may use it for "recreational" purposes (Gandossy et al., 1980). Our findings not only support this hypothesis but suggest that, among criminals, the nonaddicted heroin users and addicts--especially addicts who are not in a severe monetary bind--appear to be distinctly different in their potential for violence. Therefore, application of heroin use as an all-or-none predictor of violent behavior is likely to confound two criminal types.

Barbiturate Use

The crime rate with which barbiturate use in the measurement period had the strongest association was rate of assault. In fact, although past research focused on alcohol use or abuse as one of the major determinants in violent interactions, we found that for this incarceration cohort, barbiturate use of more than five pills on days used was an even stronger factor than alcohol abuse. Barbiturate use has the same physiological effects as alcohol, and, in fact, both are metabolized through the same enzymatic pathways. This suggests that the aggressive behavior related to the use of both alcohol and barbiturates may have a large physical as well as psychological or subcultural component. However, less than daily use of barbiturates had a stronger positive association with assault rates than daily use of barbiturates. This suggests that the relationship is not purely a physical one.

In addition to their positive association with assault, barbiturates when used as hypnotics rather than sedatives (in large doses rather than "sleeping pill" quantities) and used primarily by themselves and not in conjunction with other drugs, were found to be positively associated with rates of property offenses: theft, forgery, fraud, and credit-card crimes. As we discuss below, barbiturates used in conjunction with other drugs are associated with robbery and burglary.

Amphetamine Use

Amphetamine use on a less than weekly basis was not found to be associated with crime rates for any crime we studied, but when taken more than weekly, it was found to be positively associated with all crimes we studied. When all other drug use was accounted for, however, amphetamine use was found to be significantly associated with crime rates only when more than 10 pills were taken on days when they were used. In that case, use was positively associated with burglary and auto theft rate, but negatively associated with fraud.

Combined Drug Use

We were primarily interested in studying the relationship between specific forms of criminal behavior and three types of combined drug use: barbiturates plus alcohol abuse, amphetamines plus barbiturates, and heroin plus barbiturates. Since barbiturates and alcohol produce similar physiological effects, we were interested in determining whether combined use intensified the probability of committing crimes, and in the crime rates with which both barbiturate use and alcohol abuse alone were associated. Similarly, we were interested in determining whether combined amphetamine and barbiturate use--the two drugs having essentially antagonistic effects--either intensified or diminished the probability of committing specific crimes with which barbiturate use was associated. We were interested in combined heroin-barbiturate use because we hypothesized that heroin users who were short of money might take barbiturates to help relieve withdrawal symptoms, meanwhile increasing their criminal behavior for income to purchase heroin.

We were also interested in the possibility that multiple use of drugs that are *not* hypothesized to have any physiological or economic interactive effect might still have a stronger association with crime rates or committing specific crimes than use of one specific drug, because multiple use might be an indicator of membership in a specific deviant subculture for whom the criminal behavior was normative. Therefore, we also studied the relationship of combined amphetamine-heroin use.

Barbiturate Use Plus Alcohol Abuse

It has been suggested that since barbiturates and alcohol have similar pharmacological effects, combined use may have a stronger association with criminal behavior than either alcohol abuse or barbiturate use by itself.

Inmates who reported both alcohol abuse and barbiturate use were more criminally active than alcoholics who eschewed barbiturates. They did not have higher crime rates than those who took barbiturates but did not abuse alcohol. The combination of barbiturate use and alcohol abuse was found to be associated with more serious criminal behavior than alcohol abuse alone, both in terms of specific crime rates and the range of crimes committed. However, frequency and quantity of barbiturate use appeared to be an even more important factor than combined barbiturate and alcohol use in explaining the variance in specific crime rates and inspiring a range of crimes.

This again suggests that the relationship may be a combined physiological and sociopsychological effect.

Amphetamine Plus Barbiturate Use

Although some form of amphetamine and barbiturate use was significantly associated with all crimes we studied except fraud, the association between frequency and quantity of combined amphetamine and barbiturate use and any specific crime rate was *not* linear. Nor did it clearly appear that amphetamine use combined with barbiturates in any given frequency or quantity was a stronger or weaker factor than barbiturate use alone. We also found that associations between this

form of drug use and crime rates varied from state to state. High frequency and high quantities of combined amphetamine and barbiturate use was not found to have a predictable pharmacologically induced effect on crime rates in general; however, it appears to be a strong indicator of specific crime rates in specific states, which suggests that combined use of amphetamines and barbiturates may be part of some criminal subcultures.

Heroin Plus Barbiturate Use

We thought it possible that heroin addicts might use barbiturates to ease heroin withdrawal symptoms, either when they were purposely trying to reduce their addiction or when they were having difficulty paying for their heroin. We therefore hypothesized that heroin addiction combined with barbiturate use might have either a negative relationship with income-producing crime rates, since it might reduce the need for money, or a positive relationship, since combined use would occur during times of financial crisis.

Our findings indicate the presence of both effects. Heroin addiction when combined with at least weekly use of barbiturates was positively and significantly associated with robbery, burglary, and theft rates. Combined use had an inverse relationship with robbery and theft rates after daily cost of heroin was accounted for, which suggests that barbiturates may ameliorate the need for instant cash for a "fix." However, combined use was a significant positive factor associated with burglary rates, which suggests that barbiturates may be used at times to temporarily ease withdrawal until enough money for heroin is obtained.

Amphetamine Plus Heroin Use

This form of multiple drug use was found to be significantly associated with all crime rates we studied except fraud and auto theft, but the crime pattern varied from state to state. In addition, when other drug use patterns were accounted for, the relationship between amphetamine and heroin use was not found to be associated with any crime rates. This suggests also that, although any form of multiple

drug use may be associated with higher crime rates, the most generalizable predictors of higher crimes are forms of multiple use that have a predictable pharmacological interaction or physiological effect.

In summary, drug use appears to have a strong positive effect on crime rates in general. In particular, juvenile frequent use of hard drugs including heroin addiction appeared to be closely related to high-rate serious crime. The need to support a high-cost heroin habit was related to high rates of income-producing crimes, and barbiturate use in high quantities was found to be strongly associated with high rates of assault.

Although specific forms of multiple drug use were found to be related to crime rates, high-cost heroin addiction and high quantity barbiturate use appeared to have a stronger relationship with crime rates, especially rates of serious crimes.

STATE DIFFERENCES IN DRUG USE AND RELATIONSHIP WITH CRIME RATES

We have discussed findings showing that crime rates among the incarceration cohort were lowest in Texas and highest in California (Chap. 2). We have also discussed findings indicating that drug use in the measurement period, and particularly use of relatively high quantities of barbiturates, high-cost heroin addiction, and juvenile drug use, are major factors associated with crime rates. It is therefore not surprising to find differences in drug use among the respondents in the three study states (Tables 5.3-5.7). In particular, it is not surprising to discover that California has significantly more respondents with high-cost heroin habits and respondents who take high quantities of barbiturates.

In California, Michigan, and Texas, * respectively, 40, 24, and 19 percent of the respondents were heroin users. Median costs for heroin were found to be the lowest among respondents in Michigan, which reduced the number of respondents with relatively high-cost habits in that state. Respectively, 25, 9, and 12 percent of the respondents were found to have a \$50 or more per day heroin habit in California, Michigan, and Texas.

* Weighted sample reported for all figures for Texas in this section to compensate for response bias.

Table 5.3

HEROIN USE BY STATE

Heroin Use and Cost	% Respondents ^a		
	Texas ^b	Michigan	California
Frequency of heroin use			
No use	81	76	60
Monthly use	5(28) ^c	7(28)	8(19)
Weekly use	3(17)	4(19)	5(12)
Daily or almost daily use	5(25)	7(30)	10(25)
More than once a day	6(30)	6(24)	18(43)
Daily heroin cost			
\$20 and under	(14)	(22)	(10)
\$21-\$50	(28)	(41)	(32)
\$51-over	(58)	(37)	(59)
Median cost	\$72	\$40	\$70
Categories of heroin use--cost scales			
Both scales			
No drug use	62	59	41
Drugs but not heroin	19	17	17
Heroin use--cost scale B			
Heroin use--\$20 or less	3	5	4
Heroin use--over \$20/day	11	14	21
Greater than daily use	6	6	18
Heroin use--cost scale A			
Heroin use weekly or less	7	9	10
Heroin use greater than weekly, \$50 or less	1	6	7
Paid over \$50/day	12	9	25

^aDoes not include those with missing or conflicting data.

^bWeighted sample.

^cFigures in parentheses give percent of heroin users in category.

Table 5.4

BARBITURATE AND AMPHETAMINE USE BY STATE

Item	% Respondents ^a		
	Texas ^b	Michigan	California
Number of pills taken on days used ("uppers or downers")			
Mode	2	2	10
Median	3-4	3-4	5-6
Frequency of barbiturate use in the measurement period			
No use	77	77	67
Monthly use	12	12	18
Weekly use	8	7	10
Daily or almost daily use	2	3	3
More than once a day	2	1	2
Barbiturate use--amount scale			
No drug use	65	64	46
Drugs but not barbiturates	10	12	18
Barbiturates weekly or less	14	14	16
Five pills or more per day (but not every day)	8	5	15
Daily use or more	4	5	5
Frequency of amphetamine use in the measurement period			
No use	74	78	67
Monthly use	12	12	13
Weekly use	7	6	11
Daily or almost daily use	4	3	5
More than once a day	3	2	4
Amphetamine use--amount scale			
No drug use	64	64	45
Drugs, not amphetamines	10	13	22
Monthly use amphetamines	12	12	12
Weekly or greater use	10	9	13
Ten or more pills daily when used	5	3	9

^aDoes not include those with missing or conflicting data.

^bWeighted sample.

Table 5.5

COMBINED AMPHETAMINE-BARBITURATE USE BY STATE

Item	% Respondents ^a		
	Texas ^b	Michigan	California
No drug use	66	65	46
Used drugs but not both	16	17	30
Used amphetamines and barbiturates less than daily	12	12	16
Used amphetamines and barbiturates daily	5	4	5
Used more than 10 pills daily of amphetamines and barbiturates	3	2	4
Amphetamines but not barbiturates	6	4	8
Barbiturates but not amphetamines	3	5	8

^aDoes not include those with missing or conflicting data.

^bWeighted sample.

Table 5.6

COMBINED ALCOHOL ABUSE-BARBITURATE USE BY STATE

Item	% Respondents ^a		
	Texas ^b	Michigan	California
No drug use	64	62	43
Drugs but not barbiturates	12	13	21
Barbiturates but no alcohol abuse	13	11	14
Both barbiturates and alcohol abuse	7	11	13
Barbiturates less than daily, 10 or more pills on days used; alcohol abuse	3	2	7
Barbiturates daily, 10 or more pills on days used; alcohol abuse	1	1	1
Alcohol abuse but no barbiturate use	16	15	14

^aDoes not include those with missing or conflicting data.

^bWeighted sample.

Table 5.7

COMBINED USE OF HEROIN AND BARBITURATES BY STATE

Item	% Respondents ^a		
	Texas ^b	Michigan	California
No drug use	66	66	46
Used heroin and barbiturates less than weekly	24	23	23
Used heroin weekly or more but barbiturates less than weekly	7	7	23
Used both heroin and barbiturates weekly or more	1	2	3
Paid over \$50 daily for heroin	3	2	4
Used barbiturates weekly or more and used 10 pills/day when used; used heroin weekly or more and paid \$50 or more daily	1	1	1

^aDoes not include those with missing or conflicting data.

^bWeighted sample.

Not only did the California cohort include over twice as many high-cost heroin addicts as in Michigan and in Texas, but high-cost heroin use in California was associated with rates of robbery of businesses and rates of robbery of persons, whereas in Michigan and Texas, this form of heroin addiction was associated with only one type of robbery (Table 5.8). In addition, California high-cost addicts were likely to do burglary in which they encounter a victim in the course of their crime. This was not true in Texas or Michigan.

The California cohort also greatly exceeded Texas and Michigan in the fraction of respondents using barbiturates in high quantities (5 or more pills a day when used) (see Table 5.4). Respectively, 15, 5, and 8 percent of the respondents in California, Michigan, and Texas were high-quantity barbiturate users, and, as we discussed, this form of barbiturate use was highly correlated with assault rates.

These findings indicate that drug use is one of the major causes of high crime rates among the California cohort. Moreover, the finding for the state differences in drug use within the incarceration cohort appear to be analogous to state *differences* in drug use among the *general populations* in the study states (Greenberg and Roberson, 1978). This suggests that drug use is one of the major factors in explaining differences in state crime rates.

Even after factors such as drug use are accounted for, however, Texas still appears to have significantly lower rates of robbery than California and Michigan (see Chap. 3). The reason for the lower rates in Texas became clearer when we compared the respondents' reply to the question: "Do you think you could do the same crime(s) again without getting caught?" Even though the California inmates had as a whole committed more serious crimes than inmates in Michigan and Texas, they were the most likely to believe they could get away with the same crimes; the Texas inmates, who on the whole committed the least serious crimes, were least likely to believe they could do the same crimes without getting caught (Table 5.9).

These findings may illustrate that some states, such as California, appear to have more tolerance for life-styles encompassing frequent criminal acts and use of hard drugs than do other states, such as Texas, where such life-styles may be more rigorously condemned and curtailed.

Table 5.8

CRIME RATES WITH WHICH HIGH COST HEROIN ADDICTION^a
WAS ASSOCIATED IN EACH STATE

Crime	California	Michigan	Texas
Robbery of business	+	+	-
Robbery of persons	+	-	+
Burglary	+	-	+
Burglary with personal contact	+	-	-
Theft	+	+	+++
Robbery + burglary + theft + auto theft + fraud + forgery & credit-card crimes + assault	++	+	++

NOTE: - = no significant relation.
+ = correlation under .10, sig T \leq .01.
++ = correlation .10 - .21, sig T \leq .01.
+++ = correlation over .20, sig T \leq .01.

^aPaid \$50 or more daily for heroin.

Table 5.9

STATE DIFFERENCES IN THE EXTENT TO WHICH
RESPONDENTS BELIEVED THEY COULD
REPEAT THEIR COMMITMENT CRIMES
AND NOT BE CAUGHT

State	% Respondents So Believing
California	50.3
Michigan	34.0
Texas	23.0

NOTE: $\chi^2 = 109.28$, sig. $< .0001$.

THE ONSET OF CRIME AND DRUG USE

Although the relationship between drug use and crime has long been noted, the chronological relationship between drug use and crime is not well understood. It has been variously suggested that (1) use of illegal drugs is one of the first deviant acts committed by an individual on a criminal career path (Robbins and Wish, 1977); (2) use of illegal drugs more immediately increases the probability of committing other illegal acts because of pharmacological effects (McGlothlin, 1979); it gives rise to a need for money to "support a habit" (Gandossy, 1980); or (3) becoming part of a criminal subculture may include learning to use specific drugs (Becker, 1963). More recently, the importance of the drug-and-crime relationship has been questioned (Blum, 1979; Grinspoon and Balcalar, 1978).

It was evident from our sample of inmates that there is a strong relationship between the age of onset of a criminal career and use of drugs (Table 5.10). Slightly under 43 percent of the inmates who reported first committing a crime in the measurement period (window 3)

Table 5.10

RELATIONSHIP BETWEEN DRUG USE AND FIRST INVOLVEMENT IN CRIME

Response	%
	Respondents
Did not report any drug use	
Began crime in the measurement period ...	5
Began crime in Window 2	10
Began crime in Window 1	4
Began crime before Window 1	<u>16</u>
Total	35
Reported crime and drug use before Window 1 ...	21
Reported crime in window before drugs	12.5
Reported drug use in period before crime	10
Reported drugs and crime simultaneously in	
Window 1, 2, or 3	4
Total	82.5
Missing or poor quality data	12.5

also reported using hard drugs. Drug use was reported by 54 percent of those who first committed crimes in window 2, 71 percent of those who first committed crimes in window 1, and 71 percent of those who first committed crimes before window 1 (chi square = 299; sig. < 0.001).*

It should be noted, however, that a small but not negligible fraction of inmates who had lengthy criminal careers had never used drugs. Of those who began committing crimes before window 1, 16 percent did not report any "hard drug use."

Since we did not specifically ask the inmates at which age they began to use drugs, we could not sort out the chronology of drug use and crime for those who began crime as juveniles and also reported drug use as juveniles. We did find, however, that starting to use hard drugs five years or more before current incarceration was almost synonymous with starting criminal activity at least five years previously. Of inmates who reported using hard drugs prior to window 1, 85 percent also reported first involvement in crime prior to that period. Of those who were juveniles during window 1 and reported drug use as juveniles, 78 percent also reported starting crime during or before that period.

When we examined the relationship between period of start of drug use and period of first involvement in crime for the remainder of the inmates, we found that 12.5 percent of the inmates reported involvement in crime in a window period earlier than their involvement in drug use, which lends credence to the hypothesis that, at least in some cases, involvement in a criminal subculture leads to subsequent drug use. Only slightly less than 10 percent of the sample reported drug use in a window period earlier than the window during which first involvement in crime was reported. In addition, 4 percent reported first involvement with crime simultaneous with drug use in window 1, window 2, or window 3.

* See pp. 42-43 of the survey booklet (App. E) for the information about drug use in windows 1 and 2 elicited from respondents. Figure 1.1 shows the relationships among the window periods.

This would suggest that if use of illegal drugs was indeed the first step taken toward a life of crime among our inmate populations, the step was usually taken at least five years before current incarceration.

Moreover, the fact that few inmates reported simultaneously beginning both crime and hard drug use as adults in one of the window periods strongly suggests that the relationship between drug use and criminal behavior is *not* acute, but chronic. Preventing adults from beginning use of hard drugs would not appear to be a sensible approach to reducing crime. Any efforts to reduce crime through drug-use intervention should primarily focus on juveniles; any evaluations of the effects of drug intervention on crime should focus on long-term effects on target populations.

Our findings indicate that, at least among incarceration cohorts, the vast majority of those who have a long-term history of drug use, usually beginning as juveniles, have also had relatively long-term criminal careers. Inmates who began drug use as adults were just as likely to have become involved in crime before using drugs as afterward. Recent ethnographic studies have suggested that drug use and crime exist as part of various complex life-styles rather than having a unidirectional one-to-one relationship. (See, for example, Goldstein, 1980.) Our findings suggest that a relatively large fraction of the inmate population, up to 65 percent, may take part in those life-styles.

To explore this hypothesis, we also examined the motivations inmates gave for their involvement in crime.

DRUGS AS MOTIVES FOR INVOLVEMENT IN CRIME

Inmates were asked about the main reasons for their first involvement in crime. Among the inmates who reported using hard drugs during one of the window periods or as juveniles, only 26 percent cited "money for drugs--had a habit" as one of the primary reasons for first criminal involvement. Moreover, only 77 percent of these inmates indicated that drug involvement was the sole primary reason for first involvement.

Among inmates who had used drugs during one of the window periods or as juveniles, slightly less than half (46 percent) indicated that being on drugs or needing money for drugs was a somewhat or very important reason for having committed crimes in window 3. However, only 2 percent of these inmates cited their drug involvement as the only important motive for doing window 3 crime.

Money for drugs was of course more important to the respondents who had a \$50 a day or more heroin addiction than it was to any other respondent (chi square = 886.8, sig. < .0001). Among the inmates who used heroin every day and paid over \$50 a day for it, 63 percent said money for drugs was a very important reason for committing the crimes and 16 percent said it was somewhat important. Among the other inmates who were using heroin every day but were paying less than \$50 a day for it, only 45 percent said that money for drugs was a very important reason for committing crimes. Among the other inmates who were using drugs but not heroin, only 17 percent said that money for drugs was a very important reason; 47 percent said that it was *unimportant* or *did not apply* in their case.

It should also be noted that among those who used heroin non-addictively, only 20 percent cited "needed money for drugs" as being a very important reason for committing crimes, and an additional 19 percent said it was somewhat important. Over 50 percent reported that "getting money for good times and high living" was a somewhat or very important reason for committing crimes.

Of course, there may be many people in the general population who use drugs and commit crimes as a result. It is quite possible that the sizable number of people who drop out of crime after one arrest include those who found more acceptable ways to pay for their drugs or who quit drug use along with crime. Among inmate populations, however, although specific forms of drug use, particularly high-cost heroin addiction and high-quantity barbiturate use, were strong "post-dictors" of crime rates, drug use alone was not a major reason for becoming involved in a criminal life-style or in committing crimes in the period before last arrest. This suggests that breaking the drug-

crime connection will require more than drug-use prevention or maintenance alone--that any effective program will have to alter not only a criminal user's drug consumption patterns but also his whole daily routine.

Chapter 6

CONCLUSIONS

Our analysis of data from Rand's second inmate survey suggests that offenders can be classified into varieties of criminal behavior according to the combinations of crimes they report committing during a fairly short period of time. The varieties can be approximately ordered according to the public perception of the relative seriousness of crimes they encompass. The variety of criminal behavior an offender reports is strongly correlated with two other measures of seriousness: his annual rate of committing crimes and the persistence of his criminal behavior.

The most serious variety comprises the violent predators--offenders who concurrently rob, assault, and deal drugs. Viewed developmentally, the violent predators have "progressed" furthest along three dimensions of deviance: violence, involvement with drugs, and rejection of public censure for obtaining income illegally. This development is evidenced by their relatively long, violent criminal careers, which began as young juveniles; their heavy involvement in selling and taking hard drugs; their willingness to commit the income crime that the public deems as most serious, namely, robbery; and the high rates at which they tend to commit all other income-producing crimes.

A moderately good distinction can be made between violent predators and less serious varieties of offenders from detailed information about juvenile behavior, employment, and drug use. Knowledge about high-cost heroin addiction and frequent use of high quantities of nonopiate psychotropic drugs are especially useful for making this distinction. Currently, two intertwined problems preclude using such a classification as the basis for criminal justice decisions about individual offenders: the problems of false identifications and inadequate official records.*

* Moreover, we, in common with many researchers, did not shed light on prediction of violence by itself. (See, for example, Monahan, Brodsky, and Shah, 1982.)

As we have indicated throughout the report, there are always some offenders who do not commit the crimes at the rates that their characteristics would suggest. For example, our regression analysis separates high-rate from low-rate robbers with reasonable effectiveness. On the low end, the separation can be considered highly successful: 86 percent of respondents that the regression identified as low-rate robbers reported committing no robberies during the measurement period, and only 3 percent committed more than ten robberies a year. Even so, a 3 percent false-negative rate could be considered a failing of any formula intended for sentencing purposes. At the high end, the false prediction problem is more serious: Although the regression also captured the bulk of high-rate offenders, a substantial proportion of respondents identified as high-rate robbers reported having committed no robberies. Ten percent of those it identified as probable high-rate robbers committed over 63 robberies per street year during the measurement period, but 30 percent reported no robberies.

Predictions based on official records exacerbate the problem of false identifications. Official records were lacking or incomplete in data or pertinent details about offender characteristics we found most powerful in distinguishing between high- and low-rate offenders.

Even if the models were foolproof and the official records sufficiently complete and detailed, the legal and ethical ramifications of their use by the criminal justice system would be a matter of dispute. Sentencing offenders for past crimes that have never been adjudicated runs counter to principles of just deserts, while sentencing them for predicted future crimes runs counter to tenets of free will and justice (von Hirsch, 1976; Fogel, 1973; Gottfredson and Gottfredson, 1980). Therefore, we suggest that our findings should not be used simplistically as criteria for passing judgment on specific individuals.

Our findings do, however, have important implications for understanding crime rates and crime-control policies, in particular drug enforcement.*

* Additional discussion of the policy implications of this research is in our companion volume (Chaiken and Chaiken, 1982).

We have shown that the annualized rates at which offenders commit crime are highly skewed to the right: Only a small proportion of any population of offenders (other than one specifically selected according to its crime rates) commits crimes at high annualized rates. We have also shown that a significantly smaller proportion of respondents in Texas than in California and Michigan committed crimes at high rates. One reason is the smaller proportion of violent predators found in the Texas incoming incarceration cohort than in California or Michigan. In part, Texas' sentencing policies explain this disparity: Lesser offenders are more likely to be incarcerated. But environmental effects may also be present:

- o Violent predators characteristically have high-cost heroin habits, while Texas has a relatively low rate of heroin use in the general population.
- o Unemployment is characteristic of the violent predator, while Texas employment rates are high. (Even when in prison, Texas inmates are required to work at a steady job.)
- o Texas inmates are less likely to believe they could again commit the crimes for which they had been imprisoned without being caught.

Our findings showing the "postdictive" strength of information about a criminal's drug history reinforce the work of Wish et al. (1981), a longitudinal analysis of the subsequent criminal activities of over 17,000 persons arrested in 1973-74 and given urine tests for drugs. If offenders were routinely tested for drug use when arrested, our work and that of Wish et al. (1981) suggest that the tests would, in the long run, help to distinguish between more and less serious offenders. The idea here is not that the drug test would necessarily be relevant for prosecuting the offender on his current arrest, but rather that the history of drug tests would eventually be highly informative. A feasibility study of a drug abuse surveillance system, sponsored by the National Institute on Drug Abuse (Richardson, Morein, and Phin, 1978), showed that such tests are practical in the context of measuring incidence of drug abuse.

Drug use and drug-use patterns not only can tell criminal justice officials a great deal about the kinds and rates of crime a criminal probably commits, but they also have important implications for drug control efforts. Drug use is one of the major factors associated with virtually every type of crime we studied, and specific forms of drug use correlate strongly with crime types and rates. Offenders who have to support \$50-a-day heroin addictions, or who use both alcohol and barbiturates heavily and frequently, are especially likely to be persistent, serious, high-rate criminals. Those who use the alcohol-barbiturate combination commit violent crimes at high rates, while those addicted to heroin usually commit property crimes at high rates.

High crime commission rates are characteristically associated with using combinations of drugs, particularly alcohol with barbiturates and heroin with other psychotropic drugs. These emerging forms of drug abuse may possibly contribute as much to crime as heroin addiction alone did in the past.

Despite the high correlation between drug-use patterns and criminal behavior patterns, simply preventing *adults* from beginning use of hard drugs does not appear to be a sensible approach to reducing crime. Relatively few inmates reported simultaneously beginning both crime and drug use *as adults*. Further, inmates who began using drugs as adults were just as likely to have engaged in crime before using drugs as after. These findings suggest that the relationship between drug use and criminal behavior is *chronic* instead of acute. In our sample, the vast majority of those who had long-term histories of drug use, usually beginning as juveniles, also had relatively long criminal careers. Thus, efforts to reduce crime by reducing drug use should focus primarily on juveniles.

Recent ethnographic studies have suggested that drug use and crime cannot be discussed in one-dimensional or simplistic terms. They exist as part of various complex life-styles, and the relationship between them may have less to do with the direct effect of drugs than with biological, psychological, and social factors that increase proclivity for both drug use and criminal behavior. Ideal intervention must address these factors.

Appendix A

CALCULATIONS OF ANNUALIZED CRIME COMMISSION RATES

INTRODUCTION

This appendix describes how annualized crime-commission rates and related variables were calculated from survey responses. It also presents tabulations of values of selected crime rates. Thirty crime types were defined from responses in part C of the survey instrument.* They come primarily from Secs. I (pp. 16-17), II (pp. 18-19), ..., X (pp. 34-35). We chose variable names for these survey responses beginning with two letters: the letter C (standing for part C) and the letters A through J (corresponding to Secs. I through X) as shown below. After the two letters, the variable names are numbered with the item number in the survey instrument.

Variable name	Survey section	Survey crime
CA	I	Burglary
CB	II	Business robbery
CC	III	Personal robbery
CD	IV	Assault during burglary or robbery
CE	V	Assault not during burglary or robbery
CF	VI	Theft
CG	VII	Auto theft
CH	VIII	Forgery
CI	IX	Fraud
CJ	X	Drug deals

Up to four pairs of analysis variables were constructed for each crime type. Each variable name consists of a prefix denoting the variable type and a suffix denoting the crime type. The crime types labeled by the suffixes break down in the following way:

- o Eight non-assaultive crime types correspond directly to Secs. I-III and VI-X, i.e., variables with prefixes CA-CC and CF-CJ. (Identical questions were asked for each crime type.) Two crime types are refinements of one of these crime types, namely burglary.
- o Eleven assaultive crime types were defined primarily from the variables with prefixes CD and CE.
- o The remaining crime types are summaries resulting from combining information from the previously defined crimes.

The crime types are labeled by suffixes such as GTA, NBROB, and ALLBRG as shown in Table A.1.

* The survey instrument is reproduced in App. E. Page numbers refer to this instrument.

For each crime type SUFFIX, we calculated up to four pairs of analysis variables as listed below. One member of each pair is a minimum estimate and the other is a maximum estimate. Minimum and maximum estimates were calculated for each analysis variable because the information provided by the respondent in answer to different survey items could conflict or be ambiguous.

- o D1SUFFIX and D2SUFFIX: minimum and maximum activity ("Did-do") variables specifying whether the respondent did crime SUFFIX in the measurement period or not. (The measurement period is called "STREET MONTHS ON THE CALENDAR" in the survey instrument.)
- o L1SUFFIX and L2SUFFIX: minimum and maximum estimates of lambda, the average annual crime commission rate for crime SUFFIX during the time on the street in the measurement period.
- o M1SUFFIX and M2SUFFIX: minimum and maximum estimates of the number of months during the measurement period that he committed crime SUFFIX.
- o A1SUFFIX and A2SUFFIX: minimum and maximum estimates of the number of crimes of type SUFFIX during the measurement period which led to arrests.

Table A.2 shows which of these variables were created for each suffix. Every crime type has at least the D1 and D2 variables. Some crime types have all eight variables. The arrest variables are shown near the end of Table A.2.

The minimum and maximum estimates are not intended to be "worst possible" cases, but rather reasonable conclusions from the data. Ambiguities leading to a difference between the minimum and maximum estimates arose from these sources:

- o Conflicting information given by the respondent about the length of the window period.
- o Conflicting rate information.
- o Range specified for number or rate.
- o Verbal response for number or rate ("most", "a lot").
- o Inconsistencies between respondent's statements about crimes committed and his statements about the commitment crime.
- o Incomplete rate information (committed "11 or more").

The rules and procedures established for resolving ambiguities are described below. Some of the decision rules, which may appear to be peculiar or lacking in generality, were developed to handle a small number of unusual cases that were examined individually to determine how to make the appropriate correction. None of the rules refer to a specific respondent's identification number.

STEP 1: DETERMINING STREET MONTHS

"Street months" is the number of months the inmate was on the street and able to commit crimes during the measurement period. The estimate for street months can come from four sources on the survey:

- C9 - A count of blank boxes (months) on the calendar which the respondent wrote on the survey.
- C10 - The respondent's attempt to add 1 to C9. (Should be the real street months.)
- CZD - The count of street months obtained by Rand's survey editor who examined the respondent's calendar. (Blank if the editor agrees with C10.)
- CZE - The number of street months that the respondent wrote in the box on the calendar. (Blank if calendar and survey agree.)

The minimum and maximum street months differ when discrepancies occur in these items. Flags are created to indicate whether other information on the survey agrees with these estimates.

Five logic checks are used to determine which source to use for street months. The logic checks are listed below. If all four sources are missing or the editor provided a code indicating the calendar was fouled up and indecipherable, all logic checks are unknown.

- Logic1 - Unknown if C10 is unknown.
Passed if C9 is blank or $C10 = C9 + 1$.
Failed otherwise.
- Logic2 - Passed if CZD is blank.
Failed otherwise.
- Logic3 - Passed if CZE is blank.
Failed otherwise.

Logic4 - Unknown if C10 is unknown.
Passed if $0 < C10 \leq C3 + 12$.
Failed otherwise.

Logic5 - Unknown if C10 is unknown.
Failed if
months in hospital (C14B) > C10 or
months worked (C18) > C10 or
any months did (CA3, CB3, CC3, CF3,
CG3, CH3, CI3, CJ3) > C10.
Passed otherwise.

If all the logic checks were answered correctly, then, of course, C10 is used as the estimate for minimum and maximum street months. If all items are missing, then street months are missing. C10 should represent the street months and is usually used for the estimate unless the quantity (C9+1) passes more of the logic checks than C10 or the editor wrote numbers in CZD or CZE which disagree with C10. In the first case, C9+1 is used as the estimate. In the second case, the minimum street months is the minimum of C9+1, C10, CZD or CZE, whichever are reasonable numbers. Similarly, the maximum street months is the maximum of C9+1, C10, CZD or CZE.

Thirteen flags were created to indicate problems with the estimates. These flags are described at the end of Table A.2.

STEP 2. ACTIVITY VARIABLES (D1 AND D2)

The activity variables indicate whether we believe the respondent committed the crime in the measurement period or not. Only four pairs of values occur and they are interpreted as follows:

value		meaning
D1	D2	
0	0	inactive
0	1	ambiguous (conflicting information)
1	1	active
-99	-99	unknown

The following general principles were used in constructing the activity variables:

- o If it appeared from one question that the respondent denied committing the crime, and from a later question that he admitted it, the later response was given greater credibility. (Reasons: Respondent doesn't go back and erase; he admits to something else, which makes it easier to admit to the crime in question; he gets himself into a box by admitting arrests and convictions.)

- o If the respondent denied committing a main crime (e.g., burglary) and then said he committed a subcrime (e.g., business burglary), he was counted as inactive on the subcrime (BIZBRG).
- o Later denials did not override earlier admissions.
- o Conviction crimes admitted in CK7 establish D2 = 1. (Reasons: Even if the crime didn't occur during the window period, the respondent did do that crime in the period prior to his arrest, which is the basic idea we are trying to get at. More likely than incidents falling outside the window period is confusion about incidents that occurred in the last month of the window period.) In addition, the D2 variables are convenient for analyses involving conviction crimes, avoiding such confusing findings as "K percent of convicted robbers commit robbery."
- o In general, editors' assumptions (codes 3 and 4) were deemed easier to override than respondents' answers (codes 1 and 2).
- o Arrests were not considered presumptive evidence for commission. (Reasons: If Cn5 is nonzero, while Cn1 = 'No', the respondent may have missed the skip pattern and described arrests outside the window period. In CK4, the instrument specifically allows arrests for crimes he didn't do.)
- o Consistency among different crime types was not enforced. (E.g., it is possible to have D2PERROB = D2BIZROB = D2YPCBRG = 0 and D2ALLROB = 1.) Otherwise, the summary variables would not have provided any information other than that given in the underlying variables. Some preposterous inconsistencies (such as negative crime commission rates) have been indicated by FLAGS and error codes.

2A. Nonassaultive crime types

Activity variables for nonassaultive crimes are derived primarily from the first question in each section CA-CC, CF-CJ: "During the street months on the calendar, did you...?". (The answers to these questions are collectively called Cn1, n=A-C, F-J.) Other variables used in a secondary fashion to help define the activity variables include answers to questions Cn2 through Cn4I about the rate at which the respondent committed the crime, answers to questions concerning admitted conviction crimes (CK7), and answers to replications of questions asked in Inmate Survey I (CK14).

If the respondent answered the questions consistently, the rules for determining activity are simple. He is active if he answered "yes" to question Cn1 and inactive if he answered "no", skipped Cn2-Cn4I and denied the crime in CK7 and CK14. His activity is unknown (-99) if he did not answer any of the relevant questions (including CK7 and CK14).

Inconsistent answers led to more complicated rules. If the respondent or the editor said "no" to question Cn1, but the respondent proceeded to give a "proper" number of crimes in questions Cn2-Cn4I, he is considered active. Or if he didn't answer question Cn1 but gave at least some information in questions Cn2-Cn4I or CK14, he is considered active. All other cases are ambiguous.

Two nonassaultive crimes are refinements of ALLBRG: BIZBRG and YPCBRG. The activity variables for BIZBRG are determined from the activity for ALLBRG and CA6 (page 17); those for YPCBRG are determined from ALLBRG, CA9A and CA9B (page 17). If the inmate is inactive or unknown on ALLBRG, he has the same activity values for BIZBRG and YPCBRG. The following rules apply only if the inmate is active or ambiguous on ALLBRG. If the inmate said he did business burglaries in item CA6, he has the same activity on BIZBRG as ALLBRG. If he denied business burglaries, he is inactive on BIZBRG. If he didn't answer CA6, he is unknown on BIZBRG. If he admitted to personal contact during burglary in CA9A and CA9B, he is active on YPCBRG. If he denied CA9A and CA9B, he is inactive on YPCBRG. If he said "yes" to CA9A but didn't answer CA9B, he has the same activity on YPCBRG as ALLBRG. All other cases are ambiguous.

2B. Assaultive crime types

These activity variables come primarily from sections CD (page 22) and CE (pages 24-25) of the survey. Section CD deals with assaults which occur during burglary or robbery. Section CE deals with assaults separate from assault during burglary or robbery. Table A.1 shows the definition of the eleven assault crime types. They basically come from one or more of the following five items from sections CD and CE:

- CD2* number of people assaulted during burglaries or robberies.
- CD4A number of people from CD2 who might have died.
- CE2 number of times the respondent assaulted someone (not during a burglary or robbery).
- CE3 number of people injured or killed during incidents in CE2.
- CE7A number of people from CE3 who might have died.

In order to determine the activity on the eleven assaultive crime types, we first determined the activity on each of the five items listed above. The activity on the assaultive crimes is determined by (a) the answer on one of these questions, (b) the summary of activity on two of these questions; or (c) the difference of the crime rates between certain pairs of these questions.

* The variable ROB_INCD is an estimate of assault incidents during robbery. It has the same activity as CD2.

In both sections, the activity on the later items depends on the earlier items (e.g., CD4A should not be greater than CD2). These relationships were used when determining the activity for inconsistent cases. When inconsistencies arise because an item was skipped or because the editor responded, more credibility is given to the items answered by the respondent. For example, if the respondent said "no" to CD1 and gave a positive response to CD2, his activity on CD2 is ambiguous. However, if the editor said "no" to CD1 and the respondent gave a positive response to CD2, then he is active.

In section CD, if the respondent answered the items consistently, it is easy to determine his activity. He is active on both if he responded "yes" and gave positive numbers to CD2 and CD4A. If he responded positively to the first two items and denied CD4 and CD4A, he is active on CD2 and inactive on CD4A. If he denied the entire section, he is inactive on both. If his response to CD1 is unknown, his activity is unknown on both. The following inconsistencies are considered active. If he responded "yes" to CD1 and did not give a number to CD2 but responded positively to CD4 or CD4A, he is active on both. If he is active on CD2, skipped CD4 but gave a positive response to CD4A, he is active on CD4A. Other conditions lead to ambiguous activity. The final activities are consistent (e.g., one can only be active on CD4A if he was active on CD2).

Section CE is similar. There is an additional variable: CE2 refers to assault incidents. CE3 is analogous to CD2 and CE7A to CD4A. The same basic rules apply here. For inconsistent responses, CE2 is determined by examining CE1, CE2, CE3 and CE7. The activity on CE2 and the response to CE3 are used to determine the activity on CE3. The activity on CE2 and CE3 and the responses to CE7 and CE7A are used to determine activity on CE7A.

The assaultive crime types are basically summary crimes using the items listed above. The SOURCE column in Table 2 shows how the items are put together to form a crime type. Crimes which are the result of addition (e.g., MURDER) are "summary" crimes and are described in the next section. Crimes which involve subtraction (e.g., NFRASL) are more complicated. The number of crimes associated with each item was first calculated. The respondent was inactive, the number of crimes is 0. Then the number of crimes are subtracted. If the result is positive, the inmate is active or ambiguous. If the result is 0 or negative, the inmate is inactive. The activity is ambiguous if the number of crimes is unknown but the inmate is active or ambiguous on either of the items; or the number of crimes is greater than 0 but the activity on either of the items is ambiguous.

2C. Summary Crimes

Summary crimes are really two or more crimes added together. The activity rules are simple. If any of the basic crimes has an unknown activity, the resulting activity is unknown. Otherwise, the summary crime activity is active if any are active; inactive if all are inactive; and ambiguous in all other cases.

STEP 3. "MONTHS-DID" VARIABLES (M1 AND M2)

For the eight nonassaultive crime types corresponding to survey sections CA-CC, CF-CJ, when a respondent answered that he did the crime "11 or more" times in the measurement period (Cn2=1), he was supposed to tell how many months during the measurement period he actually did the crime (Cn3). For most respondents, the minimum and maximum estimates of the number of "months-did" are both equal to Cn3. If the item was not answered, the estimates are missing. The minimum and maximum differ when a word response was given to Cn3, or a range was given (e.g., 3-5 months). If the respondent gave an answer larger than 99, he is treated as if he responded "all". Estimates for word responses, the minimum and maximum months-did are the functions of the respondent's estimated minimum and maximum street months (STEP1,above). In the table below, MINSM means minimum street months and MAXSM means maximum street months.

word response	M1	M2
all, every	MINSM	MAXSM
a lot, many	$0.75*(MINSM)$	$0.75*(MAXSM)$
couple, few	$0.20*(MINSM)$	$0.20*(MAXSM)$

STEP 4. CRIME COMMISSION RATE VARIABLES (L1 AND L2)

In order to calculate the crime commission rate variables (lambdas), we first estimated the minimum and maximum number of crimes (C1 and C2) committed in the measurement period for each crime type. Then the calculation for the annual crime commission rate is simply $L1 = (C1/MAXSM)*12$ and $L2 = (C2/MINSM)*12$. Lambdas are calculated for every crime type having D2=1, i.e., where the activity is active or ambiguous.

Certain codes were used to denote specific conditions. These codes are described below. Not all crime types have all of these codes. Note that a respondent who does not provide entirely consistent responses can be active or ambiguous and have a lambda of zero. That is why a special code is used to indicate the crime rate for inactive respondents.

Values for Lambdas

value		meaning
minimum	maximum	
>=0	>=0	maximum activity = 1 and a lambda can be calculated
0<=L<=11	-11	maximum activity = 1 and maximum lambda is "11 or more"
>=0	-99	used for summary crimes. One or more of the constituent crimes has known lambda, and at least one has unknown lambda.
-98	-98	inactive (activity is inactive)
-99	-99	unknown (activity may be active, ambiguous or unknown)
-6	-6	used only for crimes YPCBRG and ALLROB if CA9B = 96 (a lot)

4A. Nonassaultive crime types

The number of crimes for these variables is estimated primarily from questions Cn2 through Cn4I in survey sections CA-CC, CF-CJ. The minimum and maximum may differ because the respondent answered with a range (e.g., 4-5); a word response; gave an incomplete answer; or he didn't follow the skip pattern and gave more than one answer. Note that combinations of these conditions occur also.

The technique used here is to calculate six independent estimates of C1 and C2 and then pick the most "credible." The six sources are described below. Remember that any variable used in these calculations may have a minimum and maximum which differ for the reasons listed above. Minimum values are used to calculate the minimum estimate and maximum values are used for the maximum estimates. The final estimates may be refined or overridden from other information. When incomplete answers are given, reasonable ranges are used in the calculations. If Cn2A has a reasonable answer and Cn4A-Cn4I have partial answers, Cn4A-Cn4I are ignored.

- Source 1. If Cn2 = 1, C1 and C2 = 11
If Cn2 = 2, C1 = 1 and C2 = 10
- Source 2. Cn2A CRIMES
- Source 3. Cn4B CRIMES/DAY * Cn4C DAYS/WEEK * MONTHS DID
* 4.3 WEEKS/MONTH
- Source 4. Cn4E CRIMES/WEEK * MONTHS DID * 4.3 WEEKS/MONTH
- Source 5. Cn4G CRIMES/MONTH * MONTHS DID
- Source 6. Cn4I CRIMES/MONTH * MONTHS DID

When all the estimates are calculated, the minimum number of crimes is the smallest of the minimum estimates and the maximum is the largest of the maximum estimates. If sources 2-6 have estimates, source 1 is ignored.

The number of crimes for YPCBRG comes from ALLBRG and CA9B.

C1YPCBRG = minimum(CA9B, C1ALLBRG)

C2YPCBRG = minimum(CA9B, C2ALLBRG)

4B. Assaultive Crime Types

The number of assaultive crimes is measured either in incidents of assaults or the number of people assaulted. The first step is to calculate C1 and C2 for each of the five items listed in the activity section. C1 and C2 for the particular crime type of interest are then calculated by adding or subtracting the appropriate items as show in Table 2. Word responses were recoded as shown below. C1 and C2, which are the result of subtraction, may have negative values.

word response	value
blank	-99
a few	2
a lot	-97
all	6
100 or more	100

4C. Summary Crimes

Crime rates for summary crimes are simply the sum of the crime rates for the component crimes. The rules for calculating L1 and L2 accounting for unknown crime rates are shown below. The rules differ for L1 and L2. It doesn't matter which component crime comes first. If each component crime has the same code, the result is that code (e.g., if crime A is inactive and crime B is inactive, the result is inactive).

Rules for Determining L1

L1 for SUFFXA	L1 for SUFFXB	summary
L1SUFFXA	L1SUFFXB	L1SUFFXA + L1SUFFXB
L1SUFFXA	-98	L1SUFFXA
L1SUFFXA	-99	L1SUFFXA
-98	-99	-99

Rules for Determining L2

L2 for SUFFXA	L2 for SUFFXB	summary
L2SUFFXA	L2SUFFXB	L2SUFFXA + L2SUFFXB
L2SUFFXA	-6	-6
L2SUFFXA	-11	-11
L2SUFFXA	-98	L2SUFFXA
L2SUFFXA	-99	-99
-6	-11	-11
-6	-98	-6
-6	-99	-6
-11	-98	-11
-11	-99	-11
-98	-99	-99

Table A.1

CRIME TYPE DEFINITIONS

<u>Variable</u>	<u>Definition</u>	<u>Page</u>	<u>Item</u> <u>Number</u>	<u>Explanation</u>
NON-ASSAULTIVE CRIME TYPES				
ALLBRG	Survey items CA1 to CA4I, CK7C CK14D	16 39 41	1-4 7C 14D	Burglaries, including personal contact.
BIZROB	Survey items CB1 to CB4I	18	1-4	Business robberies.
PERROB	Survey items CC1 to CC4I	20	1-4	Personal robberies.
NOATFT	Survey items CF1 to CF4I, CK7N	26 39	1-4 7N	Theft or boosting excluding auto theft. (Read as nonauto theft.)
GTA	Survey items CG1 to CG4I, CK7B CK14H	28 39 41	1-4 7B 14H	Auto thefts. (Read as grand theft auto.)
FRGCRD	Survey items CH1 to CH4I, CK7F CK14G	30 39 41	1-4 7F 14G	Forgeries, stolen credit cards and bad checks. (Read as forged card.)
FRAUD	Survey items CI1 to CI4I, CK7G	32 39	1-4 7G	Frauds and swindles.
DRUGDL	Survey items CJ1 to CJ4I, CK7E CK14I	34 39 41	1-4 7E 14I	Drug deals.
BIZBRG	ALLBRG, survey item CA6	17	6	Business burglaries.
YPCBRG	ALLBRG, survey items CA9A and CA9B	17 17	9A 9B	Burglaries with personal contact. (Read as yes, personal contact burglary.)

Table A.1--continued

<u>Variable</u>	<u>Definition</u>	<u>Page</u>	<u>Item</u> <u>Number</u>	<u>Explanation</u>
ASSAULTIVE CRIME TYPES				
MURDER	Survey items CD4A + CE7A	22 25	4A 7A	Count of victims who might have died from assault, burglary or robbery.
ALLASL	Survey items ROB_INCD + CE2	24	3	Assault incidents from assault, burglary or robbery.
NFTASL	Survey items (ROB_INCD - CD4A) + (CE2 - CE7A)	22 24 25	4A 3 7A	Nonfatal assault incidents from assault, burglary or robbery. (Read as nonfatal assault.)
NFRASL	Survey items CE2 - CE7A	24 25	3 7A	Nonfatal assault incidents excluding during burglary or robbery. (Read as nonfatal and robbery assault.)
NRBASL	Survey item CE2	24	3	Assault incidents excluding during burglary or robbery. (Read as nonrobbery burglary assault.)
YRBASL	Survey item ROB_INCD			Assault incidents during burglary or robbery. (Read as yes, robbery burglary assault.)
ALLAHK	Survey items CD2 + CE3	22	2	Assault victims from assault, burglary or robbery. (Read as all assault-hurt-or-kill.)
NFTAHK	Survey items (CD2 - CD4A) + (CE3 - CE7A)	22 22 24 25	2 4A 3 7A	Assault victims during burglary or robbery excluding those who might have died.
NFRAHK	Survey items CE3 - CE7A	22 25	3 7A	Assault victims excluding those during burglary or robbery and those who might have died.

*
 ROB_INCD = CD2 if CD2 LE (C2BIZROB + C2PERRO
 ELSE = C2BIZROB + C2PERROB

Table A.1--continued

<u>Variable Suffix</u>	<u>Definition</u>	<u>Page</u>	<u>Item Number</u>	<u>Explanation</u>
NRBAHK	Survey item CE3	22	3	Assault victims excluding those during burglary or robbery.
YRBAHK	Survey item CD2	22	2	Assault victims during burglary or robbery.
SUMMARY CRIMES				
ALLROB	NBROB + YPCBRG			Business robberies, personal robberies and personal contact during burglaries. (Read as all robbery.)
NBROB	BIZROB + PERROB			Business robberies and personal robberies. (Read as non-burglary robbery.)
ALLTFT	NOATFT + GTA			Thefts, boosting and auto thefts.
ASLROB	NBROB + YRBASL			Robbery or assault as an outgrowth of burglary or robbery.
PROPGL	NOATFT + GTA + FRGCRD + FRAUD			Property crimes excluding burglary. (Read as property gleaning.)
ALLPRP	PROPGL + ALLBRG			All property crimes.
ROBAAS	NBROB + NRBASL			Robbery and assault. (Read as robbery and assault.)
TOTEXD	ROBAAS + ALLPRP			All crimes surveyed, except drug dealing. (Read as total except drugs.)
TOTAL	TOTEXD + DRUGDL			All crimes surveyed.

Table A.2

DOCUMENTATION OF CRIME RATE VARIABLES

<u>VARIABLE</u> <u>NAME</u>	<u>COLUMNS</u>	<u>CARD</u>	<u>SOURCE</u>
ID	3- 6	1	CASE ID
AX1	7- 7	1	RETEST INDICATOR
MINSM	10-12	1	STREET MONTHS
MAXSM	13-15	1	
D1ALLROB	16-18	1	NBROB + YPCBRG
D2ALLROB	19-21	1	
L1ALLROB	22-29	1	
L2ALLROB	30-37	1	
D1NBROB	38-40	1	BIZROB + PERROB
D2NBROB	41-43	1	
L1NBROB	44-51	1	
L2NBROB	52-59	1	
D1BIZROB	8-10	2	SURVEY ITEMS CB1 - CB4I
D2BIZROB	11-13	2	
L1BIZROB	14-21	2	
L2BIZROB	22-29	2	
M1BIZROB	30-32	2	
M2BIZROB	33-35	2	
D1PERROB	36-38	2	SURVEY ITEMS CC1 - CC4I
D2PERROB	39-41	2	
L1PERROB	42-49	2	
L2PERROB	50-57	2	
M1PERROB	58-60	2	
M2PERROB	61-63	2	
D1ALLBRG	8-10	3	SURVEY ITEMS CA1 - CA4I, CK7C, CK14D
D2ALLBRG	11-13	3	
L1ALLBRG	14-21	3	
L2ALLBRG	22-29	3	
M1ALLBRG	30-32	3	
M2ALLBRG	33-35	3	
D1BIZBRG	36-38	3	ALLBRG, SURVEY ITEM CA6
D2BIZBRG	39-41	3	
D1YPCBRG	58-60	3	ALLBRG, SURVEY ITEMS CA9A AND CA9B
D2YPCBRG	61-63	3	
L1YPCBRG	64-71	3	
L2YPCBRG	72-79	3	

Table A.2--continued

<u>VARIABLE</u> <u>NAME</u>	<u>COLUMNS</u>	<u>CARD</u>	<u>SOURCE</u>
D1MURDER	24-26	4	SURVEY ITEMS CD4A + CE7A, CK7I
D2MURDER	27-29	4	
L1MURDER	30-37	4	
L2MURDER	38-45	4	
D1ALLASL	46-48	4	SURVEY ITEMS ROB_INCD + CE2, CK7A, CK7I, CK14A, CK14C
D2ALLASL	49-51	4	
L1ALLASL	52-59	4	
L2ALLASL	60-67	4	
D1NFTASL	8-10	5	SURVEY ITEMS (ROB_INCD - CD4A + (CE2 - CE7A))
D2NFTASL	11-13	5	
L1NFTASL	14-21	5	
L2NFTASL	22-29	5	
D1NFRASL	30-32	5	SURVEY ITEMS (CE2 - CE7A)
D2NFRASL	33-35	5	
L1NFRASL	36-43	5	
L2NFRASL	44-51	5	
D1NRBASL	52-54	5	SURVEY ITEM CE2
D2NRBASL	55-57	5	
L1NRBASL	58-65	5	
L2NRBASL	66-73	5	
D1YRBASL	8-10	6	SURVEY ITEM ROB_INCD
D2YRBASL	11-13	6	
L1YRBASL	14-21	6	
L2YRBASL	22-29	6	
D1ALLAHK	30-32	6	SURVEY ITEMS CD2 + CE3, CK7A, CK7I
D2ALLAHK	33-35	6	
L1ALLAHK	36-43	6	
L2ALLAHK	44-51	6	
D1NFTAHK	52-54	6	SURVEY ITEMS (CD2 - CD4A) + (CE3 - CE7A)
D2NFTAHK	55-57	6	
L1NFTAHK	58-65	6	
L2NFTAHK	66-73	6	

Table A.2--continued

<u>VARIABLE</u> <u>NAME</u>	<u>COLUMNS</u>	<u>CARD</u>	<u>SOURCE</u>
D1NFRAHK	8-10	7	SURVEY ITEMS CE3 - CE7A
D2NFRAHK	11-13	7	
L1NFRAHK	14-21	7	
L2NFRAHK	22-29	7	
D1NRBAHK	30-32	7	SURVEY ITEM CE3
D2NRBAHK	33-35	7	
L1NRBAHK	36-43	7	
L2NRBAHK	44-51	7	
D1YRBAHK	52-54	7	SURVEY ITEM CD2
D2YRBAHK	55-57	7	
L1YRBAHK	58-65	7	
L2YRBAHK	66-73	7	
ERRCODE	74-76	7	
D1NOATFT	8-10	8	SURVEY ITEMS CF1 - CF4I, CK7N
D2NOATFT	11-13	8	
L1NOATFT	14-21	8	
L2NOATFT	22-29	8	
M1NOATFT	30-32	8	
M2NOATFT	33-35	8	
D1GTA	36-38	8	SURVEY ITEMS CG1 - CG4I, CK7B, CK14H
D2GTA	39-41	8	
L1GTA	42-49	8	
L2GTA	50-57	8	
M1GTA	58-60	8	
M2GTA	61-63	8	
D1ALLTFT	8-10	9	NOATFT + GTA
D2ALLTFT	11-13	9	
L1ALLTFT	14-21	9	
L2ALLTFT	22-29	9	
M1ALLTFT	30-32	9	
M2ALLTFT	33-35	9	
D1FRGCRD	36-38	9	SURVEY ITEMS CH1 - CH4I, CK7F, CK14G
D2FRGCRD	39-41	9	
L1FRGCRD	42-49	9	
L2FRGCRD	50-57	9	
M1FRGCRD	58-60	9	
M2FRGCRD	61-63	9	

Table A.2--continued

<u>VARIABLE</u> <u>NAME</u>	<u>COLUMNS</u>	<u>CARD</u>	<u>SOURCE</u>
D1FRAUD	8-10	10	SURVEY ITEMS CI1 - CI4I, CK7G
D2FRAUD	11-13	10	
L1FRAUD	14-21	10	
L2FRAUD	22-29	10	
M1FRAUD	30-32	10	
M2FRAUD	33-35	10	
D1DRUGDL	36-38	10	SURVEY ITEMS CJ1 - CJ4I, CK7E, CK14I
D2DRUGDL	39-41	10	
L1DRUGDL	42-49	10	
L2DRUGDL	50-57	10	
M1DRUGDL	58-60	10	
M2DRUGDL	61-63	10	
D1ASLROB	8-10	11	NBROB + YRBASL
D2ASLROB	11-13	11	
D1PROPGL	52-54	11	NOATFT + GTA + FRGCRD + FRAUD
D2PROPGL	55-57	11	
L1PROPGL	58-65	11	
L2PROPGL	66-73	11	
D1ALLPRP	8-10	12	PROPGL + ALLBRG
D2ALLPRP	11-13	12	
L1ALLPRP	14-21	12	
L2ALLPRP	22-29	12	
D1ROBAAS	30-32	12	NBROB + NRBASL
D2ROBAAS	33-35	12	
L1ROBAAS	36-43	12	
L2ROBAAS	44-51	12	
D1TOTEXD	52-54	12	ROBAAS + ALLPRP
D2TOTEXD	55-57	12	
L1TOTEXD	58-65	12	
L2TOTEXD	66-73	12	
D1TOTAL	8-10	13	TOTEXD + DRUGDL
D2TOTAL	11-13	13	
L1TOTAL	14-21	13	
L2TOTAL	22-29	13	

Table A.2--continued

VARIABLE NAME	COLUMNS	CARD	SOURCE
A1BIZROB	30-32	13	SURVEY ITEM CB5
A2BIZROB	33-35	13	
A1PERROB	36-38	13	SURVEY ITEM CC5
A2PERROB	39-41	13	
A1ALLBRG	42-44	13	SURVEY ITEM CA5
A2ALLBRG	45-47	13	
A1NOATFT	48-50	13	SURVEY ITEM CF5
A2NOATFT	51-53	13	
A1GTA	54-56	13	SURVEY ITEM CG5
A2GTA	57-59	13	
A1FRGCRD	60-62	13	SURVEY ITEM CH5
A2FRGCRD	63-65	13	
A1FRAUD	66-68	13	SURVEY ITEM CI5
A2FRAUD	69-71	13	
A1DRUGDL	72-74	13	SURVEY ITEM CJ5
A2DRUGDL	75-77	13	
FLAG1	8-9	14	MIN STREET MONTHS < C14B
FLAG2	10-11	14	MIN STREET MONTHS < C18
FLAG3	12-13	14	MIN STREET MONTHS < C21
FLAG4	14-15	14	CA MON DID > MIN STREET MON
FLAG5	16-17	14	CB MON DID > MIN STREET MON
FLAG6	18-19	14	CC MON DID > MIN STREET MON
FLAG7	20-21	14	CF MON DID > MIN STREET MON
FLAG8	22-23	14	CG MON DID > MIN STREET MON
FLAG9	24-25	14	CH MON DID > MIN STREET MON
FLAG10	26-27	14	CI MON DID > MIN STREET MON
FLAG11	28-29	14	CJ MON DID > MIN STREET MON
FLAG12	30-31	14	MAX ST MON > 24 & C14B C18 C21 < 24
FLAG13	32-33	14	C10 NE C3 + 12

APPENDIX TABULATIONS OF CRIME COMMISSION RATES

The following tables give distributions and quantiles of annualized crime commission rates for selected crime types. Tables A.3-A.17 give statistics for California, Michigan, and Texas separately, and jail inmates separately from prison inmates. Table A.18 gives the factor analysis of activity variables (D2). Table A.19 gives statistics for the ten varieties of offenders.

Table A.3
 CRIME COMMISSION RATES--INMATE SURVEY II
 Burglary

	Subgroup										Total
	California		Michigan		Texas		Weighted		Prison		
	Prison	Jail	Prison	Jail	Prison	Jail	Prison	Jail	Prison	Jail	
Percent active ^a	54.2	42.9	45.4	34.0	46.8	44.8					
For actives:											
25th percent	3.2	2.4	2.5	2.1	1.3	2.2					
Median	9.8	6.3	6.2	4.9	3.6	5.5					
75th percent	118.	27.	51.	15.	12.	30.					
90th percent	384.	189.	400.	213.	112.	232.					
Mean	116-204	63-97	84-122	89-144	44-58	76-118					
Distribution for actives:											
$\lambda < 1$	3.4	9.8	4.3	8.2	17.4	9.4					
< 2	7.9	11.8	11.6	14.3	12.3	11.4					
< 3	11.8	23.0	12.2	28.0	14.8	11.9					
< 4	5.1	28.1	11.0	36.7	7.5	7.4					
< 5	7.9	36.0	6.7	45.1	7.4	8.1					
< 10	14.0	50.0	12.2	57.9	12.4	13.9					
< 20	9.0	59.0	7.9	65.9	8.0	8.2					
< 30	5.1	64.0	4.9	70.7	2.6	4.7					
< 40	2.8	66.9	2.4	73.2	3.7	2.3					
< 50	1.7	68.5	1.8	75.0	1.1	1.5					
< 100	5.1	73.6	3.7	78.7	2.1	3.6					

^aAverage of D1 and D2. For this crime type, the difference between D1 and D2 is substantial.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.4
 CRIME COMMISSION RATES--INMATE SURVEY II
 Business Robbery

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	34.5	10.6	10.6	25.9	8.1	16.0	18.6					
For actives:												
25th percent	2.9	1.4	1.4	1.6	2.7	1.0	1.9					
Median	6.3	5.1	5.1	4.5	6.2	2.8	4.6					
75th percent	27.	13.	13.	10.	28.	6.	14.					
90th percent	155.	58.	58.	31.	96.	20.	58.					
Mean ^b	32-61	13-20	13-20	22-35	20-31	9-14	21-36					
Distribution for actives:												
$\lambda < 1$	4.1	21.4	21.4	12.7	15.4	25.2	14.1					
< 2	10.7	9.5	31.0	12.7	7.7	19.0	12.9					
< 3	9.9	--	--	14.7	--	8.5	9.1					
< 4	5.8	2.4	33.3	3.9	19.2	9.7	6.8					
< 5	12.4	14.3	47.6	11.8	7.7	5.4	10.4					
< 10	12.4	26.2	73.8	20.6	7.7	13.5	16.0					
< 20	11.6	11.9	85.7	8.8	15.4	8.7	10.4					
< 30	11.6	--	--	4.9	3.8	4.4	6.3					
< 40	2.5	4.8	90.5	2.9	3.8	--	2.4					
< 50	0.8	--	--	2.0	3.8	--	1.0					
< 100	6.6	7.1	97.6	1.0	7.7	2.5	4.3					

^aAverage of D1 and D2.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.5
 CRIME COMMISSION RATES--INMATE SURVEY II
 Person Robbery

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	29.6	18.3	18.3	26.2	15.5	16.9	16.9	16.9	16.9	16.9	20.8	
For actives:												
25th percent	2.4	2.6	2.6	1.7	1.5	.9	1.7	1.5	.9	.9	1.8	
Median	5.4	5.2	5.2	4.5	4.2	2.7	4.5	4.2	2.7	2.7	4.3	
75th percent	21.	15.	15.	15.	10.	5.1	15.	10.	5.1	5.1	11.	
90th percent	85.	80.	80.	198.	33.	11.	198.	33.	11.	11.	57.	
Mean	43-50	31-50	31-50	87-118	12-32	7-10	87-118	12-32	7-10	7-10	40-56	
Distribution for actives:												
λ < 1	7.8	11.4	11.4	12.6	12.0	12.0	12.6	12.0	12.0	12.0	14.0	
< 2	7.8	8.6	20.0	16.5	20.0	19.6	29.1	20.0	32.0	19.6	14.1	
< 3	13.7	7.1	27.1	8.7	37.9	8.0	37.9	8.0	40.0	9.7	9.8	
< 4	8.8	11.4	38.6	5.8	43.7	8.0	43.7	8.0	48.0	8.7	8.4	
< 5	7.8	10.0	48.6	11.7	55.3	4.0	55.3	4.0	52.0	10.5	9.3	
< 10	18.6	18.6	67.1	16.5	71.8	24.0	71.8	24.0	76.0	14.7	17.9	
< 20	9.8	11.4	78.6	5.8	77.7	6.0	77.7	6.0	82.0	6.5	7.9	
< 30	8.8	5.7	84.3	4.9	82.5	2.0	82.5	2.0	84.0	--	4.6	
< 40	--	2.9	87.1	1.9	84.5	10.0	84.5	10.0	94.0	1.1	2.4	
< 50	2.0	1.4	88.6	--	--	--	--	--	--	1.3	1.0	
< 100	6.9	2.9	91.4	1.9	86.4	2.0	86.4	2.0	96.0	1.1	3.1	
											92.5	

^aAverage of D1 and D2.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.6

CRIME COMMISSION RATES--INMATE SURVEY II
Business + Person Robbery

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	48.6	22.9	22.9	37.6	19.9	25.3	30.1					
For actives:	2.8	1.9	1.9	2.2	1.8	1.0	2.					
25th percent	8.0	5.5	5.5	5.7	4.8	3.2	5.					
Median	29.	21.	21.	20.	16.	9.	16.					
75th percent	155.	118.	118.	155.	97.	22.	87.					
90th percent	49-74	31-51	31-51	75-108	17-37	10-16	41-61					
Mean												
Distribution for actives:	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.
$\lambda < 1$	4.7	4.7	15.9	15.9	12.1	12.1	12.1	12.1	15.6	15.6	21.5	21.5
< 2	10.1	14.8	10.2	26.1	10.1	22.1	10.1	22.1	10.9	26.6	17.2	38.8
< 3	11.2	26.0	5.7	31.8	11.4	33.6	11.4	33.6	9.4	35.9	11.7	50.5
< 4	7.7	33.7	9.1	40.9	8.1	41.6	8.1	41.6	12.5	48.4	7.6	58.1
< 5	6.5	40.2	8.0	48.9	4.7	46.3	4.7	46.3	3.1	51.6	5.0	63.1
< 10	15.4	55.6	19.3	68.2	17.4	63.8	17.4	63.8	17.2	68.8	14.4	77.6
< 20	13.6	69.2	9.1	77.3	11.4	75.2	11.4	75.2	10.9	79.7	11.5	89.1
< 30	7.1	76.3	4.5	81.8	6.0	81.2	6.0	81.2	3.1	82.8	3.5	92.6
< 40	2.4	78.7	3.4	85.2	2.7	83.9	2.7	83.9	3.1	85.9	1.4	94.0
< 50	2.4	81.1	--	--	2.0	85.9	2.0	85.9	3.1	89.1	--	--
< 100	6.5	87.6	5.7	90.9	2.7	88.6	2.7	88.6	3.1	92.2	3.1	97.1

^a Average of D1 and D2.

^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.7
 CRIME COMMISSION RATES---INMATE SURVEY II
 Assault

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	46.6	27.4	27.4	33.6	22.6	25.6	25.6	25.6	25.6	25.6	29.5	
For actives:												
25th percent	1.5	1.2	1.2	1.5	1.1	0.8	0.8	0.8	0.8	0.8	1.1	
Median	3.6	2.8	2.8	2.8	1.9	1.5	1.5	1.5	1.5	1.5	2.4	
75th percent	10.5	6.0	6.0	6.	6.6	3.3	3.3	3.3	3.3	3.3	6.1	
90th percent	18	12	12	12	16	7.6	7.6	7.6	7.6	7.6	13	
Mean	7.1-7.6	6.0-6.9	6.0-6.9	4.8-5.3	4.7-5.7	3.2-3.4	3.2-3.4	3.2-3.4	3.2-3.4	3.2-3.4	5.2-5.8	
Distribution for actives:												
$\lambda < 1$	Int. 14.6	Int. 21.0	Cum. 21.0	Int. 12.2	Int. 23.3	Int. 23.3	Cum. 23.3	Int. 23.3	Int. 33.1	Int. 33.1	Int. 20.5	
< 2	Cum. 18.4	Cum. 41.0	Cum. 41.0	Cum. 37.4	Cum. 52.1	Cum. 52.1	Cum. 52.1	Cum. 52.1	Cum. 59.0	Cum. 59.0	Cum. 23.1	
< 3	12.0	11.4	52.4	15.3	6.8	6.8	58.9	9.0	9.0	68.0	11.3	
< 4	8.9	12.4	64.8	7.6	9.6	9.6	68.5	8.6	8.6	76.6	9.2	
< 5	5.1	8.6	73.3	13.0	5.5	5.5	74.0	5.0	5.0	81.6	7.4	
< 6	3.8	1.9	75.2	1.5	--	--	74.8	3.6	3.6	85.1	2.5	
< 7	5.1	6.7	81.9	3.8	2.7	2.7	78.6	3.8	3.8	89.0	4.5	
< 8	3.2	--	--	1.5	2.7	2.7	80.2	1.5	1.5	90.5	1.8	
< 9	2.5	1.0	82.9	3.1	2.7	2.7	83.2	--	--	--	1.8	
< 10	0.6	1.0	83.8	4.6	1.4	1.4	87.8	--	--	--	1.5	
< 20	18.4	11.4	95.2	7.6	11.0	11.0	95.4	6.7	6.7	97.2	11.3	
											94.9	

^aAverage of D1 and D2.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.8
 CRIME COMMISSION RATES--INMATE SURVEY II
 Theft Other Than Auto

	Subgroup										Total	
	California			Michigan			Texas					
	Prison	Jail	Jail	Prison	Jail	Jail	Prison	Prison	Prison	Weighted Prison		
Percent active ^a	41.6	41.8	41.8	39.7	30.6	30.6	36.4	38.0				
For actives:	5.1	3.9	3.9	3	2.8	2.8	2.6	3.3				
25th percent	16	9	9	7	6.0	6.0	5.7	8				
Median	107	109	109	79	39	39	55	83				
75th percent	724	583	583	296	384	384	387	485				
90th percent	185-326	173-236	173-236	97-125	87-203	87-203	122-150	135-202				
Mean												
Distribution for actives:												
λ < 1	1.4	1.4	8.8	4.5	8.9	8.9	7.9	6.3				
< 2	2.2	3.6	3.1	10.2	14.6	12.2	10.3	7.5				
< 3	2.9	6.5	8.2	8.9	23.6	4.4	9.7	7.3				
< 4	7.2	13.8	5.7	10.2	33.8	12.2	10.7	9.1				
< 5	8.7	22.5	5.7	8.3	42.0	5.6	6.7	7.0				
< 10	20.3	42.8	22.0	15.9	58.0	14.4	13.5	17.2				
< 50	24.6	67.4	13.8	14.6	72.6	18.9	16.6	17.4				
< 100	7.2	74.6	6.3	6.4	79.0	4.4	2.9	5.4				
< 200	6.5	81.2	5.7	7.0	86.0	4.4	7.3	6.4				
< 300	1.4	82.6	4.4	4.5	90.4	2.2	2.6	3.1				
< 500	4.3	87.0	3.8	3.2	93.6	3.3	4.1	3.8				

^aAverage of D1 and D2. In some subgroups the difference between D1 and D2 is substantial.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.9
 CRIME COMMISSION RATES--INMATE SURVEY II
 Auto Theft

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	24.3	20.6	20.6	23.2	15.8	23.2	15.8	15.8	18.8	18.8	20.4	
For actives:	1.8	1.0	1.0	2	1.7	2	1.7	1.7	1.2	1.2	1.4	
25th percent	6	3.1	3.1	4.8	4.9	4.8	4.9	4.9	2	2	3.4	
Median	12	8	8	48	11	48	11	11	5	5	9	
75th percent	99	56	56	413	43	413	43	43	10	10	77	
90th _b percent	38-102	49-56	49-56	214-248	82-86	214-248	82-86	82-86	7-10	7-10	76-100	
Mean												
Distribution for actives:	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.
$\lambda < 1$	11.7	11.7	22.7	13.9	13.5	13.9	13.5	13.5	18.5	18.5	16.3	16.3
< 2	15.6	27.3	19.7	10.1	24.1	10.1	24.1	27.0	30.8	49.4	19.0	35.3
< 3	14.3	41.6	6.1	8.9	32.9	8.9	32.9	35.1	10.1	59.5	9.8	45.0
< 4	6.5	48.1	9.1	7.6	40.5	7.6	40.5	43.2	6.7	66.1	7.4	52.5
< 5	1.3	49.4	7.6	10.1	50.6	10.1	50.6	51.4	6.6	72.7	6.6	59.0
< 10	18.2	67.5	13.6	15.2	65.8	15.2	65.8	75.7	16.6	89.4	16.9	75.9
< 20	13.0	80.5	6.1	5.1	70.9	5.1	70.9	83.8	2.9	92.3	6.7	82.7
< 30	3.9	84.4	3.0	2.5	73.4	2.5	73.4	86.5	1.2	93.5	2.6	85.2
< 40	---	---	---	---	---	---	---	89.2	1.0	94.5	0.6	85.8
< 50	3.9	88.3	1.5	2.5	75.9	2.5	75.9	94.6	1.0	95.5	2.5	88.3
< 100	2.6	90.9	6.1	2.5	78.5	2.5	78.5	--	2.2	97.7	2.9	91.2

^a Average of D1 and D2. In some subgroups the difference between D1 and D2 is substantial.

^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.10
 CRIME COMMISSION RATES--INMATE SURVEY II
 Total Theft

	Subgroup												Total
	California				Michigan				Texas				
	Prison		Jail		Prison		Jail		Prison		Weighted Prison		
Percent active ^a	51.6	50.4	50.0	39.1	43.3	46.7							
For actives:													
25th percent	5.1	2.8	3.5	2.4	2.7	3.3							
Median	15	9	10	6	5.8	8.6							
75th percent	101	103	99	32	51	84							
90th ^b percent	676	512	454	349	322	425							
Mean	167-324	161-224	168-204	98-153	107-131	142-209							
Distribution for actives: ^c													
$\lambda < 1$	4.7	13.6	4.7	9.9	11.8	9.1							
< 2	2.4	6.8	11.0	12.6	10.5	8.5							
< 3	5.9	12.9	6.8	5.4	6.9	6.4							
< 4	5.9	18.8	6.8	10.8	8.0	7.3							
< 5	5.9	24.7	7.9	4.5	8.4	6.3							
< 10	18.8	43.5	14.7	16.2	15.4	16.6							
< 50	25.9	69.4	17.3	18.9	15.8	18.3							
< 100	7.1	76.5	6.8	4.5	4.3	5.6							
< 200	6.5	82.9	8.4	3.6	7.5	6.6							
< 300	1.8	84.7	3.7	2.7	1.8	2.8							
< 500	2.9	87.6	3.1	2.7	3.5	3.3							

^a Average of D1 and D2.
^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.
^c Distribution differs slightly from quantiles, because some uncertain responses were used in estimating the distribution.

Table A.11
 CRIME COMMISSION RATES--INMATE SURVEY II
 Forgery & Credit Cards

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	28.4	25.1	14.1	15.7	21.5	20.9						
For actives:												
25th percent	1.9	2.0	2.1	0.9	1.8	1.9						
Median	4.8	4.5	4.5	3.3	4.3	4.5						
75th percent	24	30	44	17	15	22						
90th ^b percent	197	269	344	77	110	206						
Mean	62-94	90-132	84-106	66-152	29-49	62-98						
Distribution for actives:												
$\lambda < 1$	15.1	10.0	6.1	25.0	13.2	13.2						
< 2	9.7	14.4	16.3	12.5	12.4	12.7						
< 3	10.8	15.6	10.2	5.0	13.3	11.9						
< 4	5.4	6.7	14.3	10.0	8.1	8.1						
< 5	9.7	5.6	4.1	7.5	11.0	8.2						
< 10	17.2	17.8	4.1	10.0	13.0	13.7						
< 20	6.5	2.2	10.2	10.0	7.9	6.7						
< 30	3.2	3.3	10.2	2.5	4.3	4.4						
< 40	2.2	1.1	--	--	0.9	1.0						
< 50	2.2	1.1	--	2.5	1.8	1.6						
< 100	5.4	4.4	8.2	7.5	3.4	5.2						
			83.7	92.5	89.3	86.7						

^aAverage of D1 and D2.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.12
 CRIME COMMISSION RATES--INMATE SURVEY II
 Fraud

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Prison	Jail	Weighted Prison	Prison	Jail	Prison	Jail	Prison		
Percent active ^a	19.3	15.9	16.1	11.3	14.2	15.2						
For actives:												
25th percent	3	2.9	2.3	2.8	2.1	2.6						
Median	6.9	5.3	4.6	5.3	4.5	5.1						
75th percent	63	15	17	32	12	22						
90th ^b percent	268	327	263	367	180	258						
Mean	156-202	207-268	115-137	183-1064	34-120	127-283						
Distribution for actives:	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.
$\lambda < 1$	6.2	6.2	10.8	10.8	8.1	8.1	9.9	9.9	7.9	7.9	7.9	7.9
< 2	10.8	16.9	12.3	23.1	10.8	18.9	14.9	24.8	11.9	19.8	11.9	19.8
< 3	6.2	23.1	10.8	33.8	5.4	24.3	9.7	34.5	9.5	29.3	9.5	29.3
< 4	6.2	29.2	9.2	43.1	10.8	35.1	6.1	40.6	8.5	37.8	8.5	37.8
< 5	13.8	43.1	12.3	55.4	10.8	45.9	12.7	53.2	11.9	49.7	11.9	49.7
< 10	16.9	60.0	13.8	69.2	13.5	59.5	16.8	70.0	16.0	65.7	16.0	65.7
< 20	7.7	67.7	7.7	76.9	10.8	70.3	9.9	79.9	9.2	74.9	9.2	74.9
< 30	3.1	70.8	1.5	78.5	2.7	73.0	2.3	82.1	2.2	77.2	2.2	77.2
< 40	1.5	72.3	3.1	81.5	8.1	81.1	2.3	84.4	2.6	79.8	2.6	79.8
< 50	1.5	73.8	1.8	80.4	--	--	--	--	0.7	80.4	0.7	80.4
< 100	7.7	81.5	3.1	84.6	5.4	86.5	2.6	87.0	4.3	84.7	4.3	84.7

^a Average of D1 and D2.
^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2).
 All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.13
 CRIME COMMISSION RATES--INMATE SURVEY II
 Forgery + Fraud + Theft

	Subgroup										Total	
	California					Michigan						Texas
	Prison		Jail		Total	Prison		Jail		Total		Weighted Prison
	Int.	Cum.	Int.	Cum.		Int.	Cum.	Int.	Cum.			Int.
Percent active ^a	62.5		59.7		58.0		47.5		54.4		56.3	
For actives:	6		2.9		4.6		3.2		2.6		3.4	
25th percent	18		12		10.2		7.4		6.9		10.3	
Median	125		141		113		57		53		103	
75th percent	788		634		522		560		413		531	
90th percent	215-342		226-293		190-239		144-227		104-128		174-238	
Mean												
Distribution for actives: ^c	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.
$\lambda < 1$	4.3	4.3	9.4	9.4	5.4	5.4	9.9	9.9	11.8	11.8	8.3	8.3
< 2	1.9	6.3	10.3	19.7	8.5	13.9	12.1	22.0	10.9	22.6	8.7	17.1
< 3	5.8	12.1	5.4	25.1	6.3	20.2	5.7	27.7	7.4	30.0	6.2	23.3
< 4	3.4	15.5	4.5	29.6	4.5	24.7	9.2	36.9	7.4	37.4	5.7	29.0
< 5	5.8	21.3	4.0	33.6	8.1	32.7	5.7	42.6	6.6	44.0	6.1	35.1
< 10	17.9	39.1	14.8	48.4	17.5	50.2	14.2	56.7	14.5	58.5	15.8	50.9
< 50	25.6	64.7	18.8	67.3	18.4	68.6	18.4	75.2	17.7	76.3	19.7	70.6
< 100	6.8	71.5	5.8	73.1	4.5	73.1	8.5	83.7	3.0	79.2	5.3	75.8
< 200	9.7	81.2	3.6	76.7	8.5	81.6	2.1	85.8	7.9	87.1	6.7	82.6
< 300	3.4	84.5	5.4	82.1	3.1	84.8	3.5	89.4	2.4	89.5	3.5	86.1
< 500	2.9	87.4	4.0	86.1	4.9	89.7	1.4	90.8	3.7	93.2	3.6	89.6

^aAverage of D1 and D2.

^bThe range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

^cDistribution differs slightly from quantiles, because some uncertain responses were used in estimating the distribution.

Table A.14
 CRIME COMMISSION RATES--INMATE SURVEY II
 Drug Dealing

	Subgroup							Total
	California		Michigan		Texas		Weighted Prison	
	Prison	Jail	Prison	Jail	Prison	Jail		
Percent active ^a	54.5	45.0	41.4	35.6	34.6		41.4	
For actives:								
25th percent	10	9	5.4	6.9	5.1		7.2	
Median	166	103	122	92	36		100	
75th percent	1084	938	562	906	392		774	
90th percent	4013	3251	3612	3054	2508		3251	
Mean	927-1681	1081-1487	994-1287	714-1275	664-810		880-1299	
Distribution for actives:								
λ <	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	
<								
<								
<								
<								
< 5	12.6	12.6	22.8	22.8	20.0	20.0	17.8	
< 10	12.6	25.1	11.7	34.6	12.2	32.2	14.0	
< 50	16.4	41.5	9.9	44.4	13.9	46.1	13.6	
< 100	3.3	44.8	3.7	48.1	6.1	52.2	4.8	
< 500	18.6	63.4	24.1	72.2	19.1	71.3	20.3	
< 1000	10.9	74.3	8.0	80.2	7.0	78.3	7.9	
< 3000	13.1	87.4	8.6	88.9	11.3	89.6	11.2	
							89.5	

^a Average of D1 and D2.
^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2).
 All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

Table A.15
 CRIME COMMISSION RATES--INNATE SURVEY II
 All Study Crimes Except Drug Dealing

	Subgroup										Total	
	California					Michigan						Texas
	Prison	Jail	Jail	Prison	Jail	Prison	Jail	Jail	Prison	Weighted Prison		
Percent active ^a	84.8	74.9	74.9	78.0	66.5	74.4	75.6					
For actives:	6.7	2.7	2.7	4.1	2.2	2.4	3.4					
25th percent	42	17	17	17	9	9	15					
Median	276	193	193	206	55	49	135					
75th percent	989	735	735	645	438	338	605					
90th percent	258-455	221-288	221-288	222-302	147-242	107-141	187-278					
Mean ^b												
Distribution for actives: ^c	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.	Int.	Cum.
$\lambda < 1$	5.9	5.9	11.2	11.2	6.8	6.8	9.7	9.7	12.4	12.4	9.4	9.4
< 2	4.5	10.5	9.8	21.1	6.8	13.6	13.1	22.8	9.3	21.7	8.5	17.9
< 3	4.5	15.0	6.0	27.0	7.8	21.4	5.8	28.6	6.1	27.8	6.1	24.0
< 4	2.1	17.1	4.6	31.6	3.6	24.9	6.3	35.0	6.0	33.8	4.5	28.5
< 5	2.8	19.9	4.2	35.8	4.9	29.8	4.4	39.3	4.1	37.9	4.1	32.6
< 10	9.1	28.9	10.5	46.3	12.9	42.7	15.0	54.4	15.0	52.9	12.6	45.2
< 50	25.4	54.4	20.4	66.7	21.4	64.1	20.4	74.8	23.6	76.5	22.4	67.6
< 100	10.8	65.2	5.3	71.9	6.1	70.2	8.7	83.5	2.9	79.4	6.3	73.9
< 200	7.7	72.8	4.9	76.8	6.8	77.0	2.9	86.4	6.4	85.8	6.0	79.9
< 300	5.6	78.4	4.6	81.4	4.9	81.9	3.4	89.8	4.4	90.2	4.6	84.5
< 500	7.0	85.4	4.6	86.0	6.1	88.0	2.4	92.2	3.3	93.5	4.7	89.2

^a Average of D1 and D2.

^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

^c Distribution differs slightly from quantiles, because some uncertain responses were used in estimating the distribution.

Table A.16
CRIME COMMISSION RATES--INMATE SURVEY II

	Subgroup										Total
	California		Michigan		Texas		Total		Total		
	Prison	Jail	Prison	Jail	Prison	Jail	Prison	Jail	Prison	Jail	
Percent active ^a	89.8	81.6	83.8	73.8	79.9	81.6					
For actives:											
25th percent	13	6	6.6	4.2	3.5	5.2					
Median	135	72	104	24	15	42					
75th percent	929	685	536	517	236	524					
90th percent	3004	2305	2005	2200	1288	2126					
Mean	794-1390	794-1121	257-683	479-948	385-489	614-933					
Distribution for actives: ^c											
$\lambda <$											
$<$											
$<$											
$<$											
< 5	16.3	24.6	24.2	29.1	32.3	25.7	25.7	25.7	25.7	25.7	25.7
< 10	7.5	9.4	10.7	12.4	12.1	10.5	10.5	10.5	10.5	10.5	10.5
< 50	18.9	17.2	14.6	19.7	20.6	18.3	18.3	18.3	18.3	18.3	18.3
< 100	6.8	5.2	4.5	6.8	4.5	5.4	5.4	5.4	5.4	5.4	5.4
< 500	19.9	16.8	21.8	10.7	15.9	17.3	17.3	17.3	17.3	17.3	17.3
< 1000	8.5	9.4	9.6	6.4	5.0	7.6	7.6	7.6	7.6	7.6	7.6
< 3000	12.7	11.3	8.1	9.0	5.4	9.0	9.0	9.0	9.0	9.0	9.0

^a Average of D1 and D2.

^b The range shown for the mean reflects the low and high estimates for each respondent (L1 and L2). All other figures in the table are based on an average or low estimate for each respondent, depending on the information provided.

^c Distribution differs slightly from quantiles, because some uncertain responses were used in estimating the distribution.

Table A.17
 PEARSON CORRELATION MATRIX FOR CRIME ACTIVITY VARIABLES^a

Crime Type	Crime Type									
	Robbery					Assault				
	Business	Person	Burglary	From Robbery	Total	Auto Theft	Other Theft	Forgery	Fraud	Drug Dealing
All robbery	.52	.55	.53	.28	.24	.27	.26	.11	.14	.20
Business robbery	•	.37	.21	.28	.26	.20	.17	.12	.19	.21
Person robbery		•	.29	.35	.31	.23	.29	.14	.20	.21
Burglary			•	.17	.17	.36	.37	.15	.12	.21
Assault from robbery				•	.89	.17	.10	.09	.11	.16
Assault (total)					•	.18	.14	.07	.16	.20
Auto theft						•	.22	.15	.09	.20
Other theft							•	.20	.26	.21
Forgery								•	.29	.22
Fraud									•	.24
Drug dealing										•

NOTE: With pairwise deletion of missing values, the number of cases in this table ranges from 2090 to 2181 (out of 2190). All correlations are significantly different from zero with $p < .001$.

^aThe variables are maximum activity variables of the form D2SUFFIX. They have the value zero or one. See "Step 2. Activity variables."

Table A.18

FACTOR MATRIX: ACTIVITY VARIABLES FOR THE MEASUREMENT PERIOD

Variable: 0 or 1 Activity in	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Business robbery	0.29	0.12	0.02	0.07	0.47	0.09
Person robbery	0.37	0.16	0.28	0.07	0.42	0.05
Burglary	0.07	0.54	0.28	0.00	0.05	-0.01
Assault from robbery	0.55	0.12	-0.02	0.07	0.16	0.05
Other assault	0.51	0.05	0.08	0.02	0.14	0.14
Auto theft	0.11	0.53	0.03	0.05	0.11	0.11
Other theft	0.03	0.19	0.54	0.17	0.05	0.03
Forgery, cards, checks	0.02	0.06	0.06	0.48	0.01	0.07
Fraud	0.09	-0.08	0.24	0.45	0.15	0.18
Drug dealing	0.13	0.09	0.03	0.19	0.07	0.33

NOTE: Maximum activity variables (see Step 2) were factor analyzed by SPSS with principle factoring with iteration (PA2), varimax rotation, and listwise deletion of missing values. The six factors listed explain 97 percent of the variance.

Table A.19

ANNUALIZED CRIME COMMISSION RATES

Varieties of Criminal Behavior	Percent Active	Statistics for Those Who Commit the Crime					Overall Mean
		25th Percentile	Median	75th Percentile	90th Percentile	Mean	
<i>Burglary</i>							
Violent predators	84	3	9	89	516	172	144
Robber-assaulters	69	2	5	25	315	69	48
Robber-dealers	76	4	14	119	377	122	93
Low-level robbers	64	2	4	17	206	48	31
Mere assaulters	0						
Burglar-dealers	100	2	4	9	113	42	42
Low-level burglars	100	1	2	6	105	36	36
<i>Business Robbery</i>							
Violent predators	58	3	7	23	96	36	21
Robber-assaulters	46	2	4	12	46	36	17
Robber-dealers	41	1	4	10	60	26	11
Low-level robbers	31	1	2	5	15	7	2
<i>Person Robbery</i>							
Violent predators	65	3	6	22	82	61	40
Robber-assaulters	59	2	4	9	38	40	24
Robber-dealers	43	2	4	9	32	22	9
Low-level robbers	41	1	2	5	10	11	5
<i>Business Robbery + Person Robbery</i>							
Violent predators	90	4	9	30	154	70	63
Robber-assaulters	90	2	5	16	141	50	45
Robber-dealers	77	2	4	14	87	54	42
Low-level robbers	74	1	2	5	13	10	7
<i>Total Robbery^a</i>							
Violent predators		3	8	29	135	63	
Robber-assaulters		1.7	4	13	65	45	
Robber-dealers		1.4	3	9	41	40	
Low-level robbers		0.5	1.7	4	10	7	

^aIncludes robbery as an outgrowth of burglary.

(continues)

Table A.19--continued

Varieties of Criminal Behavior	Percent Active	Statistics for Those Who Commit the Crime					Overall Mean
		25th Percentile	Median	75th Percentile	90th Percentile	Mean	
<i>Theft Other Than Auto</i>							
Violent predators	71	5	15	105	486	206	146
Robber-assaulters	49	4	9	111	493	134	66
Robber-dealers	57	4	13	95	460	141	80
Low-level robbers	38	2	4	24	116	47	18
Mere assaulters	0						
Burglar-dealers	58	4	7	64	500	137	79
Low-level burglars	41	2	3	12	76	44	18
Property & drug offenders	52	2	5	281	775	402	209
Low-level property offenders	56	2	5	96	624	200	112
Drug dealers	0						
<i>Auto Theft</i>							
Violent predators	50	2	4	17	119	73	37
Robber-assaulters	34	2	5	13	1137	213	72
Robber-dealers	39	2	5	7	69	9	4
Low-level robbers	22	1	3	11	244	81	18
Mere assaulters	0						
Burglar-dealers	34	1	3	9	60	25	9
Low-level burglars	21	1	3	6	441	470	99
Property & drug offenders	22	1	2	6	37	9	2
Low-level property offenders	19	1	2	5	136	40	8
Drug dealers	0						
<i>Forgery and Credit Card Crimes</i>							
Violent predators	42	2	5	18	200	72	30
Robber-assaulters	16	2	6	15	27	21	3
Robber-dealers	32	1	4	31	255	75	24
Low-level robbers	13	2	5	36	78	23	3
Mere assaulters	0						
Burglar-dealers	32	2	5	26	274	78	25
Low-level burglars	18	1	1	5	62	15	3
Property & drug offenders	47	1	4	53	283	79	37
Low-level property offenders	43	2	4	43	486	163	68
Drug dealers	0						

(continues)

Table A.19--continued

Varieties of Criminal Behavior	Percent Active	Statistics for Those Who Commit the Crime					Overall Mean
		25th Percentile	Median	75th Percentile	90th Percentile	Mean	
<i>Fraud</i>							
Violent Predators	37	3	6	23	278	94	35
Robber-assaulters	15	2	14	151	293	95	14
Robber-dealers	22	2	4	12	106	104	23
Low-level robbers	10	2	3	7	811	227	23
Mere assaulters	0						
Burglar-dealers	22	3	4	7	64	22	5
Low-level burglars	5	3	5	25	36	12	1
Property & drug offenders	34	3	7	59	264	306	104
Low-level property offenders	20	3	8	161	1160	844	169
Drug dealers	0						
<i>Forgery + Fraud + Theft</i>							
Violent predators	91	7	22	149	635	251	229
Robber-assaulters	70	4	8	113	625	183	127
Robber-dealers	83	5	12	64	422	158	132
Low-level robbers	57	2	5	46	187	95	54
Mere assaulters	0						
Burglar-dealers	78	4	12	115	608	179	140
Low-level burglars	61	1	3	9	97	41	25
Property & drug offenders	100	2	7	146	677	360	360
Low-level property offenders	100	1	5	47	575	369	369
Drug dealers	0						
<i>Drug Dealing</i>							
Violent predators	100	11	149	1238	4088	1252	1252
Robber-assaulters	0						
Robber-dealers	100	8	140	736	2931	836	836
Low-level robbers	0						
Mere assaulters	0						
Burglar-dealers	81	5	27	542	2890	880	713
Low-level burglars	0						
Property & drug offenders	74	7	126	655	3302	1070	791
Low-level property offenders	0						
Drug dealers	100	4	24	500	3035	1180	1180

(continues)

Table A.19--continued

Varieties of Criminal Behavior	Percent Active	Statistics for Those Who Commit the Crime					Overall Mean
		25th Percentile	Median	75th Percentile	90th Percentile	Mean	
<i>All Study Crimes Except Drug Dealing</i>							
Violent predators	100	17	69	340	1013	409	
Robber-assaulters	100	7	16	88	514	187	
Robber-dealers	100	9	35	227	711	243	
Low-level robbers	100	2	6	46	256	88	
Mere assaulters	100	.6	.8	1.3	3.5	1.9	
Burglar-dealers	100	5	13	108	492	176	
Low-level burglars	100	1	4	15	146	127	
Property & drug offenders	100	2	8	108	638	337	
Low-level property offenders	100	2	5	47	575	369	
Drug dealers	0						

Appendix B

INTERNAL QUALITY AND EXTERNAL RELIABILITY OF RESPONSES

ITEMIZED SUMMARY OF MAJOR FINDINGS

For reference, the main findings demonstrated in this appendix are listed here.

1. Prisoner respondents' answers on 14 topics were compared with their official records. Most respondents had 3 or fewer disparities; under 7 percent had 6 or more; nobody had more than 9.

2. Texas prisoners had better external reliability than the Michigan prisoners, who in turn were better than the California prisoners. This reflects the fact that the California prisoners had, on the whole, more extensive criminal careers to report than did the Michigan or especially the Texas prisoners.

3. For respondents in both prison and jail, their answers on 27 topics were checked for internal quality (15 consistency checks, 11 tests of confusion, 14 overlapping indicators of omitted answers, and one additional indicator of omissions). Over two-thirds of respondents had 3 or fewer errors in these checks of internal quality. (Alternative version: Nearly three-quarters of respondents were right on 85 percent or more of the quality checks that applied to them.)

4. The survey booklet included pairs of questions, separated by as much as 25 pages, that asked for essentially the same information about crimes the respondent committed. Only 7 percent of respondents gave inconsistent answers about whether they committed burglary, and under 5 percent gave inconsistent answers concerning selling drugs, forgery, and stealing cars. Inconsistencies concerning whether the respondent committed assault were high, reflecting a substantial difference in the wording of the two questions about assault. Respondents who answered inconsistently for one of the crimes had a high probability of answering inconsistently for the other crimes. But inconsistency in answers to questions about crimes committed were not statistically related to inconsistent, confused, or omitted answers to other types of questions.

5. The internal quality of questionnaires from jail respondents was slightly worse than that from prisoners. On the average, prisoners gave complete and consistent answers to 89.5 percent of the topics we checked, compared with 85.8 percent for jail respondents. The jail respondents left more questions unanswered than did the prisoners, perhaps because they felt the questions did not apply to their situation, perhaps because the circumstances of survey administration were not as good in the jails.

6. The internal quality checks showed that over 95 percent of respondents were able to understand and follow the fairly complex skip patterns in the survey booklet and to fill out the calendar that showed the time period being studied. For prisoners, the information in their official records showed that 85 percent of them filled out their calendar correctly to the month. Fewer than 4 percent erred by more than a year in filling out the calendar.

7. A large percentage of respondents (28 percent in prison and 38 percent in jail) were unable to figure out when was the two-year period preceding the two-year study period, and when was the two-year period before that. This makes the survey results concerning changes in crime commission behavior over time presumptively somewhat less reliable than other results.

8. The only other topic that appeared to confuse a sizeable number of respondents (over 20 percent) had to do with their income from crime. One of the questions related to this topic inadvertently contained a typographic error.

9. For prisoners, there was a large disparity between their self-reports of involvement with juvenile crime or sentence to a juvenile facility, and their official records available to prison authorities. In nearly all cases of disparity, the respondent admitted juvenile activity or incarceration, while the record showed no involvement. This finding points to the inadequacy of information about criminal activity in the juvenile period that is currently available to adult criminal justice officials.

10. Based on the tests of internal quality of the questionnaire answers, we found that over 83 percent of respondents tracked the

questionnaire with a high degree of accuracy and completeness, and were very consistent in their answers.

Not as large a percentage of prisoner respondents had good correspondence between their responses and their official records, but we have as much reason to doubt the validity and completeness of records as to doubt the veracity of the respondents in these cases. Taking a very conservative approach, we carried out the key analyses two ways: one including all respondents, and the other excluding 42 percent of the respondents for whom we had any reason to be suspicious of their truthfulness. (This figure included prisoners who, through no fault of their own, had incomplete or missing official records.)

11. The indicators of internal quality and external reliability of respondents' answers were compared with a variety of their self-reported characteristics: conviction crime, self-image, activity in "fraud" and "illegal cons," and sociodemographic characteristics. Most individual characteristics were unrelated to the quality and reliability of their responses, with these exceptions:

- o Prisoners who said they were convicted of auto theft, fraud, or sex crimes other than rape were significantly more likely to disagree with their official record of conviction.
- o Prisoners convicted of burglary had unusually *good* reliability.
- o Respondents convicted of drug sales left significantly more questions blank than other respondents.
- o Respondents with self-image *family man, working man, or straight* had good reliability for arrests reported.
- o Respondents with self-image *thief, player, or alcoholic/drank* were significantly worse than others on internal consistency of responses.
- o Older respondents had a better match with adult official records and fewer inconsistencies than did young respondents, but tended to leave more questions blank.
- o More highly educated respondents had no better or worse reliability than less educated respondents, but they had

substantially fewer blank questions and significantly better performance on skip patterns.

- o Hispanic and Chicano inmates had no better or worse external reliability or internal quality than did other respondents. (Some of them completed survey booklets in Spanish.) Also, black respondents were no better or worse than other respondents on external reliability. However, black respondents had substantially worse internal quality, in particular on confusion and inconsistency.

12. Estimates of overall self-reported crime commission rates were not affected in any significant or consistent way by removal of respondents with suspect answers. They can generally be considered stable within a factor of 1.5. "Truthful" respondents seemed to be less likely to report very high crime commission rates, and also less likely to deny committing crimes.

13. Self-reported crime commission rates were not, for the most part, found to be significantly correlated with measures of internal quality or external reliability. The few crime types whose rates showed significant correlations did not show the same patterns in all three study states. Although not statistically significant, there was a general pattern of respondents with poor internal quality having somewhat lower crime rates than other respondents; this reflects the fact that many of them left blanks in questions about their crime rates and so were assumed to have the lowest crime commission rate consistent with their answers.

BACKGROUND

Marquis and Ebener (1981) examined the reliability of three portions of data from this survey:

- o The self-report of current conviction offenses (question 6 on page 37 of the survey instrument).
- o The self-report of the number of times the respondent was arrested for each of nine categories of crimes during the

measurement period (question 4 on page 37). (Marquis calls these "arrest incidents.")

- o The self-report of the number of times the respondent was arrested during the measurement period as a consequence of committing eight specified crimes (derived from nine separate questions, such as question 5 on page 17). (Marquis calls these "arrests for crimes done.")

Here we use some of the same reliability indicators that Marquis studied, together with a variety of other indicators of external reliability and internal quality of the self-report data, in order to shed light on the believability of the annualized crime commission rates reported in the main text.

Our approach differs from that of Marquis. Rather than estimate the magnitude of the error of individual data items, we develop overall summary measures of external reliability and internal data quality based on substantial numbers of disparate data items. Underlying our approach is the notion that a respondent may answer any particular question erroneously for a variety of benign reasons, but a respondent who reveals a pattern of a large number of erroneous or inconsistent answers is most likely lying, or confused, or inattentive.

For example, a respondent who is serving a prison term for theft and states he is convicted of robbery cannot be judged generally truthful or untruthful from this fact alone. But if he also states his age incorrectly and falsely claims he has never been previously convicted of a felony, his truthfulness is brought into question. More generally, the data provided by any respondent whose answers reveals a pattern of a large number of inconsistencies or errors are more suspect than those of other respondents.

In constructing the summary measures of external reliability, we did not rely entirely on comparisons based on the magnitudes of difference scores between self-report and official record. For example, suppose one respondent reported that he had been arrested once for burglary during the measurement period, and his official record also showed one burglary arrest. Suppose further that a second respondent

reported 4 robbery arrests, 3 burglary arrests, and 5 assault arrests, and his record showed 3 robbery arrests, 3 burglary arrests, and 4 assault arrests. While the first respondent's difference score is 0 and the second respondent's is 2 for this comparison, clearly the second respondent responded in a highly accurate way. Rather than consider the first respondent to have no error and the second respondent to have an error of 2, we have developed methods based partly on subjective judgments of "allowable ranges of error." Using our methods, both respondents' data fall within the allowable range for the comparison described.

In all, 14 comparisons between survey items and official record data entered into our measure of "bad reliability," and 27 data checks entered into our measure of "bad internal quality." The external reliability measure could be calculated only for prisoner respondents whose official record data were obtained, while the internal quality measure was calculated for all respondents.

EXTERNAL RELIABILITY INDICATORS

Table B.1 shows the specific comparisons that entered into the reliability measure. These were essentially all the comparisons that could be made from the data that had been collected, uniformly for all three states. Although 14 comparisons are listed, for some respondents fewer than 14 were applicable (for example, their official record did not contain the requisite information, or the comparison was not pertinent to their situation). The overall "bad reliability" measure is the fraction of applicable comparisons that the respondent failed.

The first two reliability indicators compare the self-report of arrest incidents for nine crimes during the measurement period (question 4 on page 7 of the survey booklet) with the official record of arrests for those nine crimes. "Arrest incidents" were used rather than "arrests for crimes done" because the wording of the survey question for arrest incidents was intended to induce a response related to official records, and Marquis showed that the arrest incidents actually matched the official record more closely than did the

Table B.1

EXTERNAL RELIABILITY INDICATORS

Indicator	Percent of Respondents	
	With "Bad" Values	With Inapplicable Comparison
1. Arrest mismatch, 2 or more	28	21
2. Arrest mismatch, half or more of "interesting" crimes	7	21
3. Current commitment crime mismatch	26	13
4. Current commitment crimes, half or more of "interesting" crimes mismatch	11	13
5. Mismatch on age at first arrest, two years or more	43	16
6. Juvenile criminal record mismatch	24 ^a	13
7. Commitment to juvenile facility mismatch	37 ^a	17
8. Mismatch on revocation of probation or parole	19	15
9. Mismatch on number of prison terms served	16	13
10. Mismatch on categorized number of felony convictions	24	14
11. Mismatch on last month of measurement period	15	12
12. Mismatch on age at time of survey, more than one year	9	2
13. Mismatch on race	3	3
14. Mismatch on categorized education, with more than 1 category	13	12

^aNearly all of these are survey = Yes, official record = No.

arrests for crimes done. The first indicator has the more restrictive allowable range. It is coded "bad" if the disparity between self-report and official record is 2 or more arrests for *any one* of the nine crime types.* This comparison is considered to be inapplicable if both survey and official record showed no arrests for any of the nine crimes studied,† in addition to being inapplicable if the records were missing. Approximately 28 percent were coded "bad" and 21 percent "inapplicable."

The allowable range of error is larger for the second indicator. This indicator is coded "bad" if a *relatively* large number of crime types have disparities between self-report and official record. For each respondent, each crime type was examined to determine whether either the self-report or the official record report of arrests is nonzero. Any crime meeting this condition (one or both counts nonzero) is termed "interesting."‡ The indicator is coded "bad" if half or more of "interesting" crimes show a disparity of two or more arrests.**

Examples:

	<u>Self-report</u>	<u>Official</u>	<u>Difference</u>
Respondent 1			
Assault	4	6	-2
Robbery	1	5	-4
Theft	0	1	-1
All others	0	0	irrelevant
Respondent 2			
Assault	1	1	0
Burglary	4	3	1
Theft	0	2	-2
Fraud	2	1	1
All others	0	0	irrelevant

* Of course, if two or more crime types showed a disparity of two or more arrests, the indicator is also coded "bad."

† Such respondents were arrested and convicted for crimes that were not considered in the survey booklet questions. Only 5 percent of prisoner respondents had zero arrests for the selected nine crimes by both self-report and official record.

‡ However, if one or more of the data items were missing, the crime type is not termed "interesting."

** In addition, the indicator is coded "bad" if half or more of interesting crime types have self-reports of zero arrests and official reports of one or more arrests.

Respondent 1 has three interesting crimes and is coded "bad" on indicator 2 because two of these crimes are mismatches by 2 or more arrests. Respondent 2 has four interesting crimes and is not coded "bad" because only one of the four crimes has a mismatch of 2.

Only 7 percent of respondents are coded "bad" on indicator 2. This indicator is also considered inapplicable if both self-report and official record report zero arrests.

The third indicator is coded "bad" if there is a disparity for any one (or more) of 13 current commitment offenses (question 6 on page 37 of the survey instrument).^{*} The fourth indicator, analogous to the second, is based on defining a crime type as "interesting" if either the official record or the respondent shows it is a current conviction offense. The indicator is coded "bad" if half or more of "interesting" crimes show a disagreement between respondent and official record.

Examples:

	<u>Self-report</u>	<u>Official Record</u>
Respondent 1		
Assault	Yes	Yes
Kidnapping	No	Yes
Auto theft	Yes	Yes
All others	No	No
Respondent 2		
Assault	No	Yes
Kidnapping	No	Yes
Auto theft	Yes	Yes
Robbery	Yes	No
All others	No	No

Respondent 1 is not coded bad on this indicator (one out of three "interesting" crimes is a mismatch, which is within the allowable range of error), while Respondent 2 is coded bad (three out of four crimes are mismatches).

^{*}The survey questions show 15 crime types. Four of these were collapsed into two categories for purposes of comparison with official records.

The remaining indicators in Table B.1 are nearly self-explanatory. Indicator 10 is based on a survey question that categorizes felony convictions as follows:

- o None
- o Once
- o 2-3 times
- o 4-6 times
- o 7-10 times
- o 11-15 times
- o 16 or more times

The official record data were collapsed into those same categories for the purpose of comparison. Indicator 14 is based on a survey question that categorizes "the highest grade you finished in school" as follows:

- o No schooling
- o 6th grade or less
- o 7th-9th grade
- o 10th-11th grade
- o High school graduate
- o Some college
- o College graduate
- o Postgraduate study

The indicator is coded "bad" if the self-report differs from the official record of educational level by two or more categories.

Table B.2 shows that the majority of respondents were counted "bad" on 1, 2, or 3 of the 14 external reliability indicators, with an average of 2.75 "bad." Respondents whose self-reports differed from their official records for six or more indicators were a distinct minority (6.7 percent), and no respondent had more than 9 disparities between self-report and official record.

The Texas prisoners had significantly fewer "bad" reliability indicators than did the Michigan prisoners, who in turn had significantly

Table B.2

COUNT OF BAD EXTERNAL RELIABILITY INDICATORS

Average count	2.75	(max = 14)
California	3.1	
Michigan	2.8	
Texas	2.5	

<u>Value</u>	<u>Number of Prisoners</u>	<u>Percent</u>
0	102	7.4
1	247	17.9
2	322 ← mode	23.3
3	293	21.2
4	207	15.0
5	116	8.4
6	51	3.7
7	28	2.0
8	10	0.7
9	4	0.3
	<u>1380</u>	

fewer than the California prisoners. Primarily, these differences reflect the greater complexity of the information being provided by the average California prisoner. (For example, it is harder to report 9 arrests accurately than to report 1 arrest accurately.)

For purposes of further analysis, the respondent's count of bad reliability indicators was divided by his number of applicable indicators, to obtain a summary measure: his percent of bad reliability indicators, shown in Table B.3. This summary measure differs among respondents whose count of bad reliability indicators is the same, depending on their circumstances. For example, a respondent who has three "bad" reliability indicators and was not arrested for any of the crimes studied has a higher summary measure than another respondent with three disparities and who reported arrests. Respondents whose official records were missing information about 6 or more of the individual external reliability indicators are excluded from the summary measure (i.e., their value of the summary measure is "missing").

Table B.3

PERCENT OF BAD EXTERNAL RELIABILITY INDICATORS

Average	22.6
California	24.0
Michigan	23.9
Texas	20.8

<u>Value</u>	<u>Percent of Prisoners</u>	<u>Cumulative Percent</u>
0	3.9	3.9
1-10	14.1	18.0
11-20	23.4	41.4
21-30	36.0	77.4
31-40	13.1	90.5
41-50	7.2	97.7
51-60	1.3	99.0
61-70	0.8	99.8
71-80	0.1	99.9
81-90	0.1	100.0

INTERNAL QUALITY MEASURES

Three types of internal quality indicators were constructed: indicators of consistency, indicators of confusion, and indicators of omission. These were chosen as *examples* from a large number of potential comparisons that were built into the survey instrument. All the indicators are intended to be self-evident logic checks, which means that in the collective judgment of those who designed and coded the survey data, a violation of the logic check is quite unlikely for legitimate reasons. However, a careful reading of the wording of the survey questions will, in most instances, reveal obscure possibilities for legitimate violations. Since a large number of different indicators were calculated, these infrequent instances of truthful responses being counted as inconsistencies should not affect the outcome of the analysis.

Table B.4 shows the indicators of consistency. These were calculated before the data were cleaned. (For example, it is possible that a respondent stated he did not commit any burglaries *and* that he was arrested for one of the burglaries he committed.) The first indicator checks that the offense for which the respondent was serving time is included among the offenses for which he reports he was arrested during the measurement period. To assure that his logic check is meaningful, the following conditions are imposed:

- o Only the respondent's version of the crime he "really did" during the commitment offense is considered (i.e., the official conviction offense category is not used).
- o Only conviction offenses that are clearly included in questions about crimes committed are considered.
- o Only respondents who answered "yes" to the following question have this indicator calculated:
"When you described your crimes during the STREET MONTHS ON THE CALENDAR, did you include any of the crimes you are now doing time on?"

Because these conditions are fairly stringent, 44 percent of respondents had this indicator deemed "irrelevant" for them.

The second indicator is exactly analogous, but instead of comparing conviction crimes with arrests, it compares conviction crimes with crimes done. The third indicator is also similar, but applies to a category of crimes.

Indicators 4, 5, 6, 7, and 8 are based on a duplication of questions about crimes committed that was purposely included in the survey instrument to permit consistency checks (and also to permit comparisons with data collected in a previous Rand survey). For example, the following question appears on page 16:

During the STREET MONTHS ON THE CALENDAR did you do any burglaries? . . . In all, how many burglaries did you do?

On page 41, the following question appears:

During the STREET MONTHS ON THE CALENDAR, *altogether* how many times did you do . . . burglary--broke into a home or business in order to take something?

Table B.4

INDICATORS OF CONSISTENCY

Indicator	Percent Failing			Percent Irrelevant
	Prison	Jail	Total	
1. Current conviction offense is mentioned as a crime for which arrested	9	10	9	44
2. Conviction offense is mentioned as a crime committed	5	6	5	44
3. If conviction offense is a property crime, respondent answers Yes to "Did you do a burglary, robbery, theft, car theft, forgery, fraud, or swindle?"	4	7	5	44
4. Assault in one format (p. 41) is also mentioned in other format (pp. 22-24) ^a	13	13	13	
5. Burglary in one format (p. 41) is also mentioned in other format (p. 16)	7	7	7	
6. If "sold hard drugs" (p. 41), then also did deal in drugs (p. 34)	2	4	3	
7. Forgery in one format (p. 41) is also mentioned in other format (p. 30)	2	3	3	
8. If "stole a car," then also "stole a car, truck, or motorcycle"	4	5	5	
9. Property crime in one format is also mentioned in aggregate question (see indicator 3, above)	15	18	16	29
10. Current age matches with age at first crime and length of term	1	1	1	
11. Age at first crime matches with age (< 18) for juvenile crimes (pp. 3,4)	15	17	16	
12. If in juvenile facility, then did juvenile crime ^a	2	5	3	
13. Income from crime (p. 37) matches percent (p. 36)	23	19	21	
14. If self image (p. 15) is property criminal, then he had income from crime	1	1	1	
15. If self image (p. 15) is related to a specific crime ("robber"), then he did that crime	10	11	10	

^aNot logically necessary.

Indicator 5 is counted as "failure" if one of these questions is answered "Yes" or nonzero, and the other is "No" or zero.

Indicator 9 is similar, except that it compares several individual questions about property crimes with one aggregate question about property crimes.

Indicator 10 checks for a very gross inconsistency: that the sum of the self-reported age at first arrest and the number of years self-reported as already served on the current term cannot exceed the respondent's current age when he completed the survey. Under 2 percent of respondents failed this logic check.

Indicator 11 is self-explanatory. Item 12 requires that a respondent who reported he was in a state, county, or local juvenile facility also reported he had committed crimes as a juvenile. This is not strictly necessary, since a child could be placed in a facility to protect him from abuse of parents or other reasons, but only 3 percent of respondents failed the test.

Indicator 13 is based on two questions about dollar income (one question about legitimate income and the second about income from crime) and a third question that asked what percent of his income came from crime. The high fraction of respondents erring on this question may reflect an inability to perform percentage calculations, or it may reflect a typographic error in the survey booklet: "How much of your income came for [sic] crime?"

The last two consistency indicators are based on self-image questions, which asked, "Which of the following best describe the way you thought of yourself?"

Most of the indicators of consistency have reassuringly low error rates, especially considering the fact that the comparisons made in the indicators often derive from questions located many pages apart in the survey instrument. A respondent giving frivolous answers would be quite unlikely to pass most of these quality checks. Table B.4 is also reassuring in the similarity of inconsistency rates between prison and jail inmates. These suggest that the errors are not heavily dependent on the respondent's circumstances of administration or imprisonment.

Table B.5 shows eleven indicators of confused responses. These were selected from a large number of skip patterns, multiple response

Table B.5

INDICATORS OF CONFUSED RESPONSES

Indicator	Percent Confused			Percent Irrelevant
	Prison	Jail	Total	
1. Said did crimes before age 18, but age first done is 18 or older (p. 3 or 4)	2	4	4	
2. Calendar years mixed up	1	7	3	
3. Answers arrest question for crime he says he didn't do	3	3	3	36
4. Continuation pattern not followed if used drugs (p. 14)	5	10	7	44
5. Skip pattern not followed for jobs (p. 13)	4	6	5	
6. Skip pattern not followed for juvenile crimes (p. 3 or 4)	4	4	4	
7. Bad skip pattern in burglary questions (p. 16)	2	2	2	
8. (Different) bad skip pattern in auto theft or drug dealing questions (p. 28 and p. 34)	3	4	3	
9. Multiple responses where nonsensical (11 different questions examined)	5	7	6	
10. Years on p. 42 don't line up with years on the calendar (p. 11)	28	38	32	
11. Checks crimes done and also checks "Did none of these crimes" (p. 42 or 43)	1	1	1	

patterns and other opportunities for illogical responses located in various parts of the survey booklet. As in the case of the indicators of consistency, the indicators of confused responses have mostly very low error rates. The major exception is indicator 10, which shows that many respondents were unable to understand the questions that asked them to think about a two-year period that preceded the measurement period.

In addition to the indicators listed in Tables B.4 and B.5, fifteen indicators of omission were calculated. Thirteen of these indicators were paired with measures of consistency (indicators 1 to 10, 13, 22, and 25 in Table B.4) and were coded "bad" if the respondent failed to provide the data needed to make the consistency check in question. (For example, for consistency indicator 5 the corresponding indicator of omission was coded "bad" if the respondent failed to answer either the burglary question on p. 16 of the instrument or the burglary question on p. 41, or both.) One indicator of omission is coded "bad" if the respondent failed to answer the age questions on pp. 3 and 4, and one indicator is coded "bad" if the respondent failed to answer one or more of the questions on p. 44 (age, race, marital status, or education).

All told, there are 27 indicators of internal quality. As shown in Table B.6, over two-thirds of the respondents erred on three or fewer of these indicators, and the average number of errors was 2.9. Respondents in jails showed significantly lower internal quality than the respondents in prison. This difference arises primarily from a larger number of omissions for jail respondents than for prisoner respondents.

As in the case of external validity indicators, we calculated an overall summary measure of internal quality: the percent of applicable indicators that were coded "bad." The distribution of that summary measure is shown in Table B.7.

RELATIONSHIPS OF INDICATORS TO RESPONDENT CHARACTERISTICS

The external reliability indicators are, for the most part, not correlated among each other. The obvious combinations are exceptions: reliability indicators 1 and 2, having to do with convictions and

Table B.6

COUNT OF BAD INTERNAL QUALITY INDICATORS

Average count	2.9	(maximum = 27)
California prison	2.5	
California jail	3.4	
Michigan prison	2.8	
Michigan jail	3.6	
Texas prison	2.5	

<u>Value</u>	<u>Number of Subjects</u>	<u>Percent</u>
0	326	14.9
1	456 ← mode	20.8
2	446	20.4
3	303	13.8
4	213	9.7
5	125	5.7
6	89	4.1
7	60	2.7
8	45	2.1
9	46	2.1
10	26	1.2
11	16	0.7
12	21	1.0
13	11	0.5
14	3	0.1
15	3	0.1
16	<u>1</u>	0.0
	2190	

Table B.7

PERCENT OF BAD INTERNAL QUALITY INDICATORS

Average	11.9
California prisoners	10.0
Michigan prisoners	11.5
Texas prisoners	10.2
California jails	13.6
Michigan jails	15.0

<u>Value</u>	<u>Percent of Prisoners</u>	<u>Cumulative Percent</u>
0	14.9	14.9
1-5	20.8	35.7
6-10	20.4	56.1
11-15	18.0	74.1
16-20	9.0	83.1
21-25	5.7	88.8
26-30	3.0	91.8
31-35	2.5	94.3
36-40	2.0	96.3
41-45	1.5	97.8
46-50	1.0	98.8
51-55	0.6	99.4
56-60	0.5	99.9
61-65	0.1	100.0

arrests, are strongly correlated with each other;* indicators 3 and 4 are strongly correlated; and the indicators 5, 6, 7, and 8, having to do with juvenile activity, are intercorrelated. In addition, indicator 9 (mismatch on prison terms) is correlated with indicator 12 (mismatch on age).

The internal quality indicators are related amongst themselves in groups that were determined by factor analysis and are reflected in the ordering of the indicators in Tables B.4 and B.5. The indicators

*"Strong correlation" means significance at .001 level. "Significant correlation" means significance at .01 level. Unless stated otherwise, all correlations discussed in this section are significant.

of consistency (Table B.4) are completely independent of the indicators of confusion (Table B.5) with the exception that indicator of confusion 3 (arrested for crime not done) is correlated with consistency indicators having to do with crimes done.

Consistency indicators 1, 2, and 3, which compare conviction crimes with other responses, are strongly intercorrelated; so are consistency indicators 4, 5, 6, 7, 8, and 9, which related responses on p. 41 to responses on other pages, and they are essentially unrelated to all the other indicators except (a) omission of data on age, race, sex, etc., and (b) consistency indicator 15, which compares self-image with crimes committed. The strongest member of this group (i.e., the best predictor of the other indicators numbered 4 to 9) is 9 ("stole a car"). Indicator 13 (income from crime) is not correlated with any of the other internal quality indicators.

The summary measure of bad external reliability is very strongly correlated with the summary measure of internal quality for prisoners (significance better than .001 in each state separately). The external reliability measure is most strongly related to indicators of consistency and omission, less strongly related to indicators of internal confusion.

A variety of self-reported respondent characteristics were compared with the indicators of external reliability and internal quality. These characteristics included all self-reported conviction crimes, self-images, activity in "fraud" and "illegal cons," and sociodemographic characteristics.

Self-Reported Conviction Crimes

No significant correlations were found between the following conviction crimes and the external or internal indicators:

Assault	Possession of stolen goods
Drug possession	Rape
Forgery/credit cards	Theft
Murder	Weapons charges

The respondents whose self-reported conviction crime was *auto theft* had a bad reliability mismatch on their current conviction crime (reliability indicators 3 and 4) and also had significantly bad overall consistency measures. Respondents whose self-reported conviction crime was *fraud* or a *sex crime other than rape* had bad reliability on their current conviction crime, while respondents who reported *burglary* as their conviction crime had significantly good reliability. Those reporting a current conviction for *drug sales* had significantly more omissions than other respondents.

Self-Image

None of the following self-images were significantly related to external reliability or internal quality:

Car thief	Drug dealer, user
Booster	Violent person
Misfit	Con man
Forger	Bad tempered
Fighter	Fence
Robber	Problem drinker

(This raises the question whether a con man would report that he is a con man!)

Those with self-image *family man*, *working man*, or *straight* had good reliability for arrests reported. Those with self-image *thief*, *player*, or *alcoholic/drunken* were significantly worse than other respondents on internal consistency.

Age

Older respondents had a generally better overall match between their responses and official data than did younger respondents, especially in regard to arrests they reported, but they were much less accurate in reporting their current age and their total number of prison terms than were young respondents. Older respondents' reports of being in a juvenile facility matched official records somewhat better than did young respondents' reports, perhaps because the official records appear to understate the self-reported amount of juvenile

incarceration, and the older respondents were less likely to report juvenile incarceration.

Older respondents had more omissions in their survey data than did young respondents, but fewer inconsistencies. On the whole, the internal quality of responses by older respondents was significantly lower than for younger respondents.

Education

The respondents with higher levels of education were remarkably similar to less-educated respondents in terms of the indicators of external reliability. They had a slightly better match with their official records for age at first arrest (because they were older when first arrested). They also had a slightly better match on their reports of being in a juvenile facility.

However, indicators of internal quality followed the expected pattern. The more highly educated respondents had substantially* fewer omissions than less-educated respondents, and they performed much better* on the skip patterns and other indicators of confusion. They were slightly, but not significantly, more consistent in their answers than the less-educated respondents.

Race

Respondents who said they were Mexican-American or Chicano were no better or worse in external reliability or internal quality than were other respondents. (Some of them completed survey booklets in Spanish.) Also, black respondents were no better or worse than other respondents on external reliability, but had substantially worse internal quality, in particular on confusion and inconsistency, though not on omissions. The overall summary measure ("percent of bad internal quality indicators") was worse than average for black respondents (significant at the .001 level) separately in each state (California, Michigan, and Texas) and separately in prisons and in jails.

*Significant at .001 level.

RELATIONSHIPS WITH SELF-REPORTED CRIME

The summary measures of external reliability and internal quality are, with few exceptions, uncorrelated with self-reports of crimes committed and the rates at which those crimes were committed during the measurement period. Table B.8 shows the Pearson correlations between crime commission rates and the summary external reliability measure. The only strong correlation is for the crime of assault among respondents in Michigan prisons, which is reported at high rates by those whose external reliability is poor. For all the other crime types, the correlations are not significant at the .01 level, and moreover the signs of the correlations are not consistent from one state to another. Table B.9 shows how the reported assault rate varies with the summary reliability measure and, for comparison,

Table B.8

ANNUALIZED CRIME COMMISSION RATES: CORRELATIONS WITH
SUMMARY EXTERNAL RELIABILITY MEASURE

(Prisoner respondents)

Crime Type	State					
	California		Michigan		Texas	
	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.
Robbery	0.11	n.s.	0.17	.02	-0.02	n.s.
Burglary	0.13	.04	0.01	n.s.	-0.03	n.s.
Assault	-0.05	n.s.	0.29	.001	0.12	n.s.
Auto theft	0.07	n.s.	0.06	n.s.	-0.12	n.s.
Theft other than auto	0.06	n.s.	0.18	.02	0.06	n.s.
Forgery & credit cards	0.05	n.s.	-0.04	n.s.	0.07	n.s.
Fraud	0.07	n.s.	0.07	n.s.	-0.01	n.s.
Dealing drugs	-0.11	n.s.	-0.12	n.s.	0.08	n.s.

- NOTES: 1. n.s. = not significant at the .05 level.
 2. Pearson correlations were calculated for respondents who committed the crime.
 3. A high value of the summary external reliability measure indicates poor reliability. See Table B.3.

Table B.9

VARIATIONS IN REPORTED ASSAULT RATES
MICHIGAN PRISONER RESPONDENTS

Percent of Bad Reliability Indicators	N	Reported Assault Rate		
		Median	Mean	90th Percentile
0-13	17	2.4	3.6	9.4
13-32	59	2.8	4.3	11.1
Over 32	34	3.0	8.6	28.9
All Michigan prisoners who reported assault ^a	131	2.8	5.3	12.0

NOTE: For this crime type, Michigan prisoner respondents with poor reliability have significantly higher assault rate than those with low reliability.

^aIncludes respondents with missing summary reliability indicator.

Table B.10 shows a more typical crime type whose rate is not significantly related to the summary reliability measure.

Table B.10

VARIATIONS IN REPORTED BURGLARY RATES
MICHIGAN PRISONER RESPONDENTS

Percent of Bad Reliability Indicators	N	Reported Burglary Rate		
		Median	Mean	90th Percentile
0-13	16	10.8	84	368
13-32	82	4.6	109	379
Over 32	34	9.2	118	664
All Michigan prisoners who reported burglary ^a	132	6.7	109	405

NOTE: For this crime type, the relationship between crime rate and external reliability is not significant.

^aIncludes respondents with missing summary reliability indicator.

Table B.11 shows the correlations between crime commission rates and the summary internal quality measure. Again, none of the correlations are significant at the .01 level, but here the signs of the correlations are preponderately negative. That is, the respondents whose survey responses have poor internal quality tend to report low crime commission rates for the crimes they report committing.

To illustrate the effect of respondents with poor reliability or internal quality on estimates of crime commission rates, Table B.12 shows how the median, mean, and 90th percentile crime rates for eight crimes change when respondents having poor external reliability and/or poor internal quality are excluded.* The cutoff for "good" reliability was set in such a way that approximately 20 percent of respondents for whom the summary external reliability indicator could be calculated fail the requirement, and similarly for internal quality. All told, data for 1380 prisoners are included in Table B.12, of whom 573 (42 percent) are excluded in the columns labeled "Excl PEIQ" (excluding poor external or internal quality).

No important patterns can be observed in Table B.12, as may be expected from the fact that the correlations are insignificant. With the exception of auto theft, the estimated medians, means, and 90th percentiles do not vary by more than a factor of 2 when respondents with poor reliability or internal quality are excluded. In Texas, the statistics obtained from the total sample are typically lower than those excluding PEIQ, but in California and Michigan the patterns vary from crime to crime and are not consistent between the two states.

Similar statistics for respondents in jail are shown in Table B.13. Only respondents with poor internal quality can be excluded, since data for calculating external reliability are not available. Statistics for the crime of auto theft are again somewhat peculiar,[†] but in this table the patterns for other crimes are quite consistent. In nearly all cases the statistics for the total sample are lower than

*In addition, respondents for whom external reliability could not be calculated (12 percent) are excluded.

[†]Notice that the mean exceeds the 90th percentile in Michigan.

Table B.11
 ANNUALIZED CRIME COMMISSION RATES: CORRELATIONS WITH
 SUMMARY INTERNAL QUALITY MEASURE

Crime Type	Subgroup of Respondents													
	California						Michigan						Texas	
	Prison			Jail			Prison			Jail			Prison	
	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.
Robbery	-0.03	n.s.	-0.10	n.s.	0.03	n.s.	-0.14	n.s.	0.03	n.s.	-0.14	n.s.	-0.02	n.s.
Burglary	-0.06	n.s.	-0.07	n.s.	-0.09	n.s.	0.12	n.s.	-0.09	n.s.	0.12	n.s.	-0.06	n.s.
Assault	-0.03	n.s.	-0.00	n.s.	-0.11	n.s.	-0.07	n.s.	-0.11	n.s.	-0.07	n.s.	0.08	n.s.
Auto theft	-0.05	n.s.	0.10	n.s.	-0.12	n.s.	-0.04	n.s.	-0.12	n.s.	-0.04	n.s.	0.05	n.s.
Theft other than auto	-0.08	n.s.	-0.06	n.s.	-0.06	n.s.	0.00	n.s.	-0.06	n.s.	0.00	n.s.	-0.14	.02
Forgery & credit cards	0.00	n.s.	-0.14	n.s.	-0.19	n.s.	0.01	n.s.	-0.19	n.s.	0.01	n.s.	-0.11	n.s.
Fraud	-0.03	n.s.	-0.11	n.s.	-0.03	n.s.	0.18	n.s.	-0.03	n.s.	0.18	n.s.	-0.11	n.s.
Dealing drugs	-0.07	n.s.	-0.07	n.s.	-0.13	.05	-0.11	n.s.	-0.13	.05	-0.11	n.s.	-0.15	.02

NOTES: 1. n.s. = not significant at the .05 level.
 2. Pearson correlations were calculated for respondents who committed the crime.
 3. A high value of the summary internal quality measure indicates poor quality.
 See Table B.7.

Table B.12
 ANNUALIZED CRIME COMMISSION RATES: EFFECT OF REMOVING RESPONDENTS
 HAVING POOR EXTERNAL RELIABILITY OR INTERNAL QUALITY

Crime Type	California Prisoners						Michigan Prisoners						Texas Prisoners					
	Median		Mean		90th Pct.		Median		Mean		90th Pct.		Median		Mean		90th Pct.	
	All	Excl PEIQ ^a	All	Excl PEIQ	All	Excl PEIQ	All	Excl PEIQ	All	Excl PEIQ	All	Excl PEIQ	All	Excl PEIQ	All	Excl PEIQ	All	Excl PEIQ
Robbery	6.3	5.8	53	50	133	138	4.5	5.0	74	35	72	114	2.0	2.0	10	12	18	20
Burglary	9.8	7.7	160	102	384	243	6.2	6.3	103	115	400	400	3.6	4.0	51	46	112	189
Assault	3.5	3.0	7.6	8.4	18	22	2.8	2.7	5.3	3.9	12	9	1.5	1.3	3.5	3.2	7.6	7.5
Auto theft	6.0	6.0	70	30	99	48	4.8	5.6	231	118	413	535	2.0	1.9	9	31	10	24
Theft other than auto	15.6	14.2	254	222	724	526	7.0	7.2	110	88	296	280	5.7	6.8	140	166	387	408
Forgery & credit cards	4.8	4.6	78	78	197	100	4.5	10.6	95	135	344	679	4.2	4.2	39	40	110	136
Fraud	6.9	6.0	179	151	268	206	4.6	3.6	126	47	263	142	4.5	4.9	80	110	180	342
Dealing drugs	166	149	1234	1318	4013	4560	122	100	1121	1378	3612	4711	36	57	756	718	2508	2652

^aExcluding Poor External Reliability or Internal Quality: Respondents whose Percent of Bad External Reliability Indicators exceeded 32% and/or whose Percent of Bad Internal Quality Indicators exceeded 18% are excluded. (Also, respondents with unknown external reliability are excluded.)

Table B.13

ANNUALIZED CRIME COMMISSION RATES: EFFECT OF REMOVING RESPONDENTS
HAVING POOR INTERNAL QUALITY

Crime Type	California Jail Inmates				Michigan Jail Inmates							
	Median		Mean		Median		Mean		90th Pct.			
	All	Excl PIQ ^a	All	Excl PIQ	All	Excl PIQ	All	Excl PIQ	All			
Robbery ^b	4.0	3.8	33	33	61	61	3.2	2.4	21	25	45	65
Burglary	6.3	6.3	79	85	189	204	4.8	5.6	114	102	213	225
Assault	2.8	3.0	6.7	6.1	12	12	1.8	1.7	5.5	5.8	16	17
Auto theft	3.1	2.9	51	19	56	55	4.9	5.1	83	94	43	46
Theft other than auto	9.3	9.4	202	221	583	608	6.0	5.7	145	165	384	451
Forgery & credit cards	4.5	4.6	110	123	269	439	3.3	3.2	107	111	77	64
Fraud	5.3	5.2	235	264	327	470	5.3	6.3	623	100	367	280
Dealing drugs	103	135	1245	1352	3251	3612	92	138	939	1009	3054	3082

^aExcluding Poor Internal Quality: Respondents whose Percent of Bad Internal Quality indicators exceeded 18% are excluded.

^bIn this table, robbery includes encountering a person during a burglary.

those excluding respondents with poor internal quality. The same pattern is present for prisoner respondents (not shown) as is suggested by the correlations in Table B.11. Nearly all the statistics are stable within a factor of 1.5 when the respondents with poor internal quality are excluded.

Appendix C

SCALES USED FOR SOCIAL AND ECONOMIC VARIABLES

INTRODUCTION

Many of the socioeconomic variables presented in this report are based on scales composed of two or more of the original survey items. Scaling was performed for both statistical and theoretical reasons. As a result of his study of the quality of the prisoner self-reports, Marquis (1981) suggested that the analysts who use this particular data set "combine . . . variables . . . into scales to reduce the effects of random response error variation."

In addition, the accumulation of past research has made it evident that there are no simple explanatory keys to the conditions under which crimes are committed. The best predictors of deviant behavior are multidimensional. For example, as we have discussed in Chapter 5, frequency of heroin use alone is not a powerful predictor of crime rates; frequency of heroin use together with its cost is.

Our primary method for generating scales for this study was to employ Guttman scaling techniques using the SPSS Guttman scalogram program. In this appendix we discuss reasons for using Guttman scaling techniques and the procedures used in creating scales. We describe the scales in terms of constituent survey items, cutting point values, and Guttman statistics.

REASONS FOR USING GUTTMAN SCALING

We used Guttman scaling techniques for several reasons. Guttman scaling was specifically developed to construct multiple item indices of underlying phenomena that are unidirectional and cumulative in nature. As we discuss throughout the text, our analyses are based on the concept of criminal behavior and associated factors forming a unidirectional and cumulative continuum of increasing seriousness of deviance. We considered that data from individual survey items about socioeconomic characteristics of respondents, including data on drug

use, were indicators of the respondents' relative position on this continuum. We correctly hypothesized that the use of Guttman techniques to combine individual items into unidimensional and cumulative scales would increase our ability to "measure" the relative deviance of a respondent and thus to "postdict" the seriousness of his criminal behavior.

Guttman scaling allows for elimination of redundant items by analyzing the contribution of the individual items in improving the scales. One of our objectives was to describe measures of criminal behavior in terms that could be translated into practical application by the criminal justice system. Guttman scaling allowed us to first use the variables that had the most pragmatic importance in generating scales and to eliminate less accessible variables if they did not improve the scales. For example, we first scaled variables of frequency and quantities of use of nonopiate psychotropic drugs, which is readily determined by urine analysis; but we discarded the less pragmatic information about numbers of months of drug use in the measurement period because it did not significantly improve the scale.

Guttman scaling provides a statistical assessment of the order in which the variables are used to construct the scale. This allowed us to reject variable orders that intuitively seemed correct but proved to be ill conceived. For example, we reasoned that a juvenile conviction would have to occur before commitment to a local juvenile facility. However, the results of our Guttman analysis showed this to be an empirically incorrect order of the events. Many respondents reported being sent to a juvenile facility who did not report being convicted of crime as a juvenile, and in fact did not report having been arrested as a juvenile.

Guttman scaling allows for incorporation of discrete values of the constituent variables. This contributes to a more practical understanding and possible application of the scale. For example, in constructing the scale of juvenile crime, age 15 for the onset of juvenile violent crime produced the best scale (in terms of the Guttman statistics of scalability, reproducibility, and percent improvement). In a pragmatic sense, it is easier to deal with an

understanding of the serious offender in terms of someone who began committing violent crimes at or before age 15 than to try to apply the more general rule "the earlier the age at which juvenile crime began, the greater the probability of being a serious offender."

PROCEDURES FOR CONSTRUCTING SCALES

The general procedures for constructing the scales included:

- o Selecting variables to be scaled.
- o "Cleaning" the constituent variables.
- o Performing scalogram analysis using data for Michigan respondents.
- o Testing the scales using data for respondents in California and Texas.

Selecting Variables for Scales

Two criteria were used to select variables for scales:

- o The analysis of "external reliability" and "internal quality" (App. B) showed that a relatively large percent of respondents had "good" data for the variable. This eliminated variables which produced "bad" internal quality or "bad" external reliability indicators for many respondents; for example, income variables were not used in scales of employment.
- o Past research or theory indicated that the items could and should be combined as indicators of the seriousness of a particular form of deviant behavior.

"Cleaning" the Data

Individual responses to items used in a scale were submitted to a series of logic checks similar to the procedures described in App. B. Data from respondents who "failed" the logic checks were eliminated from further analysis, resulting in generation of the scale. The respondents who "failed" were assigned a "missing value" on the relevant scale.

Initial Scalogram Analysis

To ensure that the products of the scalogram analysis were in fact measures of a generalizable empirical phenomenon instead of being mere statistical quirks or state-specific occurrences, all scales were first derived using Michigan data and later applied to the other data sets.

The sets of variables selected for scaling on the basis of their theoretical congruence were entered into the SPSS scalogram analysis program specifying multiple "cutting points" (values) for each variable. All values of ordinal items were submitted for analysis. The values specified for continuous interval items (such as daily cost of heroin and number of pills taken daily) were those roughly corresponding to 20-percent increments in the frequencies of values of the variables for the Michigan sample.

The scalogram procedure automatically selected the optimal unidirectional and cumulative order of the variables. For example, almost all daily users of barbiturates were found by the analysis to use 5 or more barbiturate pills a day; a relatively large number of respondents who used 5 barbiturate pills a day on the days that they took them were found not to have used barbiturates every day. Therefore the procedure automatically placed the use of 5 barbiturate pills a day lower on the scale than daily use of barbiturates.

The scales were evaluated using the following Guttman statistics:

- o Coefficient of reproducibility: the evaluation of the scale score as a predictor of responses on individual items;
- o Minimum marginal reproducibility: the extent to which the coefficient of reproducibility is due to response patterns;
- o Percent improvement (difference between above two statistics);
- o Coefficient of scalability: percent minimum marginal reproducibility improvement.

Scales generally were not considered for further analysis unless they had a coefficient of reproducibility that exceeded .90, a

coefficient of scalability that exceeded .70, and a percent improvement of 10 percent or better.

In addition, the scale was not used unless it divided the respondents into categories that contained sufficient numbers of respondents for analysis.

In some cases it was impossible to construct a scale for certain sets of variables that met these criteria. For example, an adequate scale of heroin and amphetamine use could not be constructed. When this occurred we simply substituted a dummy variable for the intended scale.

Testing the Initial Scales

Scales that met the criteria discussed above were evaluated using the California data set and then the Texas data set. Once again the SPSS scalogram program was used; however, both the order of the variables and the values were specified.

Unless the distributions and statistics met the same criteria as specified for Michigan in both California and Texas, the scales were rejected. Scales that continued to meet these criteria can be considered as generalizable, unidirectional and cumulative and could probably be used in models for incarceration cohorts in most states. In general, one and only one scale that was constructed from a specific set of variables met these rather rigorous standards. For some sets of variables however, several scales emerged that were retained for analysis. One of the alternatives was later selected based on its predictive powers (see App. D).

The Guttman Scales

The following scales were constructed from survey items: indicators of juvenile criminality, juvenile interaction with the justice system, juvenile drug use, job stability, economics of heroin addiction, and quantity and frequency of drug use. In addition, scales were constructed from official record data as indicators of criminal seriousness and juvenile interaction with the justice system. Table C.1 lists specific scales, their values, their constituent variables, and

Table C.1

GUTTMAN SCALES OF SOCIOECONOMIC VARIABLES^a

Scale	Scale Values	Constituent Variables ^b	Guttman Statistics		
			Coefficient of Reproduceability	Coefficient of Scalability	Percent of Improvement
Juvenile criminality	0=No juvenile crime reported 1=Juvenile crime but not in list 2=Did property crime age 16 or after 3=Did violent crime before age 16 4=Did violent crime frequently	A4 A7 A8 A9 A10 A11	.98	.92	26%
Juvenile drug use	0=No use of drugs about which we asked 1=Just marijuana use 2=Just 1 or 2 tries with hard drugs 3=Frequent use of hard drugs other than heroin 4=Heroin user 5=Heroin addict	A12 A13A A13B A13C A13D	.99	.95	27%
Juvenile interaction with the criminal justice system	0=No interaction 1=Sent to local juvenile facility 2=Arrested before age 16 3=Convicted before age 16 4=Greater than 1 time in state juvenile facility	A1 A2 A5A A6A A6B	.93	.80	28%
Juvenile interaction (alternative scale)	0-3=same as above 4=One or more times in state juvenile facility	same as above	.91	.76	--
Juvenile interaction with criminal justice system (official record version) California prisoners only	0=No interaction on record 1=Sent to local juvenile facility 2=Arrest before age 16 3=Conviction before age 16 4=Greater than 1 time in state juvenile facility	California official data on juvenile crime found in inmate folder and on California prison tape	.98	.93	24%
Employment stability in measurement period	0=No employment in measured period 1=Four or more jobs 2=Three or fewer jobs 3=Three or more months worked at each job 4=Worked for over 70% of measurement period 5=One job held for over 90% of measurement period	C2C C2yr C3 C4 C5C C6yr C7 C8 C9 C10 C11 C17 C18 C19	.98	.94	28%
Heroin use-cost in measurement period	0=No drug use in measurement period 1=Drug use but not heroin 2=Used heroin but only weekly or less 3=Used heroin daily but paid under \$50 daily 4=Used heroin daily, paid \$50 or more daily	C23 C25A C26	.99	.97	23%

For footnotes, see next page.

Table C.1--continued

Scale	Scale Values	Constituent Variables	Guttman Statistics		
			Coefficient of Reproduceability	Coefficient of Scalability	Percent of Improvement
Heroin barbiturate use in the measurement period	0=No W3 drug use 1=Less than \$20 day for heroin 2=\$20 or more a day for heroin when used but didn't use daily 3=Used heroin daily 4=Also used barbiturates at least weekly 5=Used more than 10 pills daily	C23 C25A C25B C26 C27	.95	.73	13%
Barbiturate use: frequently and quantity in the measurement period	0=No drug use in measurement period 1=Drug use but not barbiturates 2=Used barbiturates 3=Used 5 or more pills on days when used 4=Used almost daily or more	C23 C25B C27	.99	.94	20%
Barbiturate use-alcohol abuse in measurement period	0=No drug use in measurement period 1=Used drugs but not barbiturates 2=Used barbiturates 3=Used barbiturates and abused alcohol 4=Abused alcohol and took 10 or more pills on days used 5=Abused alcohol and took 10 or more barbiturate pills every day	C22 C23 C25B C27	.99	.93	17%
Barbiturate-Amphetamine use: frequency and quantity in measurement period	0=No drug use in measurement period 1=Used drugs but not both amphetamines and barbiturates 2=Used both amphetamines and barbiturates 3=Used both daily 4=Used more than 10 pills daily	C23 C25B C25C C27	.98	.90	17%
Amphetamine use: frequency and quantity in the measurement period	0=Used no drugs in measurement period 1=Used drugs but not amphetamines 2=Used amphetamines but less than a few times a week (used them a few times a month) 3=Used amphetamines at least a few times a week but used 10 or fewer pills on the days uppers were used 4=Used amphetamines at least a few times a week and took over 10 pills on days used	C23 C25C C27	.99	.97	16%

^aTable does not include scales which did not meet the criteria.

^bUnless otherwise noted, all refer to survey items: See Appendix E.

the Guttman statistics based on the whole sample. Many scales were constructed that are not shown in the table. Only those scales are listed that were later found to be common cross-state predictors (see App. D) or others that were eventually used in the prediction of crime rates reported on in the text.

Appendix D

IDENTIFICATION OF CROSS-STATE COMMON VARIABLES
FOR PREDICTING CRIME RATES

This appendix describes the specific statistical methods used to select the variables included in the models described in this report. The selection process had three stages:

- o Selecting between Guttman scales that measured the same socioeconomic characteristic and were permutations of the same constituent variables (see App. C).
- o Selecting between variables that were highly correlated and were measures of different aspects of the same socioeconomic phenomenon; for example, frequency of heroin use versus frequency of heroin use and cost.
- o Determining whether dummy variables or scales should be used in the prediction models.

In general, selection procedures were carried out using state-by-state analysis of the variables and using both the prison and jail samples in California and Michigan. The dummy variables for the predictor scales were used in regressions with the crime variables. Based on the results of the regression analyses, the strongest predictors were selected for the multivariate analyses discussed in Chap. 3.

SELECTING BETWEEN ALTERNATIVE GUTTMAN SCALES

As described in App. C, it was not always possible to select a specific scale purely on the basis of the Guttman statistics and the distribution of respondents.

To select between several Guttman scales that were essentially permutations of the same variables and had no underlying theoretical distinction (for example, see Table D.1), two criteria were used:

Table D.1

EXAMPLES OF ALTERNATIVE GUTTMAN SCALES AND
THEIR CONVERSION INTO DUMMY VARIABLES

Scale	Value of Scale	Dummy Variable
Heroin-use-cost: Scale A	0	No measurement-period use of hard drugs?
	1	Used drugs but not heroin in measurement period?
	2	Used heroin but not daily?
	3	Used heroin daily but paid less than \$50/day?
	4	Used heroin daily and paid \$50 or more/day?
Heroin-use-cost: Scale B	0	Identical to Scale A.
	1	Identical to Scale A.
	2	Used heroin but paid less than \$20/day when used?
	3	Used heroin and paid \$20/day or more when used, but did not use more than once a day?
	4	Used heroin more than once a day and paid \$20 or more/day?

strength of association between the scales and the crime rate variables, and consistency of associations in each study state.

The Guttman scales under consideration were converted into sets of dummy (0,1) variables corresponding to each value of the scales. (For examples, see Table D.1.)

The sets of dummy variables derived from the scales, excluding the variables which correspond to the 0 values (baseline variables), and logarithmic transformations of the crime rates for robbery, assault, burglary, theft, auto theft, forgery and fraud, were submitted for regression analysis using SAS stepwise procedures. Regressions were run separately using Michigan, California, and Texas data. If a set of dummy variables from one scale rather than dummies from the alternative scales consistently entered the regression equations separately in all three states, the scale was retained for further analysis and the alternatives rejected.

If dummies from different scales entered the regression equation in different states, the dummies from each scale were separately submitted for regressions in each state. The scale that was the strongest predictor (in terms of R^2 and significance of F) across the three states was selected for further analysis.

For example, the dummies from Heroin-use-cost Scale B (see Table D.1) entered the stepwise regression equations with the crime variables for Michigan. However, the dummies from Heroin-use-cost Scale A entered the stepwise regressions for Texas and California. Although, when tried in separate models, the dummies from Heroin-use-cost Scale A had a significance of F which met the .01 level of significance in all three states, the dummies from Heroin-use-cost Scale B did not. Therefore even though Heroin-use-cost scale B is a stronger predictor in Michigan than Heroin-use-cost Scale A, it was eliminated from analysis because of its poor predictive power in California and Texas.

SELECTING BETWEEN MEASURES OF DIFFERENT ASPECTS OF THE SAME PHENOMENON

Some of the scales (both Guttman and other scales) were combinations of slightly different variables which were constructed because of their different theoretical significance.

For example, the heroin frequency-cost scale differed from a heroin frequency scale by the inclusion of one extra variable, average daily cost of heroin on days used. However, the frequency scale was derived from the hypothesis that heroin as a substance can affect behavior. The frequency-cost scale was derived from the hypothesis that it is the economics of heroin use that affects behavior.

To determine which of the theoretical alternatives were better predictors of criminal behavior, sets of variables were submitted for regressions with the crime variables using SAS stepwise procedures. Regressions were calculated separately for inmates in the three states, and again dummy variables were used for the noncontinuous scales. Variables were considered to be the strongest cross-state common predictors and were used in subsequent procedures if they consistently entered the regression equations (significance level of $F = .05$ to enter) across states and if their inclusion consistently prevented the entrance of analogous but theoretically distinct variables.

Variables that were consistently prevented from entering the regression equations were rejected for inclusion in the "postdiction" models. If different variables entered the regression equations across states, all state-specific significant variables were used. For example, the frequency-cost or frequency-quantity scales of drug use were consistently stronger predictors of crime rates than the frequency scales across states. Therefore the frequency scales were not used in the models for predicting crime rates. However, the strength of several employment variables differed in the three states; therefore, three different types of employment variables were included in subsequent procedures (described in Chap. 3) to construct the prediction models.

Table D.2 lists the variables that were eliminated from further analysis because analogous variables were found to be stronger predictors. The table also shows which analogous variables were found to be stronger predictors across states.

COMPARING THE STRENGTH OF DUMMY VARIABLES WITH SCALES

Although the use of 0,1 variables is statistically preferable to the use of categorical scales, we wanted to be sure that were not

Table D.2
 VARIABLES WHICH WERE AND WERE NOT USED IN MULTIVARIATE ANALYSES

Type of Information	Variables Eliminated from Analysis Because Analogous Variables Proved to be Stronger Predictors	Variables Which were Found to be Stronger Predictors
JUVENILE YEARS	All individual survey items on juvenile crime commission All individual items on juvenile drug use All individual items on juvenile incarcerations	Guttman scale of juvenile crime Guttman scale of juvenile drug use Guttman scales of juvenile inter-action with the criminal justice system
EMPLOYMENT	Individual items about employment in the measurement period and years before the measurement period Guttman scale of employment	Longitudinal unemployment patterns Percent street months worked in measurement period Average number of months employed at each job during the measurement period
DRUG USE IN MEASUREMENT PERIOD	Frequency of heroin use Frequency of barbiturate use Combined amphetamine use-alcohol abuse	Guttman scale of heroin use: frequency and cost Guttman scale of barbiturate use: frequency and quantity Guttman scale of barbiturate use and alcohol abuse
PRIOR RECORD	Guttman scales of arrest seriousness in measurement period Summary scores of past conviction seriousness based on Sellin-Wolfgang (1964) seriousness values	Number of arrests for specific crimes in measurement period Number of prior convictions for specific crimes

losing predictive power by using the dummy variables instead of the scales. Regressions were run with crime rates previously found to be significantly associated with the scales (in dummy variable form) using identical procedures except for the use of the scales in one model and the dummy variables derived from the scale in a second model. (See Table D.3.)

In each comparison the scales in dummy variable form were found to be stronger predictors of crime rates than the categorical scale. Therefore dummy variables were substituted for categorical scales in all regression analyses in Chap. 3.

Table D.3

EXAMPLES OF DIFFERENCES IN RESULTS OF REGRESSIONS
USING SCALES AND DUMMY VARIABLES

Crime Rate	Predictor Scales	Multiple R ² Using Dummies -Multiple R ² Using Scales
Burglary	Juvenile interaction with criminal justice system	+.01
Assault	Heroin use and cost	+.04
	Juvenile criminality	
	Amphetamine use: frequency and quantity	
	Barbiturate use: frequency and quantity	
Theft + Auto Theft + Forgery + Fraud	Heroin use and cost	+.005

Appendix E

1978 JAIL/PRISON SURVEY BOOKLET



INSTRUCTIONS

THERE ARE DIFFERENT TYPES OF QUESTIONS IN THE SURVEY.

TYPE 1 FOLLOW ANY INSTRUCTIONS OR ARROWS NEXT TO THE ANSWER YOU CHOSE, WHICH TELL YOU TO GO TO ANOTHER QUESTION, OR ANOTHER PAGE.

1. Have you watched a baseball game on T.V. in the last year?

YES

NO → go on to next page

2. In all, how many baseball games did you watch?

11 or more

1 to 10

How many?

8

3. During how many months last year did you watch one or more baseball games on T.V.?

_____ Months

go on to next page →

4. In the months when you watched baseball games on T.V. how often did you usually watch them?

TYPE 2 CIRCLE ONE ANSWER NEXT TO EACH ITEM LISTED.

Before you were 18, how often did you play the following sports?
(Circle one number next to each sport.)

	Often	Sometimes	Just Once or Twice	Never
Baseball.....	3	②	1	0
Basketball.....	③	2	1	0
Football.....	3	2	①	0
Golf.....	3	2	1	①

TYPE 3 FOR MOST QUESTIONS CHOOSE ONE ANSWER FROM THE CHOICES LISTED AND CHECK THE BOX NEXT TO IT. SOME QUESTIONS HAVE INSTRUCTIONS THAT SAY "Check all that apply". FOR THESE CHECK THE BOXES NEXT TO ALL THE ANSWERS THAT APPLY TO YOU.

What sports have you ever watched on T.V.? (Check all that apply.)

- Football
- Soccer
- Stock car racing
- Baseball
- Boxing
- Basketball
- Tennis
- Other, what? horse racing

DO NOT
WRITE
THIS SP

PART A

The first questions are about your background. Some of the questions ask you to think back about your life and to remember things that happened. Please really think about the questions and give the most accurate answers you can.

- 1. How old were you when you were first arrested--that is, officially charged by the police (an adult or juvenile arrest, other than a traffic violation)?

_____ Years Old

25
''/

- 2. How old were you when you were first convicted of a criminal offense (an adult or juvenile conviction, other than a traffic violation)?

_____ Years Old

27
''/

- 3. What were the main reasons that you first got involved in crime?
(Check all that apply)

For excitement

29/

Friends got me into it

30/

To get money for high living -
nice clothes, car, etc.

31/

Lost my temper

32/

To get money for drugs - had a habit

33/

To get money for day to day living -
self or family support

34/

For the reputation

35/

Everyone I knew was doing crimes -
just a normal way of life

36/

Other, what? _____

37/

- 4. How old were you at that time?

_____ Years Old

38
''/

5. Were you ever sent to a local or county juvenile facility such as a county youth camp, a home, or a juvenile hall?

NO ₁

YES ₂ → How many times? _____ Times

40/
41
''/

6. Were you ever sent to a statewide or federal juvenile institution?

NO ₁

YES ₂ → How many times? _____ Times

43/
44
''/

7. Before you were 18, did you ever do anything on this list?

- Broke into someplace
- Stole a car
- Stole something worth more than about \$100
- Used a stolen credit card
- Forged something

YES ₁

NO ₂ → go on to next page →

46/

8. How old were you when you first did any of these things?

_____ Years Old

47
''/

9. Before you were 18, how often did you do any of these things?

₁ Once or twice

₂ A few times

₃ Sometimes

₄ Often

49/

10. Before you were 18, did you ever do anything on this list?

- Robbed someone
- Threatened someone with a gun or knife or other weapon
- Hurt someone with a gun or knife or other weapon
- Beat someone badly
- Raped someone

YES ₁

NO ₂

11. How old were you when you first did any of these things?

_____ Years old

12. Before you were 18, how often did you do any of these things?

- ₁ Once or twice
- ₂ A few times
- ₃ Sometimes
- ₄ Often

13. Before you were 18, how often did you use each of the things on the list below? (Circle one number on each line.)

	<u>Often</u>	<u>Sometimes</u>	<u>Just Once or Twice</u>	<u>Never</u>	
Marijuana.....	3	2	1	0	54/
LSD/Psychedelics/Cocaine....	3	2	1	0	55/
Uppers/Downers.....	3	2	1	0	56/
Heroin.....	3	2	1	0	57/

50/

51
"/

53/

The next questions are about your whole life, both as an adult and as a juvenile.

14. Altogether in your life, how many times have you been arrested?
(Don't count traffic violations.)

- Once
- 2-3 times
- 4-6 times
- 7-10 times
- 11-15 times
- 16-25 times
- More than 25 times

58/

15. How many different terms have you served in a local or county jail?
(If you are now in jail, include this term in your total count.)

- None
- 1-2 terms
- 3-5 terms
- 6-10 terms
- 11-15 terms
- 16-25 terms
- More than 25 terms

59/

16. How many times have you been on probation?

_____ Times OR Never

60
''/

17. How many different terms have you served in an adult prison? (If you are now in prison, include this term in your total count. Don't count parole revocations as a different term.)

- None
- 1 term
- 2 terms
- 3 terms
- 4 terms
- 5 terms
- 6 or more terms

62/

18. How many times have you been on parole (count each time you were released on parole)?

_____ Times OR _00 Never

63
''/

19. How many times have you had probation or parole revoked?

_____ Times OR _00 Never

65
''/

20. Have you ever been committed to a drug treatment program?

_1 YES _2 NO

67/

21. Altogether in your life, how many times have you been convicted of a felony?

- Never
- Once
- 2-3 times
- 4-6 times
- 7-10 times
- 11-15 times
- 16 or more times

68/

PART B

CARD 02

1. Here is a set of statements about the law, prisons, police and men who get involved in crime. Read each statement carefully. Think about your own experience and people you know. Then decide how much you AGREE or DISAGREE with each statement. (Circle one number next to each statement.)

6=7/

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	
Whenever someone gets cut or shot there is usually a good reason.....	1	2	3	4	8/
Men with a record get a bad deal in court.....	1	2	3	4	9/
It is possible to get so good at crime that you'll never get caught.	1	2	3	4	10/
One good thing about crime is the fun of beating the system.....	1	2	3	4	11/
If a man only does one or two crimes a year, chances are good he'll never get caught.....	1	2	3	4	12/
You don't learn anything in jail or prison that helps you make it going straight.....	1	2	3	4	13/
No matter how careful you are, you won't always get away with crime...	1	2	3	4	14/
Alot of men would stay out of crime if sentences were longer.....	1	2	3	4	15/
Usually someone who gets cut or shot deserves it.....	1	2	3	4	16/
Committing crime is pretty much a permanent way of life.....	1	2	3	4	17/
If you keep doing crime, you know you will go to prison sometime.....	1	2	3	4	18/
In court, no one really looks out for the defendant's rights.....	1	2	3	4	19/
Men who are really good at crime never seriously think about going straight.....	1	2	3	4	20/
Because of insurance, no one is really hurt by property crimes.....	1	2	3	4	21/
When you've figured it out, doing prison time is not too hard.....	1	2	3	4	22/
Crime is the easiest way to get what you want.....	1	2	3	4	23/

X

2. Here is a list of things that can happen in a person's life. What are the chances each of these things would happen to you from doing crimes? (Circle one number next to each thing listed.)

	<u>No</u> <u>Chance</u>	<u>Low</u> <u>Chance</u>	<u>Even</u> <u>Chance</u>	<u>High</u> <u>Chance</u>	<u>Certain</u>	
Having friends.....	1	2	3	4	5	24/
Being bored.....	1	2	3	4	5	25/
Having money for necessities.....	1	2	3	4	5	26/
Getting arrested.....	1	2	3	4	5	27/
High living.....	1	2	3	4	5	28/
Having worries.....	1	2	3	4	5	29/
Owning expensive things...	1	2	3	4	5	30/
Having hassles.....	1	2	3	4	5	31/
Being my own man.....	1	2	3	4	5	32/
Having people look down on me.....	1	2	3	4	5	33/
Having a lot of money.....	1	2	3	4	5	34/
Going to prison for years.	1	2	3	4	5	35/
Having a family.....	1	2	3	4	5	36/
Getting injured or killed.....	1	2	3	4	5	37/
Being happy.....	1	2	3	4	5	38/

3. In the past, how many of the good things in the above list happened to you from doing crime?

- All of them
- Most of them
- Some of them
- A few of them
- None

39/

4. In the past, how many of the bad things in the above list happened to you from doing crime?

- All of them
- Most of them
- Some of them
- A few of them
- None

40/

5. Here is the same list of things that can happen in a person's life. What are the chances each of these would happen to you if you did not do crimes? (Circle one number next to each thing listed.)

	<u>No</u> <u>Chance</u>	<u>Low</u> <u>Chance</u>	<u>Even</u> <u>Chance</u>	<u>High</u> <u>Chance</u>	<u>Certain</u>	
Having friends.....	1	2	3	4	5	41/
Being bored.....	1	2	3	4	5	42/
Having money for necessities.....	1	2	3	4	5	43/
Getting arrested.....	1	2	3	4	5	44/
High living.....	1	2	3	4	5	45/
Having worries.....	1	2	3	4	5	46/
Owning expensive things..	1	2	3	4	5	47/
Having hassles.....	1	2	3	4	5	48/
Being my own man.....	1	2	3	4	5	49/
Having people look down on me.....	1	2	3	4	5	50/
Having a lot of money....	1	2	3	4	5	51/
Going to prison for years.....	1	2	3	4	5	52/
Having a family.....	1	2	3	4	5	53/
Getting injured or killed.....	1	2	3	4	5	54/
Being happy.....	1	2	3	4	5	55/

6. In the past, how many of the good things in the above list happened to you when you were not doing crime.

- All of them
- Most of them
- Some of them
- A few of them
- None

56/

7. In the past, how many of the bad things in the above list happened to you when you were not doing crime?

- All of them
- Most of them
- Some of them
- A few of them
- None

57/

8. Overall, in the past, how successful do you think you were in doing crime?

- 1 Very Successful
- 2 Somewhat Successful
- 3 Somewhat Unsuccessful
- 4 Very Unsuccessful

58/

9. What do you think the chances are that you will try to make it going straight when you get out? (Circle the number that is your answer.)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No		Low		Some		Good		High		Completely
Chance		Chance		Chance		Chance		Chance		Certain

59
'''/

10. What do you think the chances are that you will actually make it going straight on the outside? (Circle the number that is your answer.)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No		Low		Some		Good		High		Completely
Chance		Chance		Chance		Chance		Chance		Certain

62
'''/

11. What do you think the chances are that you will end up back in prison or jail after you get out? (Circle the number that is your answer.)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No		Low		Some		Good		High		Completely
Chance		Chance		Chance		Chance		Chance		Certain

65
'''/

- 1. The next section will be about the time before you were arrested for your present term. There is a blue card with a calendar on it. The instructions on this page tell you how to fill it out. Raise your hand if you have any trouble filling it out.
- 2. For the sentence you are now serving, in what year were you arrested? (If you were arrested several times for this sentence, use the earliest arrest.)

Year Arrested: _____

8
''''/

Write that year where it says "Year Arrested" on the calendar.

- 3. In what month of that year was that arrest?

Month Arrested: _____

12
''/

Write "arrested" on the calendar in that month (for the "Year Arrested" line.)

- 4. Now, draw a line through all the months after that month (to the end of the year).

- 5. You will not be asked about anything that happened in the months you drew the line through.

- 6. What was the year before you were arrested?

Year Before Arrested: _____

14
''''/

Write that year on the calendar where it says "Year Before Arrested".

- 7. During all the months on the calendar before you were arrested (including both years) were you ever locked up for a month or more?

NO ₁

YES ₂

Put X's in all the months when you were locked up. (If you can't remember exactly, think about the time of year it was and put X's in the number of months you were locked up around that time of year.)

18/

8. Now look at the calendar. All the blank boxes (without X's or lines) are months when you were on the street before you were arrested.

9. Count all the blank boxes.
How many months was that? \longrightarrow _____ Months

19
"/

10. You will be asked about these months and also about the month you marked "Arrested". To get the total of these months, add one month and write the total here. \longrightarrow _____ Total Street Months

$\begin{array}{r} + \quad 1 \\ \hline \end{array}$

21
"/

11. Write this total number in the box on the calendar where it says "STREET MONTHS ON THE CALENDAR". You will need this number in answering the next questions.

12. Underneath the month marked "Arrested," write "Include this month."

This will remind you to include this month in your answers.

23/

The next questions are about the STREET MONTHS ON THE CALENDAR (including the month you were arrested). These are the months on the calendar that do not have X's or lines in them.

13. Were you in the military service at all during this time?

NO ₁

YES ₂

► Write "service" on the calendar months when you were in the service.

33/

14. Were you in the hospital for a month or more?

NO ₁

YES ₂

► How many months was that?

34/

_____ Months

Write "hospital" on the calendar months when you were in the hospital.

35
"/

15. Were you going to school regularly during this time?

NO ₁

YES ₂

► Write "school" on the calendar months when you were going to school.

37/

16. Think about all the different places you lived during the street months on the calendar. Did you move from one city or town to another?

NO ₁

YES ₂

► How many different cities or towns did you live in?

38/

_____ cities/towns

39
"/

17. During the street months on the calendar did you have any jobs?
(Include work release jobs.)

YES ₁

NO ₂

► go on to next page →

41/

18. During how many of these months did you work?

_____ Months

42
"/

19. During these months, how many different jobs did you have?

_____ Jobs

44
"/

20. About how much did you make per month from these jobs?

\$ _____ Per month

46
"/

Look at the calendar. Remember to answer only for your "street months on the calendar".

- 21. During how many of the street months on the calendar were you married or living with a girlfriend?

_____ Months

50
"/

- 22. During these months, did you drink heavily, get drunk often, or have a drinking problem?

₁ YES ₂ NO

52/

- 23. Did you use drugs at all during the months on the street? (Don't count prescribed drugs or marijuana.)

₁ YES ₂ NO → go on to next page →

53/

- 24. During how many of these months did you use drugs other than marijuana?

- Every month
- Most months
- About half the months
- Sometimes, but less than half the months
- Hardly ever

54/

- 25. During the months when you were using drugs, how often would you say you usually used each of the drugs listed below? (Circle one number for each drug.)

	Did not use at all	A few times a month	A few times a week	Everyday or almost everyday	More than once a day
Heroin/Methadone.....	0	1	2	3	4
Barbiturates/downers/"reds".....	0	1	2	3	4
Amphetamines/uppers/"whites".....	0	1	2	3	4

55/

56/

57/

- 26. If you used heroin, about how much money did you spend on it in a typical day when you used it? (If you did not use heroin at all, write 0.)

\$_____ Per day

58
"/

- 27. If you used pills, (uppers or downers) about how many did you take in a typical day when you used them? (If you didn't use pills at all, write 0.)

_____ Pills

61
"/

28. During the street months on the calendar, which of the following best describe the way you thought of yourself? (Check all that apply)

- | | | |
|---|--|----|
| <input type="checkbox"/> Car thief | <input type="checkbox"/> Family man | 8 |
| <input type="checkbox"/> Booster | <input type="checkbox"/> Drug dealer | 10 |
| <input type="checkbox"/> Thief | <input type="checkbox"/> Drug user/addict | 12 |
| <input type="checkbox"/> Working man | <input type="checkbox"/> Alcoholic/drunk | 14 |
| <input type="checkbox"/> Misfit | <input type="checkbox"/> Forger/check passer | 16 |
| <input type="checkbox"/> Burglar | <input type="checkbox"/> Non criminal/straight | 18 |
| <input type="checkbox"/> Fighter/street fighter | <input type="checkbox"/> Violent person | 20 |
| <input type="checkbox"/> Conman | <input type="checkbox"/> Robber | 22 |
| <input type="checkbox"/> Gang member | <input type="checkbox"/> Bad tempered | 24 |
| <input type="checkbox"/> Fence | <input type="checkbox"/> Player | 26 |
| <input type="checkbox"/> Problem drinker | <input type="checkbox"/> Other, what? _____ | 28 |

The next questions are also only about the STREET MONTHS ON THE CALENDAR. Look at the calendar to help you remember what you were doing during these months. These are months that do not have X's or lines in them.

- I. 1. During the STREET MONTHS ON THE CALENDAR did you do any burglaries? (Count any time that you broke into a house or a car or a business in order to take something.)

YES ₁

NO ₂ → go on to page 18

30/

- 2. In all, how many burglaries did you do?

11 OR MORE



1 TO 10
How many?

Burglaries

- 3. Look at the total street months on the calendar. During how many of those months did you do one or more burglaries?

_____ Months

go on to next page →

31/

32
"/

34
"/

- 4. In the months when you did burglaries, how often did you usually do them?

(CHECK ONE BOX)

EVERYDAY OR
ALMOST EVERYDAY

→ How many per day?

How many days a week usually?

SEVERAL TIMES
A WEEK

→ How many per week?

EVERY WEEK OR
ALMOST EVERY WEEK

→ How many per month?

LESS THAN
EVERY WEEK

→ How many per month?

36/

37

"/

39/

40/

41

"/

43/

44

"/

46/

47

"/

5. How many of these burglaries were you arrested for? (Include all of the times you were arrested for doing a burglary even if you were charged with something else.)

_____ Arrests for burglaries

49
''/

6. How many burglaries were stores or other businesses?

- None
- A few
- Most
- All

51/

7. When you entered or broke into places to do a burglary, how often did you carry a gun (real or fake) or knife or other weapon?

- ₁ All the time
- ₂ Most of the time
- ₃ About half the time
- ₄ Some of the time
- ₅ Once
- ₆ Never

52/

8. What kind of weapon did you usually carry? (Check all that apply)

- ₁ Never carried weapon
- Hand gun
- Knife
- Rifle/Shotgun
- Other, what kind? _____

53/

54/

55/

56/

57/

9. While you were doing a burglary, did you ever run into someone-- that is did you ever find someone inside a place or have someone find you?

NO ₁ YES ₂ ➡ How many times? _____

58/

59

''/

II. 1. During the STREET MONTHS ON THE CALENDAR did you rob any businesses?
That is did you hold up a store, gas station, bank, taxi or other
business?

YES ₁

NO ₂ ➡ go on to page 20

61/

2. In all, how many businesses did you rob?

11 OR MORE

1 TO 10
How many?

62/

3. Look at the total street months on the calendar.
During how many of those months did you rob one or more businesses?

Business Robberies

63
''

go on to next page ➡

_____ Months

65
''/

4. In the months when you did business robberies, how often did you usually do them?

(CHECK ONE BOX)

EVERYDAY OR
ALMOST EVERYDAY

How many per day?

How many days a week usually?

67/
68
''/
70/

SEVERAL TIMES
A WEEK

How many per week?

71/
72
''/

EVERY WEEK OR
ALMOST EVERY WEEK

How many per month?

74/
75
''/

LESS THAN
EVERY WEEK

How many per month?

77/
78
''/

5. How many of these robberies were you arrested for? (Include all of the times you were arrested for robbing a business even if you were charged with something else.)

_____ Arrests for business robberies

8
11/

6. When you robbed a business, how often did you carry or use a weapon to threaten or injure someone?

- ₁ All the time
- ₂ Most of the time
- ₃ About half the time
- ₄ Some of the time
- ₅ Once
- ₆ Never

10/

7. What kind of weapon did you usually carry or use? (Check all that apply)

- ₁ Never used weapon
- Hand gun
- Knife
- Rifle/Shotgun
- Other, what kind? _____

11/
12/
13/
14/
15/

III. 1. During the STREET MONTHS ON THE CALENDAR did you rob any persons, do any muggings, street robberies, purse snatches, or hold-ups in someone's house or car? (Do not include any business robberies or hold-ups during a burglary that you already mentioned.)

YES ₁

NO ₂ ➔ go on to page 22

16/

2. In all, how many robberies did you do?

11 OR MORE



1 TO 10
How many?

Robberies

go on to next page ➔

17/

3. Look at the total street months on the calendar. During how many of those months did you rob someone?

_____ Months

18
''/

20
''/

4. In the months when you robbed someone, how often did you do it (don't include robbing businesses)?

(CHECK ONE BOX)

EVERYDAY OR
ALMOST EVERYDAY

↓
 ➔ How many
per day?

How many days
a week usually?

22/
23
''
25/

SEVERAL TIMES
A WEEK

➔ How many
per week?

26/
27
''/

EVERY WEEK OR
ALMOST EVERY WEEK

➔ How many
per month?

29/
30
''/

LESS THAN
EVERY WEEK

➔ How many
per month?

32/
33
''/

5. How many of these robberies were you arrested for? (Include all of the times you were arrested for robbing a person even if you were charged with something else.)

_____ Arrests for robbing people

35
"/

6. When you robbed someone, how often did you carry a weapon or use a weapon to threaten or injure someone?

- ₁ All the time
- ₂ Most of the time
- ₃ About half the time
- ₄ Some of the time
- ₅ Once
- ₆ Never

37/

7. What kind of weapon did you usually carry or use? (Check all that apply)

- ₁ Never used a weapon
- Hand gun
- Knife
- Rifle/Shotgun
- Other, what kind? _____

38/

39/

40/

41/

42/

IV. 1. During the STREET MONTHS ON THE CALENDAR, did you ever hurt or kill someone during a burglary (break-in) or a robbery?

YES ₁ NO ₂ ➔ go on to page 24

43/

2. Altogether during these months how many people did you hurt or kill during a burglary or robbery?

_____ People

44
''/

3. What kind of weapon did you use to hurt or kill these people?
(Check all that apply)

- ₁ No weapon/Bare hands
- Hand gun
- Knife
- Rifle/Shotgun
- Other, what kind? _____

46/

47/

48/

49/

50/

4. Do you think that any of the people you injured might have died? If so, how many?

YES ₁ ➔ How many? _____ People

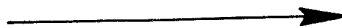
51/

NO ₂

52
''/

This page blank;

go on to next page



V. The questions on this page DO NOT include things that happened during a robbery or burglary. Look at the calendar. Remember to answer for the STREET MONTHS ON THE CALENDAR.

1. Even if no one was hurt, during the STREET MONTHS ON THE CALENDAR did you assault someone, threaten someone with a weapon, shoot at someone, try to cut someone, or beat or strangle someone?

YES ₁

NO ₂ ➔ go on to page 26

54/

2. Altogether, during those months how many times did you do these things? (Not during a burglary or robbery)

_____ Times

55
"/

3. How many people did you injure or kill? (Not during a burglary or robbery)

_____ People

57
"/

4. How many times were you arrested when you assaulted, threatened, shot at, tried to cut, or beat or strangled someone?

_____ Arrests

59
''/

5. When you did any of these things, how often did you use a weapon?

- ₁ All the time
- ₂ Most of the time
- ₃ About half the time
- ₄ Some of the time
- ₅ Once
- ₆ Never

61/

6. What kind of weapon did you use? (Check all that apply)

- ₁ No weapon/Bare hands
- Hand gun
- Knife
- Rifle/Shotgun
- Other, what kind? _____

62/

63/

64/

65/

66/

7. Do you think that any person you hurt might have died? If so, how many persons?

YES ₁ ➡ How many? _____ People

67/

NO ₂

68
''/

VI. 1. During the STREET MONTHS ON THE CALENDAR did you do any theft or boosting? That is, did you steal from a till or cash register, shop lift, or pick pockets, or take something from someone without their knowledge? (Do not include car theft.)

YES _1 NO _2 ➔ go on to page 28

2. In all, how many thefts did you do?

11 OR MORE

1 TO 10
How many?

3. Look at the total street months on the calendar. During how many of those months did you do one or more thefts?

Thefts

go on to next page ➔

_____ Months

4. In the months when you did thefts, how often did you usually do them?

(CHECK ONE BOX)

EVERYDAY OR ALMOST EVERYDAY

How many per day?

How many days a week usually?

SEVERAL TIMES A WEEK

How many per week?

EVERY WEEK OR ALMOST EVERY WEEK

How many per month?

LESS THAN EVERY WEEK

How many per month?

8/

9/

10
''/

12
''/

14/
15

''/
17/

18/
19

''/
21/

22
''/

24/
25

''/

5. How many of these thefts were you arrested for? (Include all of the times you were arrested for doing a theft even if you were charged with something else.)

_____ Arrests for Thefts

27
''/

VII. 1. During the STREET MONTHS ON THE CALENDAR did you steal any cars, trucks or motorcycles?

YES 1

NO 2 → go on to page 30

29/

2. In all, how many times did you steal a vehicle (a car, truck or motorcycle)?

11 OR MORE



1 TO 10
How many?



Vehicle Thefts

30/

3. Look at the total street months on the calendar. During how many of those months did you steal one or more vehicles?

_____ Months

go on to next page →

31
''/

33
''/

4. In the months when you stole a vehicle, how often did you usually steal one?

(CHECK ONE BOX)

EVERYDAY OR
ALMOST EVERYDAY



How many
per day?

How many days
a week usually?

35/
36
''/
38/

SEVERAL TIMES
A WEEK

How many
per week?

39/
40
''/

EVERY WEEK OR
ALMOST EVERY WEEK

How many
per month?

42/
43
''/

LESS THAN
EVERY WEEK

How many
per month?

45/
46
''

5. How many of these vehicle thefts were you arrested for? (Include all of the times you were arrested for stealing a vehicle, even if you were charged with something else.)

_____ Arrests for vehicle thefts

48
"/

6. When you stole vehicles did you usually sell the vehicle or its parts?

YES 1

NO 2

50/

VIII. 1. During the STREET MONTHS ON THE CALENDAR did you ever forge something, use a stolen or bad credit card, or pass a bad check?

YES ₁

NO ₂ → go on to page 32

2. In all, how many times did you forge something, use a bad credit card, or pass a bad check?

11 OR MORE

1 to 10
How many?

3. Look at the total street months on the calendar. During how many of those months did you forge something, use a bad credit card, or pass a bad check?

Forgeries/Cards/Checks

go on to next page →

_____ Months

4. In the months when you did forgeries, used bad cards or passed bad checks, how often did you usually do these things?

(CHECK ONE BOX)

EVERYDAY OR
ALMOST EVERYDAY

↓
 → How many
per day?

→ How many days
a week usually?

SEVERAL TIMES
A WEEK

→ How many
per week?

EVERY WEEK OR
ALMOST EVERY WEEK

→ How many
per month?

LESS THAN
EVERY WEEK

→ How many
per month?

51/

52/

53
"/

55
"/

58
"/
60/

61/
62
"/

64/
65
"/

67/
68
"/

5. How many of these forgeries, bad checks or credit cards were you arrested for? (Include all of the times you were arrested for doing one of these things even if you were charged with something else.)

_____ Arrests

70
"/

IX. 1. During the STREET MONTHS ON THE CALENDAR did you do any frauds or swindles (illegal cons) of a person, business, or the government?

YES _1 NO _2 go on to page 34

8/

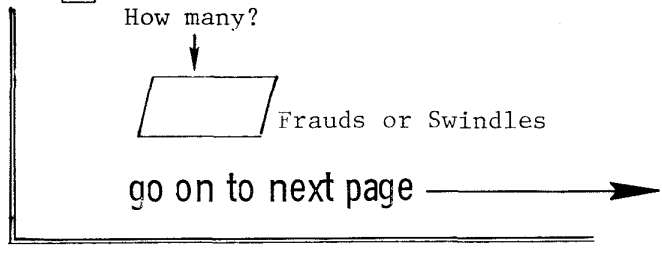
2. In all, how many frauds or swindles did you do?

11 OR MORE

1 TO 10
How many?

9/

3. Look at the total street months on the calendar. During how many of those months did you do one or more frauds or swindles?



10
''/

_____ Months

12
''/

4. In the months when you did a fraud or swindle, how often did you usually do them?

(CHECK ONE BOX)

EVERYDAY OR ALMOST EVERYDAY

How many per day?

How many days a week usually?

14/
15
''/
17/

SEVERAL TIMES A WEEK

How many per week?

18/
19
''/

EVERY WEEK OR ALMOST EVERY WEEK

How many per month?

21/
22
''/

LESS THAN EVERY WEEK

How many per month?

24/
25
''/

5. How many of these frauds or swindles were you arrested for? (Include all of the times you were arrested for doing a fraud or swindle even if you were charged with something else.)

_____ Arrests for frauds or swindles

27
''/

- X. 1. During the STREET MONTHS ON THE CALENDAR did you ever deal in drugs?
That is, did you make, sell, smuggle or move drugs?

YES ₁

NO ₂ ➔ go on to page 36

29/

2. In all, how many drug deals did you do?

11 OR MORE



1 TO 10
How many?



Drug Deals

30/

3. Look at the total street months on the calendar. During how many of those months did you do one or more drug deals?

_____ Months

go on to next page ➔

31
''/

33
''/

4. In the months when you did drug deals how often did you usually do them?

(CHECK ONE BOX)

EVERYDAY OR
ALMOST EVERYDAY

How many
per day?

How many days
a week usually?

35/
36
''/
38/

SEVERAL TIMES
A WEEK

How many
per week?

39/
40
''/

EVERY WEEK OR
ALMOST EVERY WEEK

How many
per month?

42/
43
''/

LESS THAN
EVERY WEEK

How many
per month?

45/
46
''/

5. How many of these drug deals were you arrested for?

_____ Arrests for drugs

48
"/

6. What kind of drugs did you deal? (Check all that apply.)

- Heroin
- Methadone
- Uppers
- Downers
- Cocaine
- Marijuana
- PCP/Angel Dust
- Other, what? _____

50/
51/
52/
53/
54/
55/
56/
57/

XI. 1. This is a list of reasons men have given for doing crimes. Go through the whole list and show how important each reason was for the crimes you did during the STREET MONTHS ON THE CALENDAR. (Circle a number for each reason.)

	<u>Did Not Happen/Does Not Apply</u>	<u>Not Important At All</u>	<u>Slightly Important</u>	<u>Somewhat Important</u>	<u>Very Important</u>	
Losing your job.....	0	1	2	3	4	58/
Heavy debts.....	0	1	2	3	4	59/
Good opportunity.....	0	1	2	3	4	60/
Couldn't get a job...	0	1	2	3	4	61/
Revenge or anger.....	0	1	2	3	4	62/
Excitement and kicks.	0	1	2	3	4	63/
To get money for good times and high living.....	0	1	2	3	4	64/
Friends' ideas.....	0	1	2	3	4	65/
To get money for drugs.....	0	1	2	3	4	66/
To get money for rent, food, self support.....	0	1	2	3	4	67/
Just felt nervous and tense.....	0	1	2	3	4	68/
Blew up--lost your cool.....	0	1	2	3	4	69/
Because you had taken drugs.....	0	1	2	3	4	70/
Because you had been drinking.....	0	1	2	3	4	71/

2. Again look at the calendar. During the STREET MONTHS ON THE CALENDAR how much of your total income came for crime?

- 0 0%
- 1 Less than 10%
- 2 10% to 25%
- 3 25% to 50%
- 4 More than half

3. In a typical month during the STREET MONTHS ON THE CALENDAR, about how much money did you make from all your crimes?

\$ _____ per month

8
'''/

4. Look at the calendar. During the STREET MONTHS ON THE CALENDAR, how many times were you arrested for each of the following crimes? Count an arrest even if you did not actually do the crime you were arrested for. (Check NONE if not arrested for that crime.)

BURGLARY _____ arrests OR NONE CO

12
'''/

ROBBERY OR ARMED ROBBERY _____ arrests OR NONE

14
'''/

ASSAULT, AGGRAVATED ASSAULT OR ASSAULT WITH A DEADLY WEAPON _____ arrests OR NONE

16
'''/

MURDER OR MANSLAUGHTER _____ arrests OR NONE

18
'''/

AUTO THEFT, MOTOR VEHICLE THEFT _____ arrests OR NONE

20
'''/

THEFT, GRAND THEFT, LARCENY OR GRAND LARCENY _____ arrests OR NONE

22
'''/

FORGERY, USE OF A STOLEN OR BAD CREDIT CARD OR BAD CHECK PASSING _____ arrests OR NONE

24
'''/

FRAUD _____ arrests OR NONE

26
'''/

SELLING DRUGS, POSSESSING DRUGS FOR SALE, OR TRANSPORTING DRUGS _____ arrests OR NONE

28
'''/

5. The questions on this page are only for men who did a burglary (break-in), robbery, theft, car theft, forgery, fraud or swindle during the STREET MONTHS ON THE CALENDAR. Did you do any of these crimes during these months?

YES ₁
↓

NO ₂ → go on to next page →

30/

When you did these crimes, how often did you do each of the following things? (Circle one number next to each line listed.)

	<u>Never</u>	<u>Sometimes</u>	<u>Usually</u>	<u>Always</u>	
Worked out a plan for the crime before you went out to do it.....	0	1	2	3	31/
Found places or persons with a lot of money.....	0	1	2	3	32/
Learned about alarms, hours, or money transfers.....	0	1	2	3	33/
Decided to do the crime on the spot..	0	1	2	3	34/
Worked out an escape plan before doing the crime.....	0	1	2	3	35/
Got special equipment such as burglary tools.....	0	1	2	3	36/
Worked with partners.....	0	1	2	3	37/
Lined up a fence or buyer before the crime.....	0	1	2	3	38/
Used tips to line places up.....	0	1	2	3	39/
Only cased a place or person just before the crime.....	0	1	2	3	40/
Stole a car or got a gun that could not be traced.....	0	1	2	3	41/
Followed a person to a safe place to do the crime.....	0	1	2	3	42/

6. These questions are only about the crime(s) for which you are now serving a sentence. What charge(s) were you convicted of that you are serving time for now? (Check all that apply.)

- Assault/ADW
- Auto Theft/Vehicle Theft
- Burglary
- Drug Possession
- Drug sales
- Forgery/Bad check/Bad credit card
- Fraud or Swindle
- Kidnapping
- Murder/Manslaughter
- Possession or receiving stolen property
- Rape
- Robbery
- Sex offense (other than rape)
- Theft/Grand theft/Larceny
- Weapons charge
- Other, what? _____

7. For these convictions, what crimes, if any, do you think you really did? (Check all that apply.)

- Assault/ADW
- Auto Theft/Vehicle Theft
- Burglary
- Drug Possession
- Drug sales
- Forgery/Bad check/Bad credit card
- Fraud or Swindle
- Kidnapping
- Murder/Manslaughter
- Possession or receiving stolen property
- Rape
- Robbery
- Sex offense (other than rape)
- Theft/Grand theft/Larceny
- Weapons charge
- Other, what? _____
- Did no crime

8. Do you think you could do the same crime(s) again without getting caught?

NO _1

YES _2 ➔ How many times?

_____ times

8/

9

'''/

9. Did you have a weapon during the crime(s)?

NO _1

YES _2 ➔ What weapon?

(Check all that apply)

_1 Hand gun

Knife

Rifle/shotgun

Other, what? _____

12/

13/

14/

15/

16/

10. Did you hurt or kill anyone during the crime(s)?

NO _1

YES _2 ➔ How many? _____ Persons

17/

18

'''/

11. When you described your crimes during the STREET MONTHS ON THE CALENDAR, did you include any of the crimes you are now doing time on?

_1 Yes

_2 No

_3 Some but not all

20/

12. How long have you served on your present sentence?

_____ Years and/or _____ Months

21

''''/

13. How long do you think you have left to serve on your present sentence?

_____ Years and/or _____ Months

26

''''/

14. Again look at the calendar. During the STREET MONTHS ON THE CALENDAR, altogether how many times did you do each of the following:

a. Beat or physically hurt someone badly.

0 ₀ 1-2 ₁ 3-5 ₂ 6-10 ₃ More than 10 ₄

31/

b. Hustled or conned someone.

0 1-2 3-5 6-10 More than 10

32/

c. Cut someone with a knife or shot someone with a gun.

0 1-2 3-5 6-10 More than 10

33/

d. Burglary--broke into a home or business in order to take something.

0 1-2 3-5 6-10 More than 10

34/

e. Threatened to hurt someone with a gun, knife or other weapon.

0 1-2 3-5 6-10 More than 10

35/

f. Tried to kill someone.

0 1-2 3-5 6-10 More than 10

36/

g. Forged a check or other paper.

0 1-2 3-5 6-10 More than 10

37/

h. Stole a car.

0 1-2 3-5 6-10 More than 10

38/

i. Sold hard drugs.

0 Less than 10 Less than 50 Less than 100 More than 100

39/

The questions on this page are about a different time period, the two years just before the calendar.

1. Look at the calendar again. What was the earliest year you wrote on the calendar (the year before you were arrested)?

19 ____

2. In the box on this page write the two years just before that year: →

From 19 ____ to 19 ____

3. The next questions are about the two years you just wrote in the box. Think about what you were doing during those two years as you answer the next questions.

4. How old were you at the beginning of these two years?

____ Years Old

5. Did you do any time in a prison, jail or juvenile institution during these years?

Did no time

OR

1-6 months

7-12 months

13-18 months

19-23 months

all 24 months

6. At any time during these years were you married or living with a girlfriend for more than a month?

YES

NO

7. During these years did you have a job for more than a month?

YES

NO

8. Did you use drugs (other than marijuana)?

YES

NO

9. During these years did you do any of the following crimes? (*Check all that apply*)

Burglary

Theft

Robbery of businesses

Car theft

Robbery of persons

Forgery (Credit Cards/
Checks)

Assault during a robbery
or burglary

Fraud or Swindle

Assault/ADW

Drug deals

Did none of these crimes

The questions on this page are about an even earlier time period, the two years before those you described on the last page.

10. Look at the BOX you filled in on the page just before this. What is the earliest year in that box?

19 ____

11. In the box on this page write the two years just before that year: From 19 ____ to 19 ____

12. Now think about what you were doing during these two years as you answer the next questions.

13. How old were you at the beginning of these two years?

____ Years Old

14. Did you do any time in a prison, jail, or juvenile institution during these years?

- _0 Did no time **OR** 1-6 months
- 7-12 months
- 13-18 months
- 19-23 months
- all 24 months

15. At any time during these years were you married or living with a girlfriend for more than a month?

- _1 YES _2 NO

16. During these years did you have a job for more than a month?

- _1 YES _2 NO

17. Did you use drugs (other than marijuana)?

- _1 YES _2 NO

18. During these years did you do any of the following crimes? (Check all that apply.)

- Burglary Theft
- Robbery of businesses Car theft
- Robbery of persons Forgery (Credit Cards/ Checks)
- Assault during a robbery or burglary Fraud or Swindle
- Assault/ADW Drug deals
- Did none of these crimes

8
10
14
16/
17/
18/
19/
20
22
24
26
28
30/

PART E

1. How old were you on your last birthday?

_____ Years old

31
''/

2. What is your race?

- ₁ Asian
- ₂ Black
- ₃ Chicano/Latino
- ₄ Indian/Native American
- ₅ White
- ₆ Other

33/

3. What is the highest grade you finished in school?

- ₀ No schooling
- ₁ 6th grade or less
- ₂ 7th - 9th grade
- ₃ 10th - 11th grade
- ₄ High school graduate
- ₅ Some college
- ₆ College graduate
- ₇ Post graduate study

34/

4. At the present time, are you: (check one)

- ₁ Married
- ₂ Widowed
- ₃ Divorced
- ₄ Separated
- ₅ Never married

35/

5. How many times have you been married?

₀₀ Never **OR** _____ Times

36
''/

6. Are you serving a jail term or a prison term at this time?

Jail ₁

Prison ₂ **go on to page 46**

38/

That is the end of the survey. Thank you for participating. Please put the survey in the envelope and seal it.

Exhibit E.1

CALENDAR FOR CALCULATING STREET MONTHS

INSTRUCTIONS FOR USING THIS CALENDAR ARE INCLUDED IN THE SURVEY.

Winter		Spring			Summer			Fall			
January	February	March	April	May	June	July	August	September	October	November	December
		X	X	X							

1977
YEAR BEFORE
ARRESTED

January	February	March	April	May	June	July	August	September	October	November	December
					X						

1978
YEAR
ARRESTED

include
this
month

STREET MONTHS
ON THE CALENDAR → 15



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