FINAL REPORT

Offender Careers and Restraint: Probabilities and Policy Implications

Marvin E. Wolfgang, Director

James J. Collins, Jr., Research Director

Center for Studies in Criminology & Criminal Law

University of Pennsylvania

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INTRODUCTION

The central task of this report is to measure the crime prevention effect of incarceration which derives purely from the restraint of offenders, i.e., the curtailment of offenses due to confinement. To measure this effect we use longitudinal data for a cohort of males born in 1945. The data include information about officially recorded police contacts, self reports of offenses and dispositional outcomes from the juvenile and adult justice systems. Data were gathered at three stages. Official record sources were used at each stage and interviews of the subjects were conducted at the second stage.[1] To measure restraint we develop two models, each of which contains two major terms. One of these terms estimates annual and age specific offense rates for index offenses. The estimates are derived from official and self reported measures.

The second major term of our restraint models is one that measures the performance of the justice system. By computing, singly and collectively, the probabilities of conviction and incarceration and the length of incarcerated time served by offenders, we measure the level of efficiency by restraint of the criminal justice system. The product of these two major terms

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[1]See Appendix A for a description of the activities at the three research stages.

(offense rate and criminal justice system performance) and an estimate of the number of offenders who come in contact with the criminal justice system allows us to estimate how many offenses are prevented by incarceration.

Restraint = Offense Rate x Justice System Performance x Number of Offenders

In Chapter III we discuss the assumptions of the model and present formulas and derivations.

Before we present the models we discuss and define deterrence in Chapter I. In Chapter II we specify the offense patterns of the cohort offenders and examine the validity of our measures of offense behavior. In Chapter IV we give the results of the application of our models to the longitudinal cohort data and discuss these findings.

In the final chapter we deal with the policy implications of our findings. If the philosophy and operations of the criminal justice system were to be based solely on considerations of efficiency, and if criminal justice decisions at one point in the system did not affect the entire system, the policy implications of our data would be relatively clear. Our models allow us to specify offender groups and system foci where intervention for

purposes of crime control would provide maximum return. But because of system-wide reaction to change and beacuse penal policy is not characterized by a clear consensus or determined in a political vacuum, policy implications are not straightforward. In the last chapter we attempt to set our findings into the complexities which need to be accommodated when policy implications are gleaned from research findings.

CHAPTER 1

RESTRAINT AS DETERRENCE

A. DEFINITION OF RESTRAINT

Deterrence, though long a philosophy and goal of criminal law and penal policy, has recently begun to receive considerable attention from criminologists. The reasons for this current interest and its implications will be discussed later in this chapter. First we wish to discuss it generally and set our notion of restraint within its conceptual framework. "Deterrence can be thought of as the omission of an act as a response to the perceived risk and fear of punishment for contrary behavior" (Gibbs, 1975:2). The "acts" referred to are criminal--the "punishments" legal. There is commonly a distinction made between general and specific or individual deterrence (Andenaes, 1952; Zimring, 1971; Gibbs, 1975:34). The latter applies to individuals who have experienced penal sanction and is defined by Gibbs, whose definitional precision on the deterrence issue we generally prefer as

> the omission or curtailment of some type of criminal activity by an individual throughout a period because in whole or in part he or she has been accused of a crime for which someone was punished, and he or she is therefore unwilling to risk someone being punished again.[1] (Gibbs, 1975:34)

For Gibbs the central notion in deterrence is the "fear of

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[1]The term "someone" is used to take account of the situation where the punishment of another party influences the perpetrator to discontinue or reduce his own illegality. Presumably when punishment is meted out, most of the time it will be applied to the guilty party.

punishment." Thus he would not include crime reduction attributable to the restraint (e.g., incarceration) of offenders as deterrence (1975:38-39). The restraint phenomenon, called "removal effect" (Clarke, 1975) or incapacitation (Wilson, 1973, 1976; Greenberg, 1975; Shinnar and Shinnar, 1975), is not adequately treated on the conceptual level. Zimring and Hawkins (1973:70-74), for example, are not clear about whether this effect is to be considered deterrence. On the one hand they say "the central concept [in deterrence] is that of threat" (1973:7) and presumably it is not the notion of threat but the exercise of control that is central to removal or incapacitation. On the other hand they speak about this form of crime reduction (1973:58) and later about "net deterrent effect" (1973:71) so that it is not clear if they mean restraint to be considered a form of deterrence.

We consider the distinction between general and specific deterrence to be appropriate and useful. We will depart from some previous usage and conceptualize specific deterrence to be of three forms: restraint, incapacitation, and dissuasion. Our major departure is in the distinction we make between restraint and incapacitation. We define the former as the reduction or elimination of illegal activity which results from the control of an individual offender by surveillance or incarceration by the criminal justice system during the period that surveillance or control is being carried out. Probation and parole are examples of surveillance. In contemporary America the

major restraint mode is incarceration; other such forms of restraint may be carried out by criminal justice system supervision and semi-institutional programs like half-way houses or work release programs.

Incapacitation is defined as intervention by the criminal justice system to alter the physical, organic or psychological state of an individual so that he or she is rendered permanently or temporarily unable to carry out some or all forms of illegal behavior. Examples are capital punishment, castration, lobotomy and potentially some forms of drug intervention or behavior modification. The key word in this definition is unable--an incapacity must exist.

We reject the criminological usage and meaning of the term incapacitation which has developed over the last five years. It is connotatively and denotatively inaccurate in its reference to the phenomenon at issue--inaccurate in both its common and legal usage.[2] The notion of incapacity suggests the lack of power or ability and implies disability; we reserve its use for that condition. The concept of restraint, on the other hand, implies the notions of hindrance,

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[2]The general and legal definitions of the two terms are instructive. General usage: (a) incapacitate--to deprive of capacity; make incapable or unfit; disqualify; (b) restrain--to hold back from action; keep in check or under control (Random House Dictionary of the English Language [New York: Random House, 1969], unabridged ed.). Legal usage: (a) incapacity--want of capacity; want of power to take or dispose; want of legal ability to act (903); (b) restraint--confinement, abridgment or limitation; prohibition of action; holding or pressing back from action; hindrance, confinement or restriction of liberty (1477) (Black's Law Dictionary, 4th ed. [St. Paul, Minn.: West Publishing Company, 1957]).

confinement, abridgment and limitation. We maintain the proposed conceptualization is more accurate and precise.[3] In addition to being more precise, the heuristic capacity of restraint is superior to that of incapacitation. Restraint has been used ambiguously to refer to that narrow range of crime preventive action attributable to incarceration. Our usage will allow conceptual integration of the less drastic forms of criminal justice system control under the restraint concept. This form of specific deterrence will not be an all or none phenomenon; the degree of restraint will depend on the type of criminal justice system intervention. Unsupervised probation would represent one extreme--incarceration in a maximum security prison the other. Introduction of the distinction between restraint and incapacitation is not only more accurate, but will permit more exact empirical analysis and theoretical development.

The third form of specific deterrence is dissuasion. It is defined as that reduction in or elimination of illegal behavior by an individual who has been convinced or persuaded by criminal justice system action personally experienced. An individual is dissuaded from illegal activity when he is convinced to so refrain by punishment applied to him as a result of a violation of law. The elements

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[3]Martinson (1975:4) makes a distinction between restraint and incapacitation which differs from the one made here. He "conceive[s] of incapacitation as an effect which can result from applying restraint to identifiable persons" (emphasis in original). Although he attempts to deal with the inaccuracy, he fails to deal with the basic problem.

of threat or fear of punishment, as with general deterrence, again become relevant. With general deterrence, individuals are convinced by the threat of unexperienced punishment; those convinced to refrain because they have experienced such punishment and wish to avoid experiencing it again have been specifically deterred.

In our definition of restraint we have departed from some recent usage in the literature. In the extant research on this effect we find no formal definition of the concept. We do find considerable lack of precision in the use of the term.[4] The authors take care to point out that "incapacitation" needs to be distinguished from deterrence but because they fail to define terms, the distinction is often not maintained. On the empirical level, restraint (incapacitation, removal) is precisely defined (usually by formula) in those studies which attempt to measure its effect on crime levels (Greenberg, 1975; Shinnar and Shinnar, 1975; Wilson and Boland, 1976). But both conceptual and empirical precision are required if our understanding of the relationships between deterrence, crime and the criminal justice system is to increase.

The necessity of distinguishing general deterrent and restraint effects has been noted here and elsewhere (Ehrlich, 1973; Martinson, 1975:71; Wilson and Boland, 1976:202). Much recent research has found that an inverse relationship exists between the crime rate and the certainty of punishment—usually measured by the probability of imprisonment

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[4]Clarke (1975:528-529) and Greenberg (1975:541-542) provide examples of this imprecision.

(Antunes and Hunt, 1973; Bean and Cushing, 1971; Block and Lind, 1975; Chauncey, 1975; Logan, 1975; Tittle, 1969; Tittle and Rowe, 1974). But none of this research has adequately distinguished the effects of general deterrence and restraint; the suppressing effect that imprisonment has on the crime rate could be solely the result of the latter. This tendency for the two effects to be confounded also argues for viewing them within the same general conceptual framework while maintaining the distinction between them. In the empirical world their effects are often displayed through the same phenomenon (crime). In one way general deterrence and dissuasion resemble each other; their operant dynamic is fear or threat. In another sense, restraint and incapacitation are similar to each other---their effects result directly from the application of criminal justice system sanction. These similarities and distinctions make it obvious that the phenomena under consideration need to be distinguished from each other on both conceptual and empirical levels. Work has taken place on both qualitative and quantitative levels in recent studies of deterrence; research on restraint has been only quantitative--perhaps under the illusion that its meaning is obvious. Our conceptual position has been specified. We will use the Philadelphia cohort data in two models to estimate the magnitude of restraint. We believe it will be fruitful to view our estimates as measures of one form of specific deterrence.

B. FAILURES, DEVELOPMENTS AND FISCAL REALITIES

The study of deterrence lies at the interface of social science and social policy. To develop systematic knowledge about the former is to propose policy alternatives at the same time. For this reason and because a more specific discussion of policy implications will follow in the final chapter, we wish to take time now to trace the recent sociological history of deterrence. It is not fortuitous that interest in deterrence and restraint have recently emerged as lively criminological issues. We believe there are several political, social and scientific convergencies associated with this current interest.

Three "failures" are relevant. First, the inability of criminologists to develop an explanation of criminal behavior which is fertile and pragmatic for policy and application is important. There is certainly no such etiological theory and there may never be. But in the optimism of earlier times it was expected that one would soon emerge. Second, politicians and policies which promised too much have also failed. The dominant political ideology of the 1960s, which believed that the "crime problem" would succumb to expertise and resource commitment as successfully as had the space program to a comparable effort, has been discredited for failing to meet the expectations created. The war on crime was lost--or it is viewed as unsusceptible to the tactics of a few years ago.

Rehabilitation has also failed. Martinson's 1974 article in The Public Interest marks a watershed in this regard. It was not so much that he, or the results of the research that he participated in (Lipton et al., 1975), broke new ground but that he articulated what had come to be a professional perception at a time when the informed public was receptive and the political climate was right. Bailey (1966) earlier had reached a conclusion about correctional treatment programs very similar to those of Lipton, Martinson and Wilks. For purposes of our discussion here, rehabilitation, the process that was viewed as the best and most humane hope for solving the crime problem was discredited. It is almost beside the point that rehabilitation was a reality mostly at the rhetorical level and was rarely implemented in correctional practice. It was expensive; the crime rate was increasing dramatically; and research showed that it did not work. In addition, both those in favor of rehabilitation and those who favored punishment for offenders found themselves united in opposition to what was taking place under the label of rehabilitation. In microcosm, the hallmark of the medical model, the indeterminate sentence explicates the concerns--neither side liked it. One was opposed to this sentence type because it maximized control over the individual and gave excessive discretion to prosecutors, judges and correctional administrators. The other side disliked it because it apparently disregarded considerations of punishment and retribution.

By the time the middle 1970s arrived, the failure of theory,

the public sector, and rehabilitation to control crime had helped change thinking in professional, public, and private minds.

Several developments of the last decade have also combined to direct attention to deterrence and to facilitate its study. The most influential theoretical development of the last decade in criminology has been control theory (Hirschi, 1969). The original work and subsequent attempts to test and specify it (e.g., Hepburn, 1976; Minor, 1976) make it apparent that this perspective is generally congruent with an emphasis on deterrence.

Two methodological developments have also facilitated the recent interest in deterrence. Deterrence is not easily researched. Periodically, social scientists are presented with a "natural experiment" or "quasi-experimental research design" after a legislative change or judicial interpretation results in a pre-post test situation. But these occasions are relatively rare. Given the complexity of the deterrence issue, the performance of the research had to await the framework within which it would be carried out. Econometric models were that framework. It is no accident that much of the recent deterrence research has been done by economists (Becker, 1968; Ehrlich, 1973; Tullock, 1974). A second methodological development is the increased recent use of the longitudinal research design. These designs provide an opportunity to follow groups of subjects over time and to observe effects of various stimuli--an especially important ingredient for deterrence research.

The creation of the Law Enforcement Assistance Administration (LEAA) under the Omnibus Crime and Safe Streets Act of 1968 also helped to direct attention to the deterrence issue. First, vast amounts of money for crime control became available. In the early years these funds were likely to be spent for operations in the criminal justice system but in recent years substantial amounts are going to universities and research institutes with the expertise to conduct sophisticated research. The idea that research ought to be "policy relevant" has been promulgated by LEAA--encouraged no doubt by messages clearly communicated to them through the appropriations decisions of legislators. Deterrence is clearly a policy relevant research topic and thus more likely to attract research funds.

Deterrence research has been encouraged by another fiscal policy reality. A new economic conservatism has been thrust upon the 1970s by the combined inflation-recession-scarcity syndromes; somewhat paradoxically all three co-exist and encourage an orientation toward cost-benefit analysis and utility notions. The concept of deterrence dovetails nicely with this perceptive style and for this reason also is receiving considerable attention.

Implicit in the previous discussion is the notion that criminological work has not, and does not, take place in a vacuum. Beliefs and interests intrude. This is not to deny the possiblity of a scientific approach to the study of deterrence, but to remind ourselves and the reader that ours is not a value-free enterprise and to underline thereby the importance of a rigorous methodology and critical eye.

Contemporary penal policy can be characterized by the combined ideological orientations of pragmatism and control. This is not to say that other orientations (e.g., equity, humanitarianism) are not also relevant but that the dominant considerations are currently these two. They have emerged in part from the aforementioned failures and developments; they articulate these and previously accumulated knowledge in a manner consistent with the society's past and present structure and organization. In this sense the ideology is both expressive and cumulative. It is also likely to shape our immediate future in the same way as it expresses and processes our past and then, to subsequently give way to a new hybrid.

CHAPTER 2

OFFENSE PATTERNS AND OFFENSE MEASURES

A. OFFENSE PATTERNS OF OFFENDER CATEGORIES

If a small percentage of all offenders is responsible for a high percentage of serious crime and if these offenders are reached by the criminal justice system, implications for crime control are apparent. Concentration on this group may be most efficient and have the largest potential for reducing serious crime. For now we leave the issue of what may be the most appropriate form of intervention aside. It is a well-established criminological finding that recidivism rates tend to be high (Belkin et al., 1972; Bottoms and McClintock, 1973; Glaser, 1969, 1971; Meade, 1973; President's Commission, 1967:46-47; Unkovic and Ducsay, 1969; Warder, 1973). The magnitude of the rate depends on a variety of factors like the definition of recidivism, the length of the follow-up period and the characteristics of the offender group. More precisely, there is a growing body of research indicating there is an identifiable group of chronic offenders (Cockett, 1973; Frum, 1958; Petersilia, 1976; Shannon, 1976; Wolfgang et al., 1972).

In Delinquency in a Birth Cohort (1972:88-105), Wolfgang, Figlio and Sellin established that the chronic offenders (6 per cent of the cohort) were responsible for 51 per cent of all officially recorded police contacts in the juvenile years. They were charged with even

higher percentages of serious crimes. We have now accumulated offense histories to age 30 for this cohort and find the chronic offenders are charged with 74 per cent of all the official crime of our cohort; they account for 84 per cent of the personal injury offenses and 82 per cent of the serious property offenses. Table 2.1 displays one-time offenders (N = 155), recidivists (2-4 offenses, N = 159), and chronic offenders (5 or more offenses, N = 145) in a table by offense type. The figures in the table represent the percentage of offenses in each class by the offender category. About ten per cent (9.79%) are personal and almost one of four (23.7%) are property offenses; two-thirds (66.5%) of all offenses are nonindex.

The offenses of chronic offenders are classified as personal 12 per cent of the time and the number of personal offenses they commit is almost nine times higher than the number committed by recidivists. Only 4 per cent and 5 per cent of the offenses of the one-time offenders and recidivists respectively are personal. The chronic offenders also demonstrate a higher likelihood of committing a serious property offense than do the other two offender groups; 26 per cent of their offenses are so classified compared to 15 per cent and 17 per cent respectively for one-time offenders and recidivists. The nonindex row makes the major point of the table. The offenses of one-time offenders and recidivists are likely to be in the less serious nonindex category about four of five times. The offenses of chronic offenders are so classified less than two of three times. Table 2.1 shows that officially recorded police contacts

TABLE 2.1

OFFENSE TYPE BY OFFENDER CATEGORY: PERCENTAGE OF OFFENSES[a][b]

Offense Type	One-Time Offenders	Recidivists	Chronics	Totals
Personal	3.9 (6)	5.0 (21)	11.5 (192)	9.7 (219)
Property	14.8 (23)	17.3 (73)	26.2 (438)	23.7 (534)
Nonindex	81.3 (126)	77.8 (329)	62.3 (1041)	66.5 (1496)
Totals	100.0 (155)	100.1 (423)	100.0 (1671)	100.0 (2249)

(a) In this and all other tables unless otherwise indicated, personal offenses include homicide, forcible rape, robbery, and aggravated assault. Property offenses include burglary, larceny and auto theft. Nonindex offenses include all others.

(b) In this and all other tables unless otherwise indicated, the number of units on which the percentage is based will be indicated in parentheses.

for chronic offenders are much more frequent and likely to be for more serious offenses than the recorded contacts for the other two offender groups.

Table 2.2 looks at the three offender groups on several dimensions of offense seriousness. The offenses of the chronic offenders are more likely than those of the other two offender groups to involve the offense ingredients of injury, theft, damage to property and presence of a weapon during commission of the offense. The last row of the table displays mean offense seriousness scores using the Sellin-Wolfgang scoring system (Sellin and Wolfgang, 1964). The

TABLE 2.2

PERCENTAGE OF OFFENSES WITH INJURY, THEFT DAMAGE, WEAPON AND MEAN OFFENSE SERIOUSNESS SCORES FOR OFFENDER CATEGORIES

Offense Ingredient	Offense Category: One-Time Offenders	Recidivists	Chronics
Injury	6.5 (10)	9.7 (41)	12.2 (204)
Theft	16.8 (26)	18.7 (79)	30.4 (508)
Damage	10.3 (16)	7.1 (30)	11.1 (185)
Weapon	1.9 (3)	2.9 (12)	6.9 (116)
Mean Seriousness Score	148 (141)	164 (398)	275 (1558)

higher the seriousness scores the more serious the offense. The number of victims and the extent of their injuries, dollar amount of loss from theft or damage and other offense ingredients contribute to seriousness scores. On this measure, also, the offenses of chronic offenders are much more serious than those of the other two offender categories. Tables 2.1 and 2.2 show that based on the criteria of offense frequency and on several dimensions of offense seriousness, the chronic offenders are responsible for a large disproportion of official crime.

Table 2.3 is also informative for the policy issue; it indicates probabiliti of recidivism and time between offenses. The probability that a male born in 194

TABLE 2.3

PROBABILITIES OF RECIDIVISM AND TIME BETWEEN OFFENSES BY OFFENSE NUMBER: ALL OFFENSES AND INDEX OFFENSES

Offense Number	Number of Offenders	Probability of Any Offense	Probability of Index Offense	Time Between Offenses (Years)
1	459	.473	.217	
2	304	.662	.266	2.22
3	218	.717	.321	1.51
4	174	.798	.356	1.14
5	144	.828	.333	1.22
6	122	.847	.328	1.07
7	102	.836	.353	1.19
8	91	.892	.385	1.11
9	80	.879	.325	.78
10	72	.900	.416	.75
11	64	.889	.406	.97
12	50	.781	.460	.73
13	45	.900	.555	.84
14	43	.955	.442	.91
15	35	.814	.371	.76
16	27	.771	.370	.86
17	24	.889	.417	.97
18	20	.833	.300	.71
19	18	.909	.722	.38
20	16	.889	.625	.93

who lived in Philadelphia will have an officially recorded police contact for a non-traffic criminal offense is .473 by the age of 30. Of those who have one contact, one-third will not continue; but if an individual goes beyond three, there is a high probability that he will continue. At each of the offense transitions after the third, approximately four of every five offenders are charged with another offense. Further, as the fourth column indicates, the likelihood that an offense will be a serious one increases with offense frequency and remains relatively high after the second offense.

Finally, we present mean seriousness scores by age groupings to indicate the relationship between age and offense seriousness.

Column five of Table 2.3 indicates the amount of time which passes between officially recorded police contacts over offense transitions. There is a clear indication that as offense frequency increases arrests come closer together. More than two years typically passes between the first and second official contact but this time span decreases to less than one year at the eighth contact and remains low up to the twentieth contact. These estimates do not necessarily indicate more intensive criminal activity, as the likelihood that an offense will be officially recorded may change over time. But these estimates do suggest that the elevated tendency toward recidivism which comes with higher numbers of official contacts is not mitigated by any discernible tendency toward decreased offense intensity.

Finally, we present mean seriousness scores by age groupings to indicate the relationship between age and offense seriousness.

TABLE 2.4

MEAN OFFENSE SERIOUSNESS SCORES BY AGE CATEGORIES

Age	Mean Offense Seriousness Score
≤ 13	114 (216)
14-17	110 (842)
18-21	299 (469)
22-25	405 (331)
26-30	517 (239)
Overall	246 (2097)

As age increases the seriousness of offenses increases. In the juvenile years scores remain relatively low and stable. In the early adult years the scores increase by a factor of about 2.5 and continue to increase up in the next two age groupings by more than 100 points each time.

Based on the evidence provided in the four previous tables we can summarize as follows: there is a group of offenders (14.9% of the total sample or 31.4% of the offender population) which is responsible for 80-85 per cent of serious crime. There is a high probability that these offenders will continue offending seriously and intensively. Since our later task is specifying the probable effect of a particular crime control strategy, we need not press our analysis further here. In Appendix B we do provide some additional data about offender categories and race. If we were interested in theoretical development we would wish to look at the relationships between the observations we have made and other variables, but that is not our goal. We have clearly established from our data that there is a group of offenders which would appear to be a logical focus of crime control efforts.

B. VALIDITY OF OFFICIAL STATISTICS

Since our conclusions here and the policy implications we may specify are derived largely from official crime statistics, we need to examine the validity of those data. It is well known that official arrest data are an incomplete measure of the real incidence of crime. Victimization surveys suggest that its actual incidence is three to five times higher than official figures indicate (U.S. Department of Justice, 1976a, 1976b). In addition to the fact that official crime statistics understate the incidence of criminal behavior, there are a variety of other problems (for a comprehensive critique of official crime statistics see Wolfgang, 1963). There is a voluminous literature dealing with official crime figures--much of it critical and much of it suggesting caution when using official data for research purposes. Only a small segment of this literature deals with the question of bias at the arrest stage and for us this is one of the crucial questions. If those arrested are a representative sample of all offenders, overall and within offense categories, then the incompleteness of official data is not so serious. Other inadequacies aside, official data could be used as a basis for generalization. But if arrested robbery or burglary offenders are a biased sample of those who rob and burglarize, then generalization is problematic and policy implications ambiguous.

Available evidence is not conclusive but it does not support the claim of no bias. Whether or not an arrest takes place is partly dependent on such things as preference of the complainant, the suspect's

attitude and demeanor, race and situational variables (Black, 1970a, 1970b; Piliavin and Briar, 1964). Legal factors like seriousness of the offense and suspect's prior record normally outweigh the non-legal ones but one is tempted to conclude that some of the variation in arrest rates is dependent on the non-legal factors and further that this would operate to the disadvantage of the least powerful in the society. De Fleur-Nelson (1975, 1976) claims, on the basis of an analysis of drug arrests over three decades in Chicago, that the arrest data are systematically biased (1975:102). In a recent paper, Hepburn (1978) presents data that he claims support the hypothesis that "nonwhites are more likely than whites to be arrested under circumstances that will not constitute sufficient grounds for prosecution." Because of the above evidence and because we make extensive use of official data here, we need to examine the issue for Philadelphia police data. Specifically, we address the question of whether or not nonwhite offenders are more likely to be arrested given the commission of an offense than are whites. If racial bias operates at the arrest stage, then building policy from official data would exacerbate the injustice.

A partial test of whether or not those arrested are representative of all offenders would compare the characteristics of offenders as reported by victims with offender characteristics as reported in police data. If victimization data, for example, indicate that 80 per cent of the robberies are commited by nonwhites and police data show the same racial breakdown for arrested robbers,

we have some evidence that the official data are representative. On the other hand, if the racial proportions are not approximately equal, we would have some evidence to support the hypothesis that official statistics are biased.

We will not be able to evaluate fully the representativeness of official offenders. To do that we would need to be more certain about the reliability and validity of the victimization survey data. We would also need to control for other sources of variation such as circumstances of the offense. But we will make the above comparison to accumulate data which will suggest to what extent (if any) we must qualify the implications we derive from the use of official data sources. If our data suggest the probability of bias we will estimate the direction and degree of that effect. If our data suggest no bias exists with official data--i.e., there is an equal probability for all that arrest will follow the commission of a comparable offense--then the policy implications we derive from official data can be more direct and less conditional.

Table 2.5 displays percentages of forcible rape, robbery and aggravated assault offenses attributed to nonwhite offenders by Philadelphia Police Department statistics and by victimization survey data.[1] During the latter survey, individuals were asked to provide information about offenders who victimized them; they were

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[1]The Philadelphia police data were provided by Chief Inspector James Herron. The victimization data were secured from computer tapes created by Dualabs, Inc., Arlington, Virginia.

TABLE 2.5

PERCENTAGES OF NONWHITE OFFENDERS FOR RAPE, ROBBERY AND AGGRAVATED ASSAULT OFFENSES FOR PHILADELPHIA, 1972 AND 1974: POLICE DATA AND VICTIMIZATION SURVEY DATA (OFFENDERS ≥ 21)[a]

Offense Type	1972		1974	
	Police	Victim Survey	Police	Victim Survey
Rape	84.9 (220)	76.2 (16)	87.0 (295)	69.2 (14)
Robbery	89.2 (1392)	91.5 (381)	89.6 (1353)	85.0 (228)
Aggravated Assault	83.1 (1268)	58.7 (252)	81.1 (1461)	52.9 (202)

[a]The cell percentages are adjusted for the universe, i.e., depending on these characteristics and the characteristics of the interviewed sample, the percentages are adjusted to reflect what the percentage would be in the former. The N's in the cells are not adjusted; they are real numbers so the reader can see the actual number of cases in a given cell (National Crime Survey, n.d., p. 22).

asked to estimate if the offender was over or under 21 and what his race was.[2] We may make some judgment about whether or not racial discrimination exists at the arrest stage by comparing the police and victimization percentages within offense categories. For the

[2]In many cases victims were unable to provide either one or both of these bits of information; the unknown cases are excluded from the tables, but they are included in computing percentages. In those cases where offender race was known but offender age was not, we can get some idea of whether or not these characteristics were proportionately different from their distribution in the "known" cases. There is no evidence to indicate that unknown cases differ systematically from known cases. Racial breakdowns for the former are approximately equal to these breakdowns for the latter.

year 1972[3] police data indicate 84.9 per cent of the rapes in Philadelphia were committed by nonwhites; 76.2 per cent of the victim-reported rapes were committed by nonwhites. In 1974, 87 per cent of rapes were officially charged to nonwhites; victims collectively reported that 69.2 per cent were committed by nonwhites. If we can assume the victimization rates are racially representative, the data suggest such bias operates at the arrest stage. Nonwhites are more likely to be arrested when they commit the crime of rape. We will come back to this later.

The robbery data indicate that according to both police and victimization data nonwhites committed between 85 and 91.5 per cent of these crimes in Philadelphia during 1972 and 1974. In the earlier year they were arrested for proportionately fewer of these crimes than they are reported to have committed; in the later year they were arrested proportionately more often. The percentages separating official and victim data are not substantial--2.3 per cent for 1972 and 4.6 per cent for 1974. These data do not support a conclusion that racial bias operates at the arrest stage for the crime of robbery in Philadelphia. Percentage differences are not high and results are contradictory for the two years.

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[3]Victimization surveys were conducted during early 1973 and 1975 and respondents were asked to report victimizations from the previous twelve months. Therefore there is not an exact correspondence between the time periods covered by the two data sets. If an individual was interviewed on February 1, 1973, he was reporting victimizations from February 1, 1972 through January 31, 1973. We do not believe this lack of comparability to be important.

The data suggest nonwhites are more likely to be arrested given the commission of an aggravated assault. The Philadelphia police data show 83.1 per cent of the arrests in 1972 and 81.1 per cent in 1974 for this crime were of nonwhites. The victimization data indicate nonwhites commit 58.7 per cent and 52.9 per cent respectively of these crimes for the two years. The disparity between the police and victimization percentages is substantial--24.4 per cent for 1972 and 28.2 per cent and approximately equal for the two years. This provides strong support, other things being equal, for concluding that the arrest process discriminated against nonwhites for the crime of aggravated assault in Philadelphia for these two years.[4]

There are some differences between police and victimization data. The latter, for example, do not include events where the victim was less than twelve years old. There is also a difference between the two data sources on the basis of unit count. The police record events; victimization data count victims. In spite of these differences the general conclusions already stated are probably valid. They would be inaccurate only if the racial distribution of offenders was substantially different where victims are under twelve years of age, and/or where multiple victims are involved. We are not aware of any evidence that would support the existence of such differences.

It is possible that the differential racial likelihood of being

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[4]The white-nonwhite difference cannot be explained by differential reporting tendencies. A higher percentage of aggravated assaults where the offender is nonwhite are not reported to the police so we would expect whites to be arrested proportionately more frequently than nonwhites. But this is not the case.

arrested given the commission of a rape or aggravated assault in Philadelphia is the result of offense characteristics. If, for example, the nonwhite offenses are more serious than those committed by whites, then the arrest figures may be reflecting offense seriousness--not racial bias. Accordingly, we compare the data for the three offenses on three dimensions of offense seriousness across the races. We interpret presence of a weapon, injury to the victim, and an offender who is a stranger to the victim as indicating a more serious offense. Table 2.6 compares the offenses of whites and nonwhites for the two years. The percentages of offenses involving use of a weapon, injury to the victim, and an offender who was not known to the victim are indicated in the cells.

Results are not consistent for the three offense types. With rape there is evidence to suggest the differences for the races between police and victimization data may be explained by the seriousness of nonwhite offenses. For both years, across all three offense ingredients, nonwhite offenses are more serious. They use weapons more often; their victims are injured more frequently and they are unknown to their victims more often than offenses involving white offenders. This may explain why nonwhites are overrepresented in police figures compared to the victimization survey figures. Another factor is relevant. The raw number of rapes reported by respondents is low. From Table 2.5 it can be seen that 16 and 14 victimizations were reported with nonwhite offenders for 1972 and 1974, and the victim-reported white offender rapes number only five for each of those

TABLE 2.6

VICTIMIZATION DATA FOR 1972 AND 1974: PERCENTAGES OF RAPE, ROBBERY AND AGGRAVATED ASSAULT OFFENSES IN PHILADELPHIA INVOLVING USE OF A WEAPON, INJURY TO VICTIM AND STRANGER-OFFENDER--WHITES AND NONWHITES (OFFENDERS ≥ 21)[a]

	1972					
	White			Nonwhite		
	Use of Weapon	Injury to Victim	Stranger-Offender	Use of Weapon	Injury to Victim	Stranger-Offender
Rape	20 (1)	20 (1)	60 (3)	50 (8)	25 (4)	76 (12)
Robbery	46 (13)	14 (4)	88 (24)	59 (243)	33 (115)	82 (325)
Aggravated Assault	49 (91)	37 (64)	51 (91)	43 (114)	32 (75)	64 (158)
	1974					
Rape	20 (1)	21 (1)	23 (3)	37 (5)	66 (9)	72 (10)
Robbery	49 (19)	33 (14)	84 (32)	63 (151)	30 (64)	92 (211)
Aggravated Assault	33 (69)	29 (59)	77 (126)	52 (112)	29 (51)	56 (119)

[a]See note for Table 2.5.

years. Numbers are even smaller in the cells of Table 2.6 so that given these numbers and the findings of the two tables considered together, there is no judgment possible about the presence or absence of racial bias at the arrest stage for the offense of rape in Philadelphia for the years 1972 and 1974.

The data previously presented for robbery from the two sources do not support a judgment of bias at the arrest stage against nonwhites. The more detailed tables indicate mixed results on the question of comparative offense seriousness for the races. In both years nonwhites use weapons more frequently but on the two other dimensions the results differ depending on year. In 1972, nonwhites injured their victims more frequently but whites were strangers to their victims more often. In 1974, whites were more likely to injure their victims than nonwhites, but nonwhites were not known to their victims more often. There is no evidence in this table to cause us to change our interpretation of the results of the previous table. There is little or no evidence to suggest racial bias operated at the arrest stage for robbery during these two years in Philadelphia.

There is little support in Tables 2.5 and 2.6 for the claim that the observed race disparities for aggravated assault are explained by the seriousness of nonwhite assaults compared to those of whites. Results are mixed, but taking the six racial comparisons over both years the offenses of whites are more serious in three cases, nonwhites twice, and there is one tie. There is a strong indication in our data to support a conclusion that racial bias against nonwhites

exists at the arrest stage for the years at issue in Philadelphia for the offense of aggravated assault. It is substantial (disparities of 24.4 per cent and 28.2 per cent for the two years) and not explained by the ingredients of offense seriousness we examined here. We will discuss the implications of the findings in this section at the end of this chapter.

C. THE SELF-REPORT DATA

The individual crime rate we develop is the sum of officially recorded police contacts and self-reported criminal behavior. The latter reports were gathered during interviews of the cohort sample in 1970; these data need to be evaluated in two ways. First, not all of the offenders were interviewed, but we wish to use mean self-reported index offense estimates developed from the interviewed offenders to estimate numbers of self-reported index offenses for all offenders.[5] The validity of this procedure depends on whether or not the interviewed sample of offenders is representative of all offenders. We will deal with this issue in the next section. The second question to be addressed about the self-report data concerns the validity of these responses as measures of the behavior at issue; this issue will be dealt with in the last part of this section.

Representativeness of Interview Data

When we compare the interviewed and noninterviewed populations on the basis of demographic variables, we find differences. Of the total sample (971), 58 per cent (564) were interviewed; 51 per cent (236) of the offender population were interviewed. An offender was less likely to be interviewed than a nonoffender. Other disproportions on the basis of subject characteristics exist and are in directions we would expect. Whites were more likely to be interviewed than nonwhites; higher SES subjects were interviewed at a higher rate than

[5]See Appendix C for a list of the questions asked in the self-report section of the interview schedule.

lower SES subjects. Between offender categories, the less serious category tended to be interviewed more frequently; 63 per cent (97) of one-time offenders, 53 per cent (85) of recidivists, and 38 per cent (54) of chronics were interviewed. Within these offender groups the demographic variations hold, e.g., 67 per cent (70) of white one-time offenders compared to 50 per cent (21) of nonwhite one-time offenders were interviewed; 52 per cent (16) of upper SES chronic offenders were interviewed compared with 34 per cent (38) of the lower SES chronic offenders.

These systematic differences raise a question of whether or not the interview data can be used as the basis for generalizing to the entire sample. We believe the answer to that question is yes. Our focus is a limited one; we wish to use the self-reported offenses in our restraint model and are interested only in those subjects who have officially recorded police contacts. We will not, for example, be comparing self-reported offense patterns of official and unofficial offenders. Furthermore, since we are interested only in their offense careers, we need to know if interviewed and noninterviewed offenders differ on this dimension. Since we will focus on those who have more than one officially recorded offense, Table 2.7 compares the offensivity of recidivists and chronic offenders on three dimensions for those interviewed and those not interviewed.

Comparison of the mean number of total career offenses across the first row indicates that interviewed and noninterviewed offenders

TABLE 2.7

COMPARISON OF INTERVIEWED-NONINTERVIEWED OFFENDER GROUPS ON MEAN NUMBER OF CAREER OFFENSES, MEAN CAREER INDEX OFFENSES AND MEAN CAREER OFFENSE SERIOUSNESS SCORE

	Recidivists*		Chronics*	
	Interviewed	Noninterviewed	Interviewed	Noninterviewed
All Offenses	2.58 (85)	2.72 (75)	11.89 (54)	11.54 (90)
Index Offenses	.49 (85)	.72 (75)	4.13 (54)	4.07 (90)
Seriousness Score	546 (85)	717 (75)	720 (54)	960 (90)

*None of the differences within offender categories (recidivist or chronic) is significant beyond the .05 level.

do not differ from each other within offender category. Recidivists who were interviewed average 2.58 offenses; noninterviewed recidivists commit 2.72. Chronic offenders who were not interviewed average fewer career offenses than do interviewed chronic offenders. Comparing the average career number of index offenses committed by the interviewed and noninterviewed groups within offender categories also indicates insignificant differences. The difference between recidivists and chronics is substantial, but there is little difference between the interviewed and noninterviewed within offender groups.

In the third row where mean career offense seriousness scores are compared the differences are more substantial. Noninterviewed

recidivists and chronics have substantially higher seriousness scores than do recidivists who were interviewed. This suggests that although interviewed and noninterviewed recidivists and chronics tend to offend with similar frequency in offense classes (the first two rows), the offenses of the noninterviewed groups are more serious. As indicated earlier, seriousness scores are elevated by such offense ingredients as injury to victims, amount of dollar loss and presence of weapons. In spite of these differences within offender category for those interviewed and those not, none of the differences is statistically significant beyond the .05 level. Substantial differences exist between recidivists and chronics on the offense frequency dimensions, but within these groups the interviewed dimension does not account for significant variation. Whatever other differences may exist between the interviewed-noninterviewed groups need not concern us here; they are similar to each other on the major dimension at issue now--their officially recorded offense patterns.

There are at least three types of error which may affect the accuracy of self-report data. These data may be distorted by problems of (1) recall, (2) ambiguity or ignorance, (3) distortion. The first results from the passage of time; memory becomes less accurate. It is not clear whether this type of error would result in over- or underestimates of one's involvement in the forms of illegality at issue here. It is tempting to assume that the passage of time would cause one to forget but we will be dealing here with serious criminal offenses. They may be relatively dramatic events in one's life and

stand out. It is possible that one would overestimate the number of times he committed a particular kind of act. The direction of the error may also be, in part, a function of how often the act is committed. A juvenile who committed three burglaries may estimate (eight or more years later) that he committed ten. A juvenile who committed ten may estimate eight. Recall may also depend on other factors--like whether or not the person was ever punished for the act.

Lack of clarity of the interview questions and/or misinterpretation of or ignorance about the illegal behavior at issue may also introduce error into the self-reports. "Taking money from someone without his knowing it," for example, may be differentially interpreted. One teenager may include removing money from his own home without his parents' knowledge while another may include only serious larcenies from a stranger as such an incident.

A third type of error which may affect self-reports of criminal behavior is distortion. A respondent may consciously exaggerate or hide his criminality. Thus one who reports having seriously assaulted 100 people before the age of 18 is probably in the former category while someone who reports committing no index offenses when he has four such arrests is probably distorting in the opposite direction. It is easier to make conceptual distinctions between types of error than it is to make these distinctions empirically. Analogously, it is one thing to speak about such error and

another thing to measure it. As can be noted from the brief discussion here, there are at least three types of error and all three can result in estimates which are systematically biased in opposite directions (e.g., the one-time offender overreporting and the chronic offender underreporting).

Not much is known systematically about the validity of self-reports of criminal behavior. We will be concerned only with serious offenses in the development of individual offense rates for the restraint models. In this regard two things relevant for us seem to be supported by other research: the accuracy of self-report data is offense specific--serious offenses appear to be underreported--and persistent offenders seem likely to underreport their illegal behavior (Clark and Tifft, 1966; Erickson and Empey, 1963; Gold, 1970; Reiss, 1973). In general then, since we will be concerned here with serious offenses and offenders, it seems most likely that self-reported criminal behavior will be underestimated. If this is the case, our estimate of individual crime rate will be low. As will be seen, this effect is a conservative one for our models.

A straightforward use of self-reports as a measure of real crime may be justified if high correlations were to exist between self-reported and officially recorded offenses across offense types and offender categories. If, for example, a high correlation were found to exist between officially recorded injury offenses committed by chronic offenders as juveniles and the numbers of these offenses chronic offenders report committing as juveniles, we may be justified in using

the self-reports as a measure of the real incidence of this form of illegal behavior. This would be tantamount to assuming (with the correlation for support) that official records understate the injury offense frequency but the official records are likely to be a good indicator of those who actually commit these offenses. If we were to discover that a high correlation existed between the self-reports of index property offenses committed by recidivists as adults and their official records in this regard, then we would have some support for using the self-report data as an estimate of the frequency of adult property offenses committed by recidivists.

Unfortunately this straightforward interpretation is not justified because the correlations which result from the comparisons of self-reported and official index offenses are uniformly low for offense types and offender categories. Overall the correlation between self-reported index offenses and officially recorded police contacts for these offenses is .15. We need to look more closely at the self-report data so that we can make some judgments about their validity.

We may achieve some insight about the quality of our self-report data by making two comparisons: (1) self-reports of arrest with recorded arrests, and (2) self-reports of offenses with recorded offenses. The interview questionnaire asked subjects to report whether or not they had been arrested. Comparison of these responses to official sources provides some indication of the accuracy of these

responses. In about 80 per cent of those cases where a judgment could be made about the accuracy of the interviewees' reports about arrest, the reports were inaccurate (Bridges, 1976: Tables A1 to A4). The direction of the error is also informative. Overall, about half of all offenders underreported their arrests, and, depending on offense or offender classification, between 12 and 46 per cent reported more arrests than the official records indicated. Further, there is an elevated tendency for the more serious offender to underreport his arrests.

We have also compared the self reports of index offenses with official records of them for our subjects. In this case it is not accurate to speak about under- or overreporting on the questionnaire. Respondents were asked to report offenses not discovered by the police, so we are not checking accuracy. But if the two offense estimates are any indication of the involvement in the behavior at issue, their comparison may be informative. We expect that individuals in general will report committing more offenses than they are charged with officially. Here we assume, with support from victimization data, that actual offenses outnumber officially recorded offenses and that the unrecorded offenses are not committed predominantly by those who have no recorded police contacts.

Consistent with our expectation, 65 per cent report committing more index offenses than their official records indicate. Thirty-five per cent report the same number or less than the number of officially recorded offenses. The table also shows that the offender categories

TABLE 2.8

PERCENTAGES REPORTING INDEX OFFENSES LESS THAN OR EQUAL TO (≤) AND MORE THAN (>) THE NUMBER OF OFFICIAL CONTACTS FOR SUCH OFFENSES: BY OFFENDER CATEGORY

	One-Time	Recidivist	Chronic	Totals
≤	31	40	35	35
	(28)	(33)	(19)	(80)
>	69	60	65	65
	(62)	(50)	(35)	(147)
	100.0	100.0	100.0	100.0
	(90)	(83)	(54)	(227)

do not differ much in this regard; they under- and overreport with similar frequency.

In Table 2.9 we display the mean number of self-reported index offenses for offender categories. The table indicates that the chronic offenders report committing index offenses across all offense types more frequently than the one-time offenders or recidivists. As juveniles they report committing more than thirteen index offenses; the other offender categories report committing less than half that number. As adults the one-time offenders and recidivists report they commit 3.08 and 2.58 index offenses respectively between the ages of 18 and 25. The chronic offenders report committing two to three times that number. This table is reminiscent of earlier ones (see Tables 2.1-2.4) where the officially recorded offense patterns of the offender categories were compared. In those tables the chronic offenders were much more seriously offensive than the other two

TABLE 2.9

MEAN NUMBERS OF SELF-REPORTED INDEX OFFENSES FOR JUVENILES, ADULTS AND CAREER BY OFFENDER CATEGORY[a]

	Juvenile Index			Adult Index			Total Career Index
Offender Category	Injury	Property	Both	Injury	Property	Both	
One-time offender (90)	2.13	3.34	5.48	1.78	1.30	3.08	8.56
Recidivist (81)	1.65	4.05	5.70	1.57	1.01	2.58	8.28
Chronic (46)	3.61	9.57	13.17	2.24	5.83	8.07	21.24

[a]Subjects who reported more than 100 offenses in a given offense category (e.g., injury index offenses committed as a juvenile) were eliminated from the analysis. These extreme values, though some are probably legitimate reports, were removed so that they would not unduly affect mean values.

groups and the pattern of the relationship found there was very similar to the one observed here with self-reports of serious offenses.

In attempting to evaluate our self-report data we have some contradictory evidence. Correlations are low between self-reports of index offenses and officially reported police contacts for index offenses. This would suggest the existence of systematic bias in our data and, in fact, there is some evidence that error may be in different directions in self-reported arrests based on offender category. On the other hand, the two tables provide results we would expect. Table 2.8 indicated, as expected, that most offenders reported committing more offenses than they have been charged with

and that the offender categories do not differ significantly in this regard. Table 2.9 indicates chronic offenders self report committing index offenses with a much higher frequency than do the other two offender groups and comparing offender groups in this regard is reminiscent of the patterns observed earlier in the comparison of their official records. Thus we have support for using the self-report data in a straightforward manner.

We cannot be precise about the validity of our self-report data and summarize as follows:

1. Interviewed and non-interviewed subjects are sufficiently similar on three dimensions of offense behavior within offender categories to justify using mean self-report data from those interviewed to describe this activity for those not interviewed.
2. In spite of an overall correlation of .15 between self-reports of index offenses and officially recorded police contacts for these kinds of offenses, we find evidence in our own data that the self-reported and official patterns are similar. Further, there is evidence in our data and support from other research that suggests underreporting is the direction of error.
3. Due to our research goal and the probable conservative effect of self-report error in our restraint model, use of the self-report estimates is justified.

D. SUMMARY

We had two goals in this chapter:

1. to demonstrate the existence of an offender group which offends frequently and is responsible for most serious crime, and
2. to investigate the validity of the statistical basis for making the judgment in number (1) above.

We have shown that both official and self-reported offense frequencies confirm number (1). The chronic offenders commit 80-85 per cent of the official index offenses of our cohort and a high per capita number and high percentage (about 60%) of all self-reported index offenses.

When we compared police and victimization data we found some evidence for racial bias at the arrest stage and therefore the validity of the official data is doubtful. The bias seems to be offense specific so that we cannot provide an overall estimate of how substantial this effect may be. This evidence of systematic bias in the official data requires that we be cautious with our use of these estimates.

The self-report offense measures appear to contain considerable error, but we have presented evidence suggesting they can be used legitimately in developing individual offense rates. It also appears that the direction of error is conservative for our usage. Both the reports of serious offenses and reports by serious offenders

tend to be underestimates. This effect would understate individual offense rates and deflate the restraint estimates we develop from our models.

CHAPTER 3

TWO MODELS TO ESTIMATE RESTRAINT

A. INTRODUCTION

We will present, explicate and apply to our data two models to estimate the restraint potential of incarceration. The first will be a general model--assuming an even distribution of offenses by age; the second will be age specific and compute restraint values for ages 14 through 30. We take considerable direction from Avi-Itzhak and Shinnar (1973) and Shinnar and Shinnar (1975) and will generally follow their notation. Since these writers developed their estimates of restraint from aggregate data and since we will use our cohort data to estimate values for the terms of our model, the two efforts diverge considerably. The basic problems and general form of the solutions are similar.

The Two Models

$$\text{General:} \quad R_j = (\bar{X}_j + \bar{X}^*_j)Q_j J_j S_j \tag{1}$$

where R_j = annual restraint potential of incarceration for offenses of class j for a single offender

$\bar{X}_j$ = mean annual number of officially recorded police contacts for offenses of class j

$\bar{X}^*_j$ = mean annual number of self-reported offenses of class j

Q_j = probability of conviction given the commission of an offense of class j

J_j = probability of an incarceration sentence given conviction for an offense of class j

S_j = incarceration time served by guilty offenders for an offense of class j.

Age Specific: $$R_{jk} = (\overline{X}_{jk} + \overline{X}^*_{jk})Q_{jk}J_{jk}S_{jk} \qquad (2)$$

where subscript k indicates an offender age.

Because we have longitudinal data for a cohort of offenders we can compute estimates for both models. If the total restraint value for a given offender category is desired, R_j or R_{jk} can be multiplied by the number of offenders in that category (N_k). We will refer to the $(\overline{X} + \overline{X}^*)$ term as the mean offense or individual offense estimate.[1] This term is critical because its value will largely determine the value of R (Avi-Itzhak and Shinnar, 1973:93; Cohen, 1976:49; Wilson and Boland, 1973:205).

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[1]As will be seen from the formula we use to compute the age-specific offender rates (#6, p. 56), we ignore the age parameter when we adjust these rates to take account of the time individuals were incarcerated. We assign all incarceration time served for an offense committed at a given age to that age category. This introduces some inaccuracy into our model; incarceration time for an offense committed at a given age may be served at a subsequent age or this time may span more than one age. If we were to develop a semi-Markov model to represent the offense and incarceration process over time we could take account of this variation and be more precise. We have not done so for two reasons; (1) our data are not sufficient; an example will illustrate. Often an individual who is incarcerated for an offense will serve his time in two or more discrete time periods. He may serve time before he is released on bail, serve more time for the same offense after conviction, and be returned to serve time for a parole violation after being released from his sentence to parole. We have recorded the total amount of time served for a given offense and cannot assign it accurately to exact dates. We are therefore unable to delimit age parameters within which individuals were

The last three terms, the probability of conviction, the probability of incarceration and the length of incarceration (Q, J, S) can be conceptualized as the criminal justice efficiency terms; their combined product is a measure of the average time served for each crime (Shinnar and Shinnar, 1975:586-587). When we develop values for these three terms from our data we will, at the same time, be estimating how much crime was prevented by the juvenile and adult justice systems in Philadelphia during the period issue. Clarke (1975) followed an analogous logic without developing the estimates that will be provided here.

Before proceeding with a discussion of the models' assumptions and then presenting formulae and derivations, an example of how the model works with hypothetical values may make our subsequent discussion clearer. Say offenders are arrested for an average of one index offense per year and in addition they report committing one additional index offense annually for which they are not arrested. Further imagine the probability of conviction given the commission of an

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incarcerated. (2) In spite of the error introduced by our choice of model, we feel it is a useful analytic and policy tool. It is straightforward and more likely than the more sophisticated one to match available data. Even where the more complete data required for a semi-Markov process model are available (e.g., in detailed prison records), the time and resources required to collect them are so substantial they are not often invested. The absence of criminological research using a semi-Markov process to deal with the offense career estimation problems is one indication of the difficulty of obtaining data sufficient for the more sophisticated methodology.

index crime is 10 per cent; the likelihood of an incarceration sentence given conviction is 30 per cent and the average time served for such offenses is one year. The formula with these values inserted is as follows:

$$R = (1 + 1)\ (.1)\ (.3)\ (1)$$

$$R = .06.$$

Under such a hypothetical set of figures the average index offense savings is .06 a year per offender. If there were a thousand such offenders who have official police contacts in a given jurisdiction, the criminal justice system under the stated conviction and sentencing contingencies would prevent 60 index offenses per year.

B. ASSUMPTIONS OF THE MODELS

Assumption I: Officially recorded police contacts are evenly distributed over the offense career.

It is well known that this assumption is not met because criminal behavior varies significantly by age, being most frequent in the middle teens and decreasing thereafter. Assumption I is operative for the general model only. In the age specific model it is unnecessary because we use age specific offense estimates.

Assumption II: Offenses commited by individuals while they are incarcerated do not reduce the value of R.

When we speak of restraint potential we consider only that an incarcerated individual will not commit offenses against those outside the institution where he is housed. He may rob other inmates, assault a guard, sell drugs or engage in a stock manipulation scheme. Our model disregards these offenses; it assumes they do not offset the savings in crime we have gained by incarceration. We also disregard the crime of escape and any offenses which may be committed during an escape. Ideally we ought to consider these offenses if we wish to estimate net restraint effect. We have no data which would allow such an accounting and so we disregard them. Our model needs to be evaluated accordingly.

Assumption III: At any given time the size of the criminal population is stable.

This assumption posits that an individual's offender role will not be filled by a nonoffender when the former is incarcerated and/or that active offenders will not increase the rate of their offending as other offenders are removed. In the case of some offense and offender types the assumption is likely not met. This may be especially true of some consensual offenses. If a numbers writer or drug dealer is removed from the street it may take little time for his position to be filled. We believe such replacement less likely in the cases of serious personal and property offenses and although our model can be applied to all offense types we see the restraint question to be most relevant to serious offenses. Later when we use our formula to estimate restraint potential we will speak of the seven Part I FBI offenses.

Although we believe the serious offender population is relatively stable, others would disagree (Martinson, 1975:45-47; van den Haag, 1975:52-57). There is little evidence to support assumption III and it is a critical one. If a robbery or burglary offender who is incarcerated is replaced by a nonoffender or a less serious offender, or if unincarcerated offenders increase their robbery and burglary activities when one of their fellows is incarcerated, incarceration may have little restraint effect. The assumption of a stable offender population is one commonly made and supported inferentially, if at all. Shinnar and Shinnar, for example, argue that if a major portion of unrecorded serious crime was committed by those who are not arrested, we are led to unlikely conclusions about the percentage of the population who commit serious crime and the proportion of crimes of

official offenders which are cleared by arrest--both percentages being illogically high (Shinnar and Shinnar, 1975:597-599). We can marshal inferential support for this assumption from our own self-report data; it will be remembered that the mean self-report estimates in Chapter 2 suggested both officially recorded and self-reported offenses were similarly distributed. The chronic offenders are the most seriously offensive group on the basis of both official and self-reported frequencies. If there is not a large number of serious offenders who are never arrested, assumption III does not present a serious problem. As our formulas indicate we develop estimates from all offenders so that as long as most serious offenders are sometimes arrested, distortion is not serious.

Assumption IV: Aside from restraining individuals from committing offenses outside the institution, incarceration does not alter the probability of offensive behavior after release.

This assumption covers three potential effects of incarceration at the individual level (the model disregards general deterrence). During incarceration the individual may be rehabilitated or dissuaded by the experience from committing further offenses.. These effects would be a bonus; the crime reduction potential of incarceration would be in excess of the restraint value. The third possible effect of incarceration relevant to our model is the criminogenic

effect; if an individual is more likely to offend in the future after being incarcerated then R will overestimate its crime prevention capacity.

Considerable evidence has been amassed over many years on the effect of incarceration and no simple conclusion and few general statements are possible. It is no help but probably accurate, nonetheless, to say that prisons rehabilitate, dissuade and prisonize in varying degrees. The almost total absence of experimental conditions makes it difficult for research to evaluate just what effects occur and in what magnitude. There is some evidence that parolees do as well after release as probationers (Lerman, 1975), and the contemporary wisdom about rehabilitation is that it has little effect (Lipton et al., 1975).

If the effects of rehabilitation and dissuasion (if any) equal or outweigh any criminogenic effect of incarceration then we can say that our model either accurately measures or understates the value of R. If the incarceration experience increases the likelihood of or raises the seriousness of future offensive activity in excess of rehabilitative and dissuasive effects, then it can be said to be criminogenic and the value of R is overestimated. Further, if the latter is true, a policy which attempts to reduce the crime rate through the use of incarceration may be invalid. To summarize the above discussion, if

$$R + T + D_d + D_g > C \qquad (3)$$

where

R = restraint

T = rehabilitative effect

D_d = deterrence by dissuasion

D_g = general deterrence

C = criminogenic effect of incarceration,

then incarceration may be a rational policy choice. Of course, the above oversimplifies; it does not, for example, consider such relevant issues as retribution or other functions of punishment nor does it consider the financial cost of such a policy.

Assumption V: Computations of restraint under the models used here disregard the effect of multiple offender offenses.

Our models effectively assume that all offenses are committed by single offenders. When we compute offense rates by summing official and self-reported offenses for an individual we do not take account of those cases where two or more offenders were involved in the same offense. These multiple offender offenses are then potentially counted more than once, i.e., they are included in the individual offense rates of each of the participants in the event. This effect is not a conservative one for our model because it results in overestimates of "exclusive" individual offense rates and hence the potential savings in offenses prevented by incarceration.

The effect of this assumption could be significant. Our data indicate a substantial percentage of index offenses involve multiple offenders. Although we can not classify offenses on the basis of whether or not they involved multiple offenders for about two-thirds of the offenses, those cases where we have sufficient data indicate 73 per cent of index offenses involved more than one offender.

C. TERMS OF THE MODELS

$\overline{X}$: the mean annual number of officially recorded police contacts.

This is our estimate of official crime. We compute the mean by estimating the length of a criminal career, i.e., the time between commission of first and last offense. From this time interval we subtract out any time incarcerated before the final offense.[2] Since we assume no offenses occur during incarceration (assumption II) we ought to include only actual time at risk during the offense career. It will be remembered that our cohort was born in 1945 and that our data go only through the end of 1975. The cohort subjects had all completed their 30th year, but undoubtedly some have not completed their criminal careers. We thus have an artificial upper boundary on the length of career. In computing career length we also take the age at first officially recorded police contact as the beginning of a career. This may not be the age of onset of the career since an individual may have begun to offend prior to this time. We will deal more explicitly with these career boundary problems later.

The formula for computing the mean annual number of recorded police contacts is:

$$\overline{X}_j = \frac{\Sigma X_j}{T_k} \qquad (4)$$

where

[2] We do not include incarceration time served after the last offense since, by definition, that period is effectively outside the career boundary.

X_j = an officially recorded police contact for offenses of type j

T_k = the length of the official criminal career in years for offenders in category k.

The length of the official criminal career will take account of at-risk time, i.e., the total period during which an individual was free to commit offenses. Formula 5 provides this estimate.

$$T_k = \frac{(\Sigma Af_k - \Sigma Al_k) - \Sigma Z_k}{N_k} \qquad (5)$$

where

Af_k = the age of an offender in category k at his final officially recorded police contact

Al_k = the age of an offender in category k at his first officially recorded police contact

Z_k = total career incarceration time for an offender in category k

N_k = total number of offenders in category k.

It makes no sense to speak of the length of a criminal career for those offenders who have only one officially recorded police contact--Af = Al--and thus career length equals zero. We will consider only offenders who have at least two recorded police contacts.

As previously mentioned, our data artificially constrict career length; not all our subjects have completed (some may not have even begun) their criminal careers. They were age 30 when the data-gathering process was completed. The estimates of T to be used in our model almost certainly understate career length and, since this

estimate is divided into the total number of career offenses of a given type (ΣX_j), $\overline{X}$ in formula (1) may be inflated. This is likely because offense frequency diminishes with age so that T probably increases disproportionately to X past age 30.[3] Ultimately we hope our cohort can be followed into middle age and beyond so that their $\overline{X}$ can be established rigorously. As it is now, we must accept this limitation of our data and evaluate our estimate of R accordingly. We will be specific about the impact of career length (T) on R and thus estimate the potential distortion.

This problem with $\overline{X}$ does not apply for formula (2), the age specific model. Here:

$$\overline{X}_{jk} = \left(\frac{\Sigma X_{jk}}{N_k}\right)\left(1 + \frac{Z_{jk}}{N_k}\right) \qquad (6)$$

where

X_{jk} = an officially recorded police contact for an offense of type j by an offender of age k

N_k = the number of offenders with officially recorded police contacts at age k

Z_{jk} = incarceration time for offenders with officially recorded police contacts at age k.

The mean estimate will be developed for each age from 14 through 30 so that the career length estimate required in the general model is

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[3] Our own data indicate offense frequency diminishes with age. Sellin (1957) found a similar relationship between age and recidivism.

unnecessary. The second major term in formula (6) is a correction factor; it adjusts the mean to take account of that amount of time offenders were incarcerated for offenses committed at a given age.[4] The mean is increased by a proportion equal to the proportion of time offenders at a given age were incarcerated and thus prevented from committing offenses.

$\overline{X}^*$: the mean annual number of unrecorded offenses.

Fifty-one per cent (235) of all offenders (459) in our cohort were interviewed and asked to report offenses they may have committed where no arrest took place. The interviews took place during 1970 at the subjects' age 25.[5] Each was asked to report how many times before age 18 and how many times after age 18 he performed a variety of illegal acts. The questions included in this part of the interview are reproduced in Appendix B. We have adapted these data for use as

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[4]We make the adjustment for incarceration time at the age when the offense was committed even though it may have occurred at a later age or spanned two or more ages. See footnote 1 of this chapter.

[5]A few interviews took place in 1971, but the majority were completed during 1970. Also, depending on the month of birth of the subject and the month of the interview, individuals may have been age 24, 25 or 26 when interviewed. We will disregard this and assume interviews took place at age 25.

We have used the self-report data for 217 (92%) of the interviewed offenders. Eighteen cases were eliminated because of unusable answers or because individuals reported having committed very high numbers (100 or more) of index offenses. Although some of these may have reported accurately, we are sure some have grossly exaggerated their serious offensivity, e.g., one reported 1552 index offenses. The effect of this elimination is conservative for our models--R will be underestimated.

the measure of unrecorded crime in our restraint model in two ways. First, question numbers 212, 206, 200 and 195 are interpreted as indicating the four personal injury offenses of homicide, forcible rape, robbery and aggravated assault. Question numbers 207, 201 and 197 are taken as indicators of burglary, larceny and auto theft. The second way we have adapted the self-report data of the questionnaire for use in our age specific model as the indicator of unrecorded crime is to distribute these self-reported offenses by age over ages 14 through 25. We have developed a proportion from our official data to allocate the grouped juvenile and adult self-reported offense data to specific ages.[6]

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[6]The self-reported offenses were distributed over the ages in the same proportion as like officially recorded offenses were distributed. The following formulas apply:

$$\Sigma X^*_{jk} = \Sigma X^*_j \left(\frac{\Sigma X_{jk}}{\Sigma X_{jK}} \right)$$

where

X^*_{jk} = a self-reported offense of type j committed by offenders at age k

X^*_j = a self-reported offense of type j

X_{jk} = an officially recorded police contact for an offense type j by an offender of age k

X_{jK} = an officially recorded police contact of type j by an offender grouping (juveniles: <18 or adults: 18-25).

The formulas for arriving at the mean values for the overall annual number of self-reported offenses and the analogous age specific mean are:

$$\bar{X}^*_j = \frac{\Sigma X^*_j}{T^*_j} \tag{7}$$

where

X^* = a self-reported offense of type j

T^* = the length of the self-reported criminal career in years,

and

$$\bar{X}^*_{jk} = \frac{\Sigma X^*_{jk}}{N^*_{jk}} \tag{8}$$

where

N^*_{jk} = number of self-reported offenders of type j at age k.

$$\Sigma N^*_{jk} = \Sigma N^*_j \frac{\Sigma n_{jk}}{\Sigma n_{jK}}$$

where

N^*_{jk} = the number of self-reported offenders of type j at age k

N^*_j = the number of self-reported offenders of type j

n_{jk} = the number of official offenders of type j at age k

n_{jK} = an official offender of type j by an offender group (juveniles: <18 or adults: 18-25).

Thus we assume the self-reported offenses are distributed by age in the same way as are officially recorded police contacts.

We have no empirical foundations in our data to estimate T*--subjects reported their offenses as committed either before or after age 18. In the case of the adult offenses they could not have been committed over more than eight years, i.e., from ages 18 to 25. The juvenile offenses could have been committed over an even longer period of time; the first officially recorded police contact, for example, occurred at age 7. But if we take some direction from our official data, offense frequency is minimal and index offenses are rare events in the early juvenile years. We will arbitrarily assume the length of the juvenile self-reported index offense career to be seven years (ages 11-17) so that the value of T* is 15. We believe this estimate to be a conservative one since a mean estimate of career length would likely be less than that.

Q: the probability of conviction.

The probability of conviction in the general model is a simple proportion of the number of offenses found "guilty" over the number of offenses. This factor, when multiplied by the annual number of offenses, provides an estimate of the absolute limit on the number of offenses which may be prevented annually by incarceration. It is the number of offenses for which an incarceration sentence is possible.

It is not accurate to speak of conviction in the case of juveniles. The legal distinction and its policy implications are important. A finding or plea of guilty for an index offense in the case of an adult will almost always make him a candidate for an incarceration sentence.

Handling of juvenile offenders after arrest is often less formal and the closest outcome to a guilty finding is being adjudicated delinquent. Many of our offenses were committed under the age of 18 when the offenders were subject to juvenile court. We have classified only three types of juvenile dispositions as "convictions"--fine, probation and sentences to incarceration. Cases classified as warnings, adjustments, or where the offender was incarcerated in the Philadelphia juvenile detention facility as a detainee were not considered as convictions for our purposes. We have decided on this relatively conservative definition of conviction for juveniles because we wish our restraint estimates to reflect only those offenders and offenses for which an incarceration sentence is a real possibility. Cases finally adjudicated as fines or probation could presumably have also resulted in incarceration. The following juvenile and adult dispositions have been defined here as guilty findings:

Juveniles: fine, probation, incarceration

Adults: lower court: guilty of lesser charge
guilty of arrested charge

upper court: plead guilty to major or lesser charge
found guilty of major or lesser charge
at jury or non-jury trial.

The probability of conviction is derived from the following formulas:

$$Q_j = \frac{\Sigma G_j}{\Sigma X_j + \Sigma X^*_j} \qquad (9)$$

where

G_j = a guilty finding for an offense of type j.

The age specific probability of conviction is derived from

$$Q_{jk} = \frac{\Sigma C_{jk}}{\Sigma X_{jk} + \Sigma X^*_{jk}} \qquad (10)$$

where

C_{jk} = a person found guilty for an offense of type j at age k

and subscript k denotes an age.

In the general model the probability of conviction (Q) is computed from number (9). The unit being counted in both numerator and denominator is offenses; thus one individual can account for two or more guilty findings. In the age specific model Q is computed with guilty individuals (C_{jk}) in the numerator. In the latter we ought not count more than one guilty finding for an individual because we are dealing with one age, i.e., one year. In the former we are computing estimates overall for the entire career so we count the number of convictions; restraint by incarceration can be applied at various points in a career to the same person. It makes less sense to speak about restraint being applied to the same person two or more times in the same year. The proportion of the sum of these guilty findings (or persons) to the combined sum of all officially recorded and self-reported offenses represents the likelihood that an individual will become a candidate for incarceration given the commission of an offense.

Although there are offenses for which the law does not permit the

sanction of incarceration, we need not deal with that here because:

1) so far as we know, no one seriously proposes a policy of restraint for less serious offenses; and we will restrict our application of the model to index offenses. In Philadelphia (and all other jurisdictions we are aware of) all Part I index offenses are subject to incarceration;
2) we speak of restraint potential and even if the law does not permit incarceration for an offense of type j, legislative change is possible.

We have made an assumption for our formulas which may have deflated the value of the conviction probabilities. If we were unable to find an indication of the disposition of a recorded police contact in any of the record sources we used, we have not eliminated the case. It is still counted in the denominator of formulas (9) and (10) and is implicitly assumed to be a "not guilty." Undoubtedly, some of these cases are incorrectly classified. We have elected this approach because we felt it most likely that the absence of an indication of disposition was likely to imply the case dropped out of the system early (dismissed at a preliminary hearing, nolle prosse, etc.), was disposed of informally, or resulted in a minor sanction (fine, restitution, etc.). If there was a formal disposition of the kind that could result in an incarcerated sentence, we felt the likelihood is that it would have been turned up in our search of the several record sources. The potential impact of this assumption is not substantial since we were usually

able to determine the disposition for index offenses. In any event, the effect of this assumption on the value of R in both restraint models is conservative. Since the relationship between R and Q is direct and an inflated denominator in (9) or (10) reduces Q, our assumption here tends to deflate the value of R.

J: the probability of incarceration.

Formulas (11) and (12) provide the computational basis for incarceration probabilities for general and age specific models respectively.

$$J_j = \frac{\Sigma I_j}{\Sigma G_j} \tag{11}$$

where

J_j = the probability of incarceration given conviction for an offense of class j

I_j = an incarceration for a guilty offense of class j.

$$J_{jk} = \frac{\Sigma D_{jk}}{\Sigma C_{jk}} \tag{12}$$

where

D_{jk} = a guilty person incarcerated for an offense of class j at age k

C_{jk} = a person found guilty of an offense of class j at age k.

S: the length of incarceration.

Mean incarceration times will be computed for both general and age specific models by offense class.

$$S_j = \frac{\Sigma F_j}{\Sigma I_j} \tag{13}$$

where

S_j = mean time served for offenses of class j

F_j = an incarceration length for a guilty offender for offenses of class j

I_j = an offender of offense class j.

$$S_{jk} = \frac{\Sigma F_{jk}}{\Sigma D_{jk}} \tag{14}$$

where subscript k denotes an age.

S denotes time actually served--not the sentence length. In those cases where we know an individual was incarcerated but lack time served, we will assign a mean time served value from offense specific mean estimates developed from our data.

CHAPTER 4

COHORT OFFENSES, CRIMINAL JUSTICE SYSTEM PERFORMANCE AND RESTRAINT

A. THE COHORT'S INDIVIDUAL OFFENSE RATE

In this chapter we will provide estimates for the terms in our models. We will restrict our attention to index offenses since we are not aware of serious proposals to consider a policy of restraint for nonserious offenses. Alternate definitions of offense seriousness are possible; we elect to accept the Uniform Crime Report definition here because the policy implications of our findings will be less ambiguous. Each of our models can be viewed as consisting of two terms: the offense term or individual offense rate ($\overline{X} + \overline{X}^*$) and the criminal justice system term (QJS). We will give estimates for the former first. Table 4.1 provides these figures; they are calculated under the assumptions and formulas specified in the last chapter. The table is broken into two sections. The first four rows provide the offense rate information calculated for offender categories under the general model previously specified. The last 17 rows (ages 14-30) contain the age-specific offense rates calculated under that model.

Going first to the last column in the table, the data indicate that over the offense career the combined annual mean for injury and property offenses is 1.1 for all offenders. When one-time offenders are removed the mean annual number of index offenses is 1.21. This mean for recidivists is .69 index offenses a year and for chronic offenders it is 1.86. The latter category commits almost two index offenses per year. Recidivists average slightly more than two-thirds of an index offense per year. The recidivists also have much shorter official careers, averaging 4.28 years. The chronic offenders' official careers average 9.26 years. Looking back at columns 1-6 for the first four rows we can note the relative contribution of injury and property offenses to the total means. Generally, the property offenses are about twice as high as injury offenses and within these offense

TABLE 4.1

MEAN OFFICIAL AND SELF-REPORTED INDEX OFFENSE ESTIMATES FOR OFFENDER CATEGORIES AND OFFENDER AGES: INJURY OFFENSES ($\bar{X}_I$, $\bar{X}_I^*$), PROPERTY OFFENSES ($\bar{X}_P$, $\bar{X}_P^*$) AND INJURY AND PROPERTY OFFENSES COMBINED ($\bar{X}_T$, $\bar{X}_T^*$)

Offender Category--Age	(1) $\bar{X}_I$	(2) $\bar{X}_I^*$	(3) $\bar{X}_P$	(4) $\bar{X}_P^*$	(5) $\bar{X}_T$	(6) $\bar{X}_T^*$	(7) $\bar{X}_T + \bar{X}_T^*$
All Offenders (459)	.11 (212)	.27	.25 (501)	.47	.35 (713)	.74	1.10
All Except One-Time Offenders (304)	.10 (206)	.28	.24 (478)	.59	.34 (684)	.87	1.21
Recidivists (160)	.03 (21)	.22	.11 (73)	.34	.14 (94)	.55	.69
Chronics (144)	.14 (18)	.40	.30 (405)	1.03	.44 (590)	1.42	1.86

TABLE 4.1 (CONT.)

MEAN OFFICIAL AND SELF-REPORTED INDEX OFFENSE ESTIMATES FOR OFFENDER CATEGORIES AND OFFENDER AGES: INJURY OFFENSES ($\bar{X}_I$, $\bar{X}_I^*$), PROPERTY OFFENSES ($\bar{X}_P$, $\bar{X}_P^*$) AND INJURY AND PROPERTY OFFENSES COMBINED ($\bar{X}_T$, $\bar{X}_T^*$)

14	.06	2.0	.32	2.18	.38	4.08	4.45
(98)	(5)		(28)		(33)		
15	.02	2.02	.51	3.04	.52	4.17	4.69
(139)	(2)		(63)		(65)		
16	.09	2.18	.39	3.04	.47	4.38	4.86
(170)	(13)		(58)		(71)		
17	.12	2.25	.40	3.02	.52	4.13	4.64
(117)	(12)		(40)		(52)		
18	.21	1.43	.28	1.56	.49	2.52	3.01
(96)	(19)		(26)		(45)		
19	.15	1.66	.39	1.49	.54	2.44	2.98
(96)	(13)		(33)		(46)		
20	.19	1.38	.33	1.50	.52	2.45	2.97
(88)	(14)		(25)		(39)		
21	.17	1.42	.33	2.10	.50	3.02	3.51
(69)	(10)		(20)		(30)		
22	.24	1.42	.49	1.32	.73	2.48	3.21
(56)	(10)		(21)		(31)		
23	.36	1.42	.54	1.80	.91	2.79	3.70
(63)	(20)		(30)		(50)		
24	.22	1.28	.35	1.71	.57	2.50	3.06
(62)	(12)		(19)		(31)		
25	.27	1.39	.38	2.14	.64	2.92	3.56
(54)	(12)		(17)		(29)		
26	.32		.59		.91	2.61(a)	3.52
(47)	(12)		(22)		(34)		
27	.66		.19		.86	2.61(a)	3.47
(43)	(24)		(7)		(31)		
28	.38		.49		.87	2.61(a)	3.48
(31)	(11)		(14)		(25)		
29	.32		.29		.61	2.61(a)	3.22
(33)	(10)		(9)		(19)		
30	.47		.24		.71	2.61(a)	3.32
(17)	(8)		(4)		(12)		

(a) A self-reported summary estimate is computed for ages 26-30. It is the mean number of self-reported index offenses for all adult years 18-25.

classifications, the self-reported offense means are two to three times higher than the officially recorded offense means. The recidivist category is an exception in this latter regard. Their injury and total index self-reported means are about four to seven times higher than the corresponding officially recorded figures.

Table 4.1 also displays age specific index offense estimates for ages 14 to 30; we have no self-reported offense information after age 25 so that the means displayed for the years 26 to 30 are for officially recorded index offenses only. We have estimated a self-reported total index mean (X_T^*) for ages 26 to 30 (column 6) so that a final individual offense rate can be computed for all ages. Again, going first to column 7, we can observe age specific total index offense means for combined officially recorded and self-reported offenses. Between ages 14 and 25 the means range between about three to almost five offenses per age--being highest in the juvenile years. At age 16 offenders commit 4.86 index offenses per year; the lowest value is at age 20 when offenders average 2.97 index offenses.

It needs to be emphasized that we have computed age-specific means for all (not just index) official offenders at a particular age; the means refer to offenders who come in contact with the juvenile or adult justice system for <u>any</u> offense. This group of official offenders on the average commits officially and self-reported <u>index</u> offenses at the rates indicated in column 7. The range over which these index offense means vary is narrower than we expected. The gross offense counts in our data for example vary dramatically by

age. Percentage differences between offender categories are substantial but there is no indication in our data that many offenders are committing large numbers of index offenses annually. This mean never reaches 5 in our data. Our estimates in this regard are much less than others. Petersilia (1976) estimates the most serious offenders average about 20 serious offenses per year. The Shinnars (1975) estimate 6-14 per year.

Again reviewing columns 1-6 for the age rows in Table 4.1 we can examine the relative contribution of injury and property offenses, and official and self-reported offenses to the total means. Official injury offenses are low in the juvenile years; they increase in the early adult years and then remain stable and relatively high. The mean number of self-reported injury offenses differs from the official means for the same offense type. They are high in the juvenile years, and lower and stable in the adult years. The official property offenses are fairly stable over all ages; the self-reported property offenses are highest in the juvenile years and decrease in the adult years. Columns 5 and 6 clearly indicate the proportionate relationship between official and self-reported index totals. The self-reported to official offense ratio varies from a low of 3.07:1 at age 23 to a high of 10.74:1 at age 14. The ratios are highest in the juvenile years and indicate that based on self-reports, juveniles commit from about 8 to 11 index offenses for every one officially recorded. This ratio is much lower in the 18-25 age period; it ranges between 3 and 6 self-reported index offenses committed for each officially recorded offense.

If we look at the ratios of self-reported to officially recorded offenses for the offender categories in the first four rows of Table 4.1 we can see that the ratios are much lower--varying from 3.93:1 for recidivists to 2.1:1 for the all-offender category. The chronic offender ratio is 3.23:1. The wide variation between these ratios and those for the age specific model stems from the fact that the general model formula distributes fewer self-reported offenses over a longer period of time than is the case for the age specific model. This is a characteristic of the general model which will have to be kept in mind for our later discussion. The individual offense rate developed from the general model will tend to be lower than estimates from the age specific model. If we assume self-reported index offenses are committed between ages 26 and 30 at about the same frequency as they are at ages 24 and 25, we would add over 1000 offenses. The mean offense rates would go up significantly. The chronic offenders' mean for example would go up from 1.86 to 2.44 index offenses per year. This is an increase of about 31 per cent.

There is a second characteristic of the general model which deflates the individual offense rate relative to the age-specific estimates. In the general model the official mean is deflated by the inclusion of offenses committed as early as age 7 when offenses are infrequent. Further, career length is computed from date of earliest officially recorded offense; frequently this is prior to age 14 so that career is lengthened relative to the ages of the age specific model. Thus the numerator (ΣX) is depressed and the

denominator (T) is inflated in the general model (see formulas 4 and 5 in Chapter 3).

On the basis of our calculations of individual offense rate, it appears that the restraint potential of incarceration is substantial and that the age factor makes a difference--although variation here is less than expected. Being more specific, the age specific offense rate suggests that if a 16-year-old who has been arrested for any offense is incarcerated for a year, 4.86 index offenses will be prevented.[1] Or, if a 24-year-old who has been arrested is incarcerated for two years, 6.12 index offenses will be prevented. On the basis of the general model findings, if a chronic offender is incarcerated, 1.86 index offenses will be prevented for each year he is restrained. This breaks down to about half an injury offense saved (.529) and one and one-third property offenses. Before we begin to explore the policy implications of our data, we need to discuss the criminal justice system term of the model.

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[1]This is not strictly true. We ought to say: if an offender is arrested on his 16th birthday and he is incarcerated from that day until his 17th birthday, 4.86 index offenses will be prevented.

B. THE CRIMINAL JUSTICE SYSTEM TERM

An interesting and useful property of QJS is its general utility; it can be used retrospectively and projectively to evaluate criminal justice system performance and its impact on the crime rate. It does not, as has been mentioned earlier, consider general deterrence. QJS is the second major ingredient of our restraint model; the product of its three terms, and the individual offense rate developed in the preceding section, will estimate the crime reduction impact of incarceration for a single offender, i.e., R. If the terms are developed from a historical set of data (as are ours) this product is a statement of the past performance of the criminal justice system. More specifically, if the R value is multiplied by the number of official offenders in the jurisdiction, this product will be an estimate of the number of offenses prevented by the restraint of offenders through incarceration in the past.

These prevented offense estimates, it needs to be emphasized, refer to offenses that would have been reported to the police plus offenses that would never have found their way into official offense figures. This is an important distinction because when considering the impact of restraint on the official crime rate, we need to take account of the proportion of offenses committed which actually constitute the official crime rate as distinct from the actual (officially recorded plus unrecorded) crime rate. This will be discussed again later.

Recently many have pointed to the relationship between criminal justice system performance and crime and have specifically expressed concern about rates of clearance, conviction and incarceration and sentence length, i.e., QJS.[2] It is the reduction in these rates which have occurred, especially since 1960 which is said to explain a major percentage of the large increase in the crime rate during that period (Wilson and Boland, 1976:201-206; van den Haag, 1976:157-177). Shinnar and Shinnar (1975:604) estimate that had criminal justice system performance remained stable during the 1960-70 period, the increase in crime rate would have been much less than it was; they attribute 185 per cent of the 300 per cent increase in "safety crimes" to a reduction in QJS. Our data will not allow us to be so explicit about criminal justice system performance over time. We follow only one age cohort and so we cannot say what the system's performance was for all ages. We can and will discuss the impact on restraint values of different values of QJS.

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[2]Our term Q subsumes both the probability of arrest and the probability of conviction.

C. Q

Table 4.2 displays values for Q, J and S for injury offenses, property offenses and for the two combined. We will discuss these terms in order--first the probabilities of conviction for injury, property and all index offenses (Q_I, Q_P, Q_T) in columns 1, 4 and 7. Going first to column 7 for the general model we see that for all offenders there is a likelihood that conviction will follow the commission of an index offense (Q_T) about 5 or 6 times per 100. When one-time offenders are removed, this probability goes up to 7 times per 100. Chronic offenders are convicted 8 times per 100 and this is 4 times higher than the likelihood recidivists will be convicted given the commission of an index offense. Going back to columns 1 and 4 we can see that the shape of the relationship between the likelihood of conviction and offender category holds for injury and property offenses. The chronic offenders largely determine the overall conviction rate due to the numbers of their convictions. They are much more likely to be convicted than are one-time offenders or recidivists.

These data suggest the Philadelphia criminal justice system has operated in a highly selective manner; it appears to operate more efficiently against the chronic offenders since they are more likely to be convicted. It may be suggested that these conviction probability disparities support a labeling or social reaction interpretation. We cannot fully interpret the meaning of these data here but can make two

TABLE 4.2

PROBABILITIES OF CONVICTION AND INCARCERATION AND MEAN TIME SERVED FOR INJURY (Q_I, J_I, S_I), PROPERTY (Q_P, J_P, S_P) AND TOTAL INDEX OFFENSES (Q_T, J_T, S_T) FOR OFFENDER AND AGE CATEGORIES

Offender Category--Age	(1) Q_I	(2) J_I	(3) S_I (d) (Years)	(4) Q_P	(5) J_P	(6) S_P (Years)
All Offenders	.048 (100)	.71 (71)	1.22 (71)	.062 (231)	.494 (114)	.70 (114)
All Except One-Time Offenders	.067 (99)	.717 (71)	1.22 (71)	.072 (226)	.496 (112)	.70 (112)
Recidivists	.017 (9)	.556 (5)	.51 (5)	.024 (21)	.238 (5)	.74 (5)
Chronics	.088 (90)	.733 (66)	1.27 (66)	.078 (205)	.522 (107)	.70 (107)
14	.006 (1)	1.0 (1)	1.22 (1)	.033 (8)	.5 (4)	1.22 (4)
15	0	0	0	.042 (23)	.348 (8)	1.53 (8)
16	.017 (7)	.571 (4)	1.22 (3)	.039 (20)	.556 (11)	1.33 (12)
17	.010 (4)	.75 (3)	1.22 (3)	.040 (14)	.286 (4)	1.53 (4)
18	.045 (7)	.714 (5)	.60 (5)	.058 (9)	.667 (6)	.26 (6)
19	.057 (6)	1.0 (7)	2.61 (7)	.066 (13)	.770 (10)	.49 (10)
20	.096 (11)	1.0 (11)	1.04 (11)	.087 (13)	.923 (12)	.24 (11)
21	.049 (4)	1.0 (4)	2.21 (4)	.050 (6)	1.0 (6)	1.29 (6)
22	.062 (5)	.8 (4)	2.42 (4)	.056 (7)	.856 (6)	.93 (6)
23	.055 (9)	.556 (5)	.65 (5)	.067 (12)	.667 (8)	.39 (8)
24	.051 (5)	.8 (4)	.88 (4)	.071 (8)	.75 (6)	.49 (6)
25	.071 (7)	.429 (3)	1.84 (3)	.050 (5)	.6 (3)	1.08 (3)
26	(b) (5)	1.0 (5)	1.70 (4)	(b) (9)	.667 (6)	.38 (6)
27	(b) (5)	1.0 (5)	.85 (5)	(b) (5)	.8 (4)	.24 (4)
28	(b) (3)	1.0 (3)	.61 (3)	(b) (5)	.6 (3)	.11 (3)
29	(b) (5)	.8 (4)	.57 (3)	(b) (3)	.667 (2)	.20 (2)
30 (a)	0	0	0	0	0	0

TABLE 4.2 (CONT.)

PROBABILITIES OF CONVICTION AND INCARCERATION AND MEAN TIME SERVED FOR INJURY (Q_I, J_I, S_I), PROPERTY (Q_P, J_P, S_P) AND TOTAL INDEX OFFENSES (Q_T, J_T, S_T) FOR OFFENDER AND AGE CATEGORIES

Offender Category--Age	(7) Q_T	(8) J_T	(9) S_T (Years)	(10) Q_TJ_T	(11) $Q_TJ_TS_T$
All Offenders	.057 (331)	.559 (185)	.90 (185)	.032	.029
All Except One-Time Offenders	.070 (325)	.563 (183)	.90 (183)	.039	.035
Recidivists	.021 (30)	.333 (10)	.62 (10)	.007	.004
Chronics	.081 (295)	.587 (173)	.92 (173)	.048	.044
14	.025 (9)	.556 (5)	1.22 (5)	.014	.017
15	.032 (23)	.348 (8)	1.53 (8)	.011	.017
16	.033 (26)	.577 (15)	1.30 (15)	.019	.025
17	.031 (18)	.389 (7)	1.40 (7)	.012	.017
18	.053 (16)	.688 (11)	.41 (11)	.036	.015
19	.062 (19)	.895 (17)	1.36 (17)	.055	.075
20	.084 (22)	1.0 (22)	.67 (21)	.084	.056
21	.050 (10)	1.0 (10)	1.66 (10)	.05	.083
22	.058 (12)	.833 (10)	1.52 (10)	.048	.073
23	.054 (18)	.667 (12)	.53 (12)	.036	.019
24	.063 (13)	.769 (10)	.65 (10)	.048	.031
25	.057 (11)	.545 (6)	1.46 (6)	.031	.045
26	.060 (c) (13)	.846 (11)	.91 (10)	.051	.046
27	.060 (c) (10)	.9 (9)	.58 (9)	.054	.031
28	.060 (c) (7)	.714 (5)	.43 (5)	.043	.018
29	.060 (c) (8)	.75 (6)	.42 (5)	.045	.019
30 (a)	0	0	0	0	0

TABLE 4.2 (CONT.)

PROBABILITIES OF CONVICTION AND INCARCERATION AND MEAN TIME SERVED FOR INJURY (Q_I, J_I, S_I), PROPERTY (Q_P, J_P, S_P) AND TOTAL INDEX OFFENSES (Q_T, J_T, S_T) FOR OFFENDER AND AGE CATEGORIES

(a) As of the time of our data gathering, none of the age 30 arrests had been finally disposed.

(b) Conviction probabilities not computed for ages 26-30 because self-report offense data not available for those years.

(c) Conviction probability estimated here is the average for all adult years; we have provided this estimate so that we can give QJ and QJS for all ages.

(d) When we knew an individual had been convicted and incarcerated but were unable to determine the length of time served, we used a mean estimate developed from all offenses of that type.

observations. First it will be remembered the offenses of the chronic offenders tend to be more serious than those of one-time offenders or recidivists (Chapter 2, Section A). Second, if the judicial process is viewed as one which should operate primarily to determine legal guilt, then it appears to discriminate against the chronic offender. (This latter statement is true only if all offender groups have an equal likelihood of being arrested unjustly.) If, however, the judicial process in Philadelphia is operating under a "crime control" or efficiency model and not under a legalistic one (Packer, 1968), then the discrimination may not indicate bias on the basis of nonlegal factors, but instead may indicate the system has a capacity to distinguish and punish serious offenses and offenders. We cannot resolve this issue here, but will return to it again later.

Looking down column 7 again in the age specific section for ages 14 to 30 we see the probability of conviction is lowest in the juvenile years. Between 14 and juveniles are "convicted" for two or three of every 100 index offenses they commit. At age 18 this increases to about five and remains at about that level for the next seven years.[3] Looking at Q_I and Q_P in columns 1 and 4 indicates that this relationship between probability of conviction in the juvenile and adult years holds for injury and property offenses. The difference is most substantial for injury offenses. The likelihood that an adult will be convicted for an injury

[3] As note (c) in the table indicates, we have substituted the mean probability of conviction for all adult years for ages 26-29 due to the absence of self-report data for those years.

offense varies between about four and one-half and nine and one-half per 100. This likelihood ranges from 0 to about one and two-thirds in the juvenile years. The difference between juveniles and adults is not as substantial for property offenses, but the lowest likelihood of conviction in the adult years still exceeds the highest such likelihood in the juvenile years. Movement from the juvenile to adult system of justice appears to make a difference in the likelihood of conviction.

It is tempting to interpret these conviction probabilities as evidence of lenience or inefficiency in the juvenile system but two observations need to be made. First it will be remembered (pp. 62-63) we decided on a relatively conservative interpretation of "guilt" for juveniles: this would tend to deflate the juvenile conviction probabilities we use here. We need to follow this interpretation of conviction for juveniles because we want our convicted population to represent only those who might be incarcerated. Table 4.3 may more accurately characterize the difference in conviction probability for juveniles and adults in the judicial process. Juveniles are less likely than younger adults to be convicted <u>given arrest</u>; the difference is slight for the oldest adult category. This suggests the differences observed between juveniles and adults in Table 4.2 are largely a function of a lower likelihood of <u>arrest</u> for juveniles. Once arrested, they are less likely to be convicted than adults but not by the magnitude suggested in the Q values of Table 4.2. Arrest is much less likely in the juvenile years, thereby reducing the probability of conviction.

TABLE 4.3

PROBABILITY OF CONVICTION GIVEN ARREST (Q_A) FOR ALL INDEX OFFENSES (X_T) BY AGE CATEGORY

Ages	Q_A
14-17	.344
18-21	.419
22-25	.383
26-29	.355

D. J

The probability of incarceration given conviction for the general and age specific models appears in columns 2, 5 and 8 of Table 4.2.[4] In comparison to conviction probabilities, these values are high. For all offenders, over 55 per cent of those convicted of an index offense (column 8) are incarcerated. When the one-time offenders are removed, this probability goes up slightly. The disparity between incarceration rates for recidivists and chronics is comparable to the difference we observed between these two offender categories for conviction probability. Recidivists are incarcerated for about one of every three index offenses for which they are convicted. Over 58 per cent of the chronic offenders so convicted are incarcerated. This different probability most likely reflects a) the comparative seriousness of the offenses of chronic offenders, and b) consideration of the number of previous arrests and convictions in the sentencing decision.

Looking at the age specific model we can again note the difference between juveniles and adults. Juveniles are less likely to be incarcerated when convicted than are adults. Aggregating the juvenile and adult ages on this dimension confirms that juveniles will be convicted and incarcerated 46 per cent of the time. Adults will be disposed of

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[4] Some arrestees are incarcerated as detentioners, i.e., prior to adjudication of their cases. If they are not subsequently found guilty their incarcerations are not counted in computing J_j and J_{jk}.

comparably 81 per cent of the time. This probably reflects both a less punitive sentencing posture for juveniles and the fact that their offenses tend to be less serious (see Chapter 2, Section A).

As would be expected, incarceration is more likely for an injury offense; for ages 14 to 30 it occurs 81 per cent of the time. Property offenses result in incarceration and conviction 64 per cent of the time over these ages. Overall, 71 per cent of those convicted for an injury offense are incarcerated; property offenses result in incarceration 49 per cent of the time. Differences in these percentages are again notable for recidivists and chronics; the latter group is more likely to be incarcerated.

E. QJ

The product of the conviction and incarceration probability terms can be viewed as an indicator of criminal justice system performance up to and including the judicial process. We have displayed this product in column 10. These figures in the general model give a clear indication that the Philadelphia justice system has been much more "efficient" against the chronic offenders. Almost 5 per cent of the index offenses they commit eventually result in conviction and incarceration; the comparable percentage for recidivists is .7 per cent--less than one of every hundred index offenses they commit is so disposed.

QJ values in the age specific model indicate again the higher percentages of adults who are convicted and incarcerated. It appears the juvenile justice system is less efficient than the adult system, but remembering the differential likelihood of arrest for juveniles and adults, this may be largely a function of higher probabilities of arrest in the adult years. In any event, it is clear that age and/or status make a difference in the likelihood that an index offense will be followed ultimately by incarceration.

F. S

Mean sentence lengths are indicated in columns 3, 6 and 9 of Table 4.2. Column 9 for the general model values indicates that the incarceration time served by chronic offenders largely determines the overall mean value; 93.5 per cent of all incarcerations for convicted index offenses are of chronic offenders. The average length of time served for each incarceration is .90 years for all offenders and .92 years for chronic offenders. The ten incarcerations for recidivists average less than two-thirds of a year.[5] Comparing the mean time served estimates in columns 3 and 6 for the four offender categories indicates, as expected, longer incarcerations for injury offenses. For all offenders, injury offense incarcerations average 1.22 years; property offense incarcerations average .70 years--the latter is 43 per cent less than the former.

The estimates of mean time served in column 9 for ages 14-29 do not vary systematically on the basis of juvenile or adult status as did the probabilities of conviction and incarceration. The juvenile estimates are considerably higher than several comparable estimates for the adult years. There are two major patterns in these data. First, mean time served is

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[5]As mentioned in footnote 4 above and indicated in the formulas provided in Chapter 3, incarcerations are not counted if no conviction followed arrest. Neither is time served by offenders who were detained and subsequently found not guilty counted in computing mean incarceration time.

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1 OF 2

consistently high in the juvenile years. Second, the overall trend is for mean time served to decrease as age increases.[6]

It is clear from the data that the offenders in our cohort are generally not incarcerated for long periods. In only three age categories for example (19, 21, 22), do offenders convicted for homicide, forcible rape, robbery and aggravated assault serve more than two years. Adults convicted for burglary, larceny or auto theft serve more than one year only at ages 21 and 25. Offenders receive longer sentences, but the time they actually spend incarcerated is relatively low.

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[6]Our subjects were incarcerated as juveniles between 1958 and 1963. We were unable to collect specific data for them from the institutions where they were sent. We do know that most were sent to Camp Hill. We spoke to several Commonwealth of Pennsylvania officials and they estimated the average length of stay for juveniles at Camp Hill during the period at issue was one-and-one-half to two years. We used a report (Fels Institute, 1954) surveying Pennsylvania Training Schools with admission and discharge data for 1952 for Camp Hill and estimated average length of stay from the following formula:

$$\frac{\text{Number of Admissions}}{\text{Number of Discharges}} \times 365 = 446 \text{ (days)} = 1.22 \text{ years}$$

Our incarceration estimate for juveniles is 446 days for each case we know received such a sentence. In an earlier study, Clarke (1975) used an estimate of nine months for these same data. We feel his estimate is low. It may be approximately accurate for the Youth Development Centers in the state but most of the incarcerations at issue took place in the Camp Hill facility. Finally, our mean estimates of time served for juveniles do not vary meaningfully; each incarceration is the same length.

G. QJS

The final column of Table 4.2 summarizes Philadelphia criminal justice system performance for our cohort sample. QJS may also be described as the average time detained per index crime committed (Shinnar and Shinnar, 1975:586). The figures in column 11 show the system has been most "efficient"[7] against chronic offenders; in the age specific section, adults develop the highest values of QJS. Ages 19 through 22 are especially notable in this regard. It is not possible from our data to say whether these high values for QJS at these ages are the result of age related factors. It could be that during the 1964 to 1967 period when our subjects were ages 19 to 22, the justice system overall was operating more efficiently. We are not able to distill these age and time period effects from each other. Looking at cell values for these ages indicates the high values of QJS for this period result from relatively high values for all three terms. It is not one set of values (e.g., Q) which is mainly responsible for the relatively high overall values.

Potentially, the value of QJS can be greater than one. If Q = .5, J = .8, and S = 3, the value of QJS is 1.2. In fact, the value of the term has never been that high; Shinnar and Shinnar estimate it has probably never been higher than .5 in the United States and estimate that in 1970 it was .024 in New York City (1975:599-604). Our estimates never reach .09 and are usually much less. Several realities are

[7]We will discuss the notion of efficiency more fully in the next chapter.

immediately apparent and can lead us to say quickly that the maximum value QJ can take is almost certainly less than .08. Less than half of the index offenses committed are ever reported to the police (.5); the clearance rate for these reported offenses cannot reasonably be expected to exceed one in four based on such police performance in the past (.25); it would be unrealistic to expect a conviction rate for arrested offenders of more than 70 per cent (.7); and certainly no more than 90 per cent of those convicted would be incarcerated (.9). The product of these four terms is .079. If the average amount of time served were to be three years, QJS would equal .236. Such a value of QJS is probably not attainable in the near future.

Even if a combined probability of conviction and incarceration (QJ) were to reach only 6 per cent, the capacity of the nation's jails and prisons would have been exceeded. Cohen (1976:45) notes that at low levels of QJS, increases in its value have a substantial effect on prison populations. Doubling the New York State rate from .024 to .048 would increase prison population 65 per cent--well beyond the system's capacity to adapt present facilities. Of course, more prisons can be built in New York and elsewhere, but that prospect immediately raises a number of additional questions and problems. Would legislatures appropriate the money for such projects? Is such an approach consistent with the society's moral and political values? These and many other practical and value issues are raised as soon as one begins to consider altering the criminal justice system.

H. R: IMPACT ON THE COHORT

In Table 4.4 we redisplay (from column 7, Table 4.1 and column II, Table 4.2) offense rates and criminal justice system performance estimates for the combined injury-property index offense category ($\overline{Y}_I + \overline{Y}_I^*$ and $O_m J_I S_m$). The product of these two terms is R; these estimates are provided in the last column of Table 4.4. They represent the total number of index offenses per offender per year (or age) which were prevented by the incarceration of our cohort. The four general model offender categories indicate restraint was highest in the case of chronic offenders; up to age 30 the incarceration of those in this offender category prevented an average of .08 offenses per year. In a city the size of Philadelphia there are likely to be thousands of such offenders. An estimate of the total number of chronic offenders in our one age cohort alone is 1450.[8] Each year incarcerations from this group prevented 119 index offenses. Incarcerations of chronic offenders in all age cohorts saved many times that number.

If we break down this offense savings into offenses prevented for which an arrest would have taken place and offenses which would not have been officially charged to an offender, i.e., arrests vs. self-reported offenses, we find 24 per cent of the savings result from prevention of the former and 76 per cent from the prevention of the latter.[9]

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[8]There are 145 chronic offenders in our sample and the sample represents 10 per cent of the original cohort.

[9]Reference to columns 5, 6 and 7 of Table 4.1 allows computation of the relative contribution of arrests and self-reported offenses to the overall offense rate.

TABLE 4.4

R VALUES BY OFFENDER CATEGORIES FOR ALL INDEX OFFENSES

	Offense Rate ($\bar{X} + \bar{X}^*$)	Criminal Justice System Performance (QJS)	R
All Offenders	1.10	.029	.032
All Except One-Time Offenders	1.21	.035	.042
Recidivists	.69	.004	.003
Chronics	1.86	.044	.082
14	4.45	.017	.076
15	4.69	.017	.080
16	4.86	.025	.122
17	4.64	.017	.079
18	3.01	.015	.045
19	2.98	.075	.224
20	2.97	.056	.166
21	3.51	.083	.291
22	3.21	.073	.234
23	3.70	.019	.070
24	3.06	.031	.095
25	3.56	.045	.160
26	3.52	.046	.162
27	3.47	.031	.108
28	3.48	.018	.063
29	3.22	.019	.061

The low values of R for all offenders, all except one-time offenders, and recidivists indicate that the chronic offender category largely determined the magnitude of offense prevention by incarceration. The incarceration of recidivists had very little impact. The value of R for this category is only 3.7 per cent of this value for the chronic offenders.

The age specific R values in Table 4.4 indicate substantial fluctuations although it is clear that in the earlier adult years crime reduction by incarceration was highest. Figure 4.1 assists in interpreting the apparent relationship between age and restraint. The solid line represents R values by age as computed from the data. The broken line represents these values smoothed by using a running average procedure. The smoothed curve indicates R values increase notably at age 18, peak at age 20, then turn downward. The early adult years were the ages at which incarceration had the most substantial impact in preventing index crimes for our cohort.

R values for the ages range between .061 (age 29) and .291 (age 21). Based on the rate at which our cohort committed index offenses at age 29 and the level of performance of the justice system for offenders arrested at this age, .06 index offenses were prevented for each offender per year. The relative contribution of arrested and non-arrested offenses to this savings is 19 per cent for the former and 81 per cent for the latter.[10] Incarceration of 21-year-olds saved

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[10]See footnote 9 of this chapter.

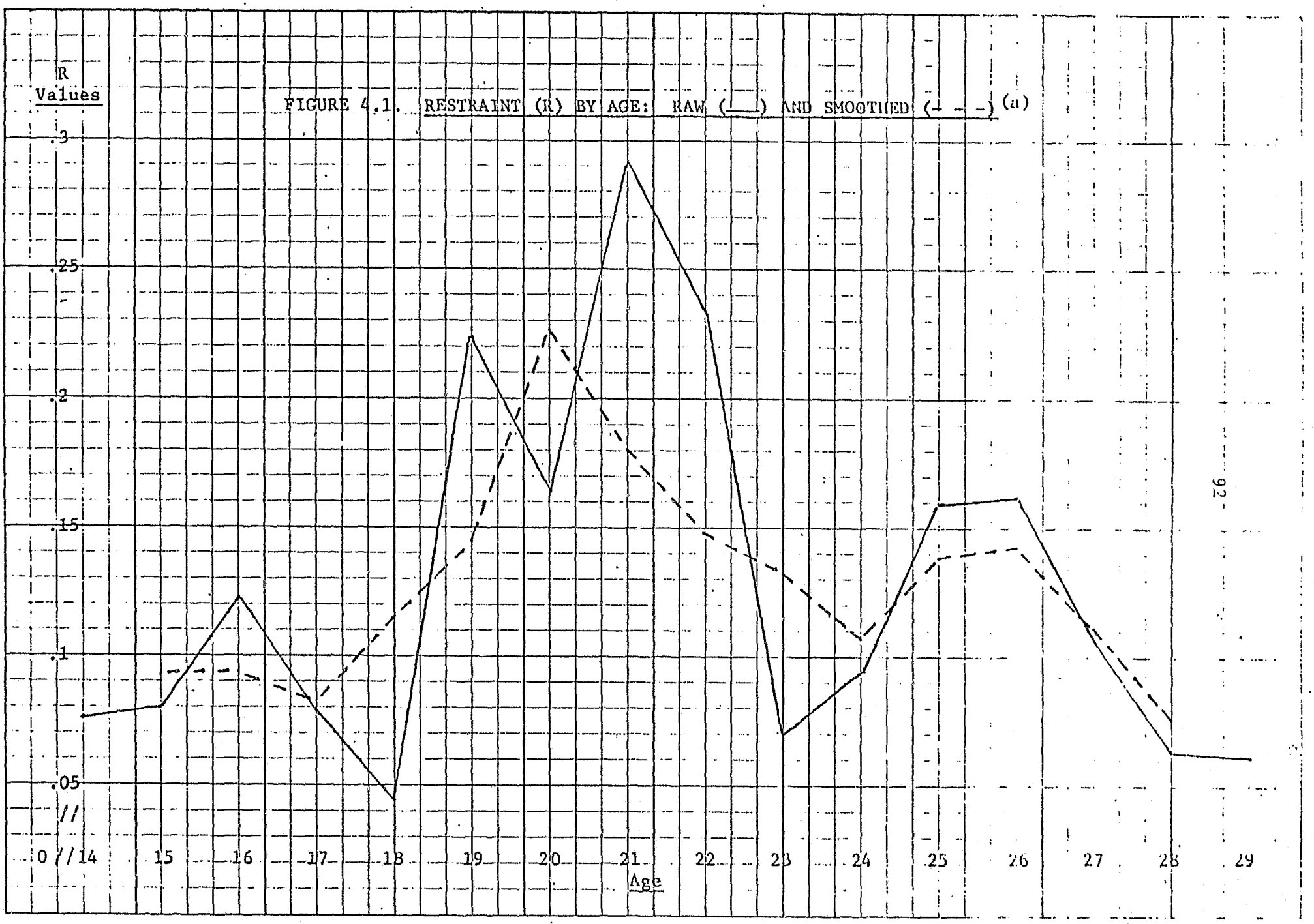

FIGURE 4.1. RESTRAINT (R) BY AGE: RAW (——) AND SMOOTHED (– – –) (a)

FIGURE 4.1 (CONT.)

RESTRAINT (R) BY AGE: RAW (——) AND SMOOTHED (- - -)[a]

(a) The data have been smoothed by a third degree running average. The average value of the first three observations (ages 14-16) is assigned to the middle observation (age 15). The ages 15-17 average is assigned to age 16 and this process is continued for successive groups of three observations to age 28. The first and last observations are "lost" by this method of smoothing.

.29 offenses per year for each offender in our cohort who had an officially recorded police contact at this age; 14 per cent of these savings are accounted for by prevented "arrested" index offenses, 86 per cent by prevention of self-reported index offenses.

If we sum the values of R for ages 14 through 29 we get 2.04. This represents the average number of index offenses prevented by the incarceration of all those in our cohort who have official contacts with the police between ages 14 and 29. About two offenses were prevented for each and there were a total of 1299 such offenders in our sample. The incarceration of offenders in our sample prevented 2650 (1299 x 2.04) index offenses between ages 14 and 29. Since our sample represents 10 per cent of the original 1945 cohort we can multiply by 10 and estimate 26,500 index offenses were prevented by the incarceration of the cohort members between ages 14 and 29.

Looking at the age specific offense rate and criminal justice system performance terms of Table 4.4 we can be more specific about the relative contribution of these factors to R. For example, the higher offense rates at the younger ages (14-17) are not reflected in higher R values. Low justice system performance for these ages more than offsets the potential efficiency payoff of incarcerating high-frequency offenders. The performance term varies over a wider range than does the offense rate and these fluctuations have a major effect on the magnitude of restraint. The wide-ranging variation in QJS and its relatively low values suggest the potential

impact of policy changes that affect these values is substantial. A 50 per cent increase in QJS means a 50 per cent increase in R. At age 14, for example, if the value of QJS were raised from .017 to .026, R would increase from .076 to .116. A .9 per cent increase in the former results in a 4 per cent increase in the latter. The effect of an increase in QJS is a multiplicative function of the offense rate. If offenders in a given category commit an average of three index offenses per year, an increase of one per cent in the value of QJS means an increase of 3 per cent in the value of R. Justice system performance has a major effect on R and the value of QJS is low for our data. The potential for elevating the value of R lies primarily in raising the level of performance of the criminal justice system. This will be discussed further in the final chapter.

I. R AND OFFENSE SERIOUSNESS

In Chapter 2 we presented mean offense seriousness scores for offender categories (Table 2.2, p. 18) and age groupings (Table 2.4, p. 20). These scores showed that the offenses of chronic offenders were much more serious than those of the other two offender groups. The offenses of one-time offenders averaged 148 seriousness score points; recidivists developed a mean score of 164. Chronic offenders averaged 275 seriousness score points for each offense they committed. Table 2.4 clearly indicated that as age increased, seriousness score increased. The mean offense seriousness score for juveniles was 110. The scores for all the juvenile years are relatively low. Adult offenses developed a mean seriousness score of 383 and Table 2.4 showed a substantial tendency for these scores to increase with age. The mean score for those in the 18-21 group was 299; for those in the 22-25 group scores averaged 405 and in the age 26-30 category seriousness scores averaged 517 points.

These findings have implications for maximizing the impact of R. Our models and the results we presented earlier do not take account of variations in seriousness within the same offense categories. By considering this variation we can be more precise about the policy implications of our data. In the case of the chronic offenders, the seriousness score results underline observations we have already made. Restraint has been highest for this offender category and the offense rate of chronic offenders indicates they are a logical focus for crime prevention by incarceration. In addition to the

higher return measured by numbers of offenses prevented, more social harm per offense is prevented because the chronic offender offenses tend to be more serious than those of the other offender categories.

When the notion of maximizing restraint is considered in light of the mean seriousness scores we find for age groupings, implications are not so straightforward. The relatively high numbers of index offenses we discover for offenders in the juvenile years are mitigated somewhat by the finding that these offenses tend to be much less serious than those of adults. If the seriousness dimension is to be considered relevant to the restraint issue, some trade-off between units and offense severity is required. Policy, for example, may accept a lower OJS value (i.e., a less efficient justice system) at younger offender ages because these offenses tend to be less serious than those of older offenders. More specifically, an R value of .12 for 17-year-old offenders may be considered equivalent to an R value of .15 for 22-year-old offenders. On the other hand, low values of R for older offenders may be more alarming because fewer offenses of a more serious nature are being prevented. Low R's for ages 27, 28 and 29 should cause more concern than low R values for 15-, 16- and 17-year-olds.

J. AN APPLICATION OF THE MODEL TO A SINGLE YEAR

Before exploring the policy implications of our data we wish to illustrate a further application of our model. We have already used it to estimate how much serious crime was prevented over the years by the incarceration of offenders in our cohort. The model has also been useful for specifying which offender categories have the highest restraint potential and for evaluating the effect of criminal justice system performance. The model may also be used to estimate the effect of restraint by incarceration on the crime rate. Our longitudinal data are not directly appropriate to this task, but we will adapt them under additional assumptions so that we can address the question of the effect of R on the crime rate and illustrate this usage.

We need to make an important adaption of our individual offense rate in order to use it for this purpose. Not all the offenses which constitute the individual offense rate are officially recorded and it is only the restraint of these official offenses that reduces the official crime rate. We assume all arrests are officially recorded offenses. We need to estimate what proportion of self-reported offenses are officially recorded because we should only count these offenses in computing crime rate reduction by restraint. If all self-reported offenses were included in these computations, restraint

effect would be overstated. We have no direct indication of what proportion of the self-reported offenses are also officially recorded but we can take guidance from victimization surveys. According to these data the incidence of crime is three to five times higher than official figures indicate (U.S. Department of Justice, 1976a, 1976b). Taking direction from these data we will estimate that one of four self-reported offenses is also recorded by the police. The official offense rate we use to estimate the effect of restraint on the crime rate will be the sum of arrests and 25 per cent of the self-reported offenses.

$$R' = \overline{X}_T + (\overline{X}_T^* \times .25) \times Q_T J_T S_T \qquad (15)$$

where R' = official restraint, i.e., restraint based on offenses officially recorded.

If the values of our model are computed for a sample of all offenders in a time period and geographic unit (e.g., Philadelphia in 1974), the product of R and an estimate of the total number of offenders is an estimate of the total number of official offenses prevented by incarceration. The ratio of this number to the total number of recorded offenses in the time-location frame is the proportion of official crime prevented by the incarceration of offenders.

Our longitudinal research design provides generation, not period tables--to use the terminology of life tables; our data are drawn from only one birth cohort when a sample of offenders from several birth cohorts is required for generalizing to the question of a given annual crime rate. But if we are willing to assume our cohort's history approximates that of all current offenders to age 30 (overall and within age

categories), we can provide an estimate of the effect of incarceration on the crime rate.[11] The problem is the reverse of what is usually attempted. Demographers and actuaries are normally faced with the problem of using cross-sectional data to describe the history of a generation born then. Here we wish to use our single age cohort sample as the basis for making inferences about an all-age offender cohort (up to age 30) for a single year. We wish to construct a synthetic period table from a single generation table, to again draw an analogy to life tables.

We are using estimates of age specific rates of a single birth cohort for each year. The approximate years covered by our cohort's ages 14 through 29 are 1959-1974. We intend to use these historical data as if they were representative of one year--1974. There are two reasons why we can say immediately that our historical, multi-year data will not be accurate to represent offenses and offenders for 1974: (1) the overall crime rate was increasing over the period of our data and (2) the age of the population was decreasing during this period. The former is partly a function of the latter--some of the increase in crime is explained by the fact that the younger crime-prone segment of the population was increasing during the period. Between the 1960 and 1970 censuses, for example, the proportion of males under age 30 in Philadelphia increased from 41 per cent to 51

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[11] The following paraphrases a discussion of the sampling and generalization problems with Dr. Philip Sagi of the University of Pennsylvania.

per cent of the male population of the city (Bureau of Census, 1961, 1972). Our data do not reflect this demographic change.

Further, the crime rate increased substantially during the period at issue. According to the Uniform Crime Reports, the Part I offense rate in the Philadelphia area increased from 927.4 per 100,000 in 1959 to 4179.0 per 100,000 in 1974--an increase of 450 per cent. Much of this increase is due to much higher rates in the suburban areas around Philadelphia, but the city's rate approximately doubled over the period. We have no estimate of how much of these increases are attributable to changed age composition and how much to changes in reporting or recording patterns, but it is clear these age-crime rate effects are substantial and not reflected in our single generation data. When we use our data as if they were developed from a sample of all offenders for 1974, we understate the offense rate ($\overline{X} + \overline{X}^*$) and, hence, R. We wish to correct this understatement and feel certain, based on the reducing age of the city's population and the increasing crime rate of the city over the period, that index crimes in 1974 were at least 100 per cent greater than in 1959. Because our data will already reflect some of this increase, we believe a reasonable rough approximation of the understatement is 50 per cent. The restraint estimates for 1974 from our adapted data will be increased by one-half to take account of this.

Under the assumption that our single birth cohort history is representative of the history of a single year of offenders, we use the age-specific estimates developed by our model for R. and then use (15) to estimate "official" restraint (R'). After this we

TABLE 4.5

SIMULATED PERIOD TABLE FOR 1974: OFFICIAL RESTRAINT VALUES, SIZE OF OFFICIAL PHILADELPHIA OFFENDER POPULATION AND NUMBER OF INDEX CRIMES PREVENTED BY INCARCERATION

Offender Category--Age	R'	Offender Population (a)	Index Crimes Prevented
14	.024	1528	37
15	.027	1885	51
16	.039	2305	90
17	.026	1586	41
18	.017	1302	22
19	.086	1302	112
20	.063	1193	75
21	.105	936	98
22	.099	759	75
23	.031	854	26
24	.037	841	31
25	.062	688	43
26	.072	599	43
27	.047	548	26
28	.018	395	7
29	.019	420	8
			785

TABLE 4.5 (CONT.)

SIMULATED PERIOD TABLE FOR 1974:OFFICIAL RESTRAINT VALUES, SIZE OF OFFICIAL PHILADELPHIA OFFENDER POPULATION AND NUMBER OF INDEX CRIMES PREVENTED BY INCARCERATION

(a) We estimate offender populations for the 16 age categories (14-29) with a factor developed from census data. According to the 1950 census, taken when our cohort was five years of age, the city's five-year-old population was 15.59 times higher than the size of our sample (971). In 1959 our cohort was age 14; we use this 1950 ratio and multiply the number of 14-year-old official offenders in our sample (98) by it to get an estimate of the total number of 14-year-old offenders in Philadelphia. According to the 1960 census when our sample was age 15, there were 13.56 times the number of 15-year-olds in the city as in our sample. To estimate the total number of offenders in Philadelphia for the ages 15 through 24 we multiply the number of offenders at these ages with officially-recorded police contacts by the 13.56 correction factor. In 1970 the correction factor is 12.74. We estimate the number of offenders at each of the ages 25 through 29 by multiplying it by the number of offenders in our sample.

are left with the problem of estimating the total number of offenders and use census data to assist.[12] Table 4.5 provides the estimates of R', offender population, and the number of official index offenses prevented under the offending rates and criminal justice system performance through our cohort's age 29.

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[12]See footnote (a), Table 4.5 for an explanation of how we estimate the number of offenders in age categories.

The data of Table 4.5 provide the information we need to estimate the number of index offenses prevented in 1974. The sum of the last column (785) is the total number of official index crimes prevented for all offenders between ages 14 and 29. We increase it by 50 per cent to take account of the aforementioned age-offense rate inaccuracy of our single generation data (785 x 1.5 =1178). Now we can estimate the restraint effect of incarceration on Philadelphia's crime rate. Under our model and the assumptions we have made, 1178 official index offenses were prevented in the city in 1974 by the incarceration of offenders between ages 14 and 29.

The Philadelphia police tell us there were 81,262 Part I offenses reported in the city during 1974. We estimate 56,883 (70%) were committed by males under age 30.[13] We compute the proportion of official index offenses prevented by incarceration of offenders in Philadelphia during 1974 as follows:

$$\frac{1178}{56{,}883 + 1178} = .020.$$

We estimate that the 1178 index offenses prevented by the restraint of offenders had the effect of reducing the 1974 Philadelphia crime rate by 2 per cent. Many more than 1178 index offenses were prevented by the incarceration of offenders but only this number of official offenses was prevented.

Our estimates of crime rate reduction resulting from restraint are different from others. Some consider only officially recorded offenses so that we would not expect our estimates to be comparable

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[13]This figure is not available with any precision, but we estimate from Uniform Crime Reports data that approximately 15 per cent of index offenses are committed by females and 15 per cent by males age 30 or older.

to theirs (Clarke, 1975; van Dine, 1977). Others estimate higher individual offense rates than we have found (Avi-Itzhak and Shinnar, 1973; Shinnar and Shinnar, 1975). The much higher estimates of the crime prevention potential of incarceration by these authors is largely a function of these high estimates.[14] Our estimates of individual offense rates and percentage reduction in the crime rate from restraint of offenders are closest to those of Greenberg (1975). He estimates approximately two index offenses per year per offender and a maximum of an 8 per cent savings in the index crime rate resulting from the incarceration of offenders. The former estimate is about what we have computed from our data for the chronic offenders (1.86). But we know our estimate is conservative here because of the absence of self-report data for ages 26-30 and our conservative career length estimates. We expect chronic offenders commit about 2.4 index offenses a year over their career. But we can also observe from our age specific computations that this figure is higher at some ages. The offense rates for chronic offenders and for some ages suggest a policy of restraint would be maximized by concentrating on some groups.

Such concentration can raise restraint but it is clear from our data that high percentage reductions in the crime rate are not realistic short-term expectations. Our data suggest the present effect in Philadelphia is about 2 per cent. More rational allocation of restraint to age and offender categories may improve that percentage and criminal justice system performance itself may also be

[14]Cohen (1976:30), in a review of the research done on the incapacitation issue, found that the different estimates found of this effect are primarily a function of different estimates of offense rate.

improved. Short-term improvements will be modest when compared to the projections of some; but an additional 2 per cent reduction in the official index crime rate plus the index offenses prevented which are not included in the official rates translates into several thousand fewer index offenses per year at 1975 offense levels.

K. CHRONICITY REDEFINED

We have grouped our offenders consistently as either one-time, recidivist or chronic--the latter being defined as those who have five or more officially recorded police contacts. Our data have demonstrated this group committed most of the serious offenses. The model computations also indicated the chronic offenders were a distinct group. Examining those offenders who have been charged with four or more offenses we find they are similar to the chronic offender group on the dimensions at issue here. Table 4.6 makes the comparison explicit.

TABLE 4.6

COMPARISON OF OFFENDERS WITH FOUR AND FIVE OFFICIALLY RECORDED POLICE CONTACTS: OFFENSE RATES, CAREER LENGTH, PROBABILITIES OF CONVICTION, INCARCERATION AND MEAN INCARCERATION TIME

	4 or More Offenses (N=174)	5 or More Offenses (N=145)
Annual Total Index Offense Rate	1.77	1.86
Career Length	8.78	9.26
Q_T	.072	.081
J_T	.583	.587
S_T	.92	.92

It is clear those offenders who commit a fourth offense are very similar to those who commit a fifth. An earlier table indicating the probabilities of recidivism and of committing an index offense in Chapter 2 also indicated the fourth offense is the logical boundary between those who are likely to have long and serious offense careers and those who are likely to offend less frequently and seriously. The comparative values of Q, J and S also indicate the criminal justice system begins to view the fourth-time offenders as they do the chronic offenders. These values are much more like those of the chronic offenders than they are like those of the recidivists. When we discuss policy implications from our general model categories from this point it will be under a new definition of the chronic offender--one who has four or more officially recorded police contacts. Under this new definition 37.9 per cent of offenders are chronic and 17.9 per cent of the total sample are chronic offenders.

L. SUMMARY

Based on our cohort data, we estimate that for each chronic offender incarcerated for a year about 2.4 index offenses will be prevented; incarceration of such an offender for two years will prevent 4.8 index offenses. Our general model indicates this offender category is a rational focus for any policy of restraint by incarceration. The highest number of index offenses will be prevented and these offenses tend to be more serious than those of non-chronic offenders.

The age specific model allows greater precision in evaluating policy implications of restraint. The annual number of index offenses committed is highest in the juvenile years; these numbers are lower and relatively stable in the adult years to age 30. But since offenses committed at the older ages tend to be much more serious, the implications of the restraint model estimates are not straightforward. Policy makers, for example, may opt for attempting to prevent fewer offenses (but more serious ones) by the incarceration of adult offenders.

When we allocate offenses prevented by restraint to arrests or self-reported categories, the former represents 14-24 per cent of the total. Most of the index offenses prevented by incarceration are those that would never have been charged officially to a particular offender.

Overall, the efficiency of the combined juvenile-adult justice system in Philadelphia during the 1959-1974 period for our cohort

offenders was .029; on the average, offenders were incarcerated for less than 3 per cent of a year (11 days) for each index offense they committed. The system was most effective against chronic offenders; it was least effective in the case of juveniles.

Low QJS values for juveniles appear to reflect a lower probability of arrest (Q_A) since, given arrest, the disparity between their values of QJS and those of adults is considerably reduced. The difference between juveniles and adults is most dramatically demonstrated by the numbers of index offenses committed for each arrest. Juveniles report committing 8-11 index offenses for every one officially recorded; adults report 3-6 for each one officially recorded.

There is a multiplicative relationship between the criminal justice system performance term and restraint such that the increase in R which results from the elevation of QJS is magnified. At an offense rate of three index offenses per year, a one per cent increase in QJS results in a three per cent increase in R. Given the relatively low level of criminal justice system performance as measured here the potential impact of increasing QJS is substantial. The higher values of R observed at ages 19-22 are primarily a function of QJS values and demonstrate the importance of criminal justice system performance in the prevention of offenses by incarceration.

We estimate the incarceration of offenders in our cohort prevented 26,500 index offenses between their ages 14 and 29. We further estimate under assumptions that "convert" our longitudinal data to cross-sectional data that the effect of the incarceration of offenders in

Philadelphia in 1974 was to prevent 1178 index offenses and to keep the city's index offense rate 2 per cent lower than it would have been if no offenders had been incarcerated.

CHAPTER 5

POLICY AND CONTEXT

A. THE ENLIGHTENMENT MODEL

Research which has one eye on public policy implications is inherently complex. The conceptual and empirical research tasks need to be developed and/or interpreted within social and political contexts. We have discussed the relevance of values in Chapter 1, but bring that and other related issues up again here lest we forget the models we developed are incomplete. They do not include value or policy terms and are largely atheoretical. The problems associated with doing research which is policy relevant, directly or indirectly, have received considerable attention over the last ten or fifteen years. In criminology these issues have become especially relevant since the passage of the legislation which created the Law Enforcement Assistance Administration in 1968 and which eventually resulted in increased federal government funding for criminological research.

Boguslaw calls those concerned with modern computer-based social engineering "the new utopians"; he sees a tendency on their part to forget they are dealing with human beings. Unlike the classical utopians like More or Orwell, they are concerned with efficiency--not with humanitarianism (1965:3, 24-25, 202). It is easy when armed with a model (or two), the data processing and increased analytical capacity provided by computer technology, and a well-delineated research task to allow the individual to disappear from view. In fact he must; models

cannot incorporate value terms and unaggregated units. For these reasons we wish to make explicit our position toward policy research.

It is close to what Janowitz calls the "enlightenment model" (1975:250-254). He compares this approach to a more rigorous one that he names the engineering model; the latter is concerned with definitive answers and cause and effect relations (p. 252). The former is involved in causal analysis and is committed to the scientific method but incorporates notions of social context, social control and ideology. Street and Weinstein distinguish the enlightenment model from two others they call the social engineering and the radical; its goal is "to enlighten the decision-makers in as broad a way as possible" (1975:70).

We have been concerned here with efficiency in the justice system; the policymakers are interested primarily in such questions. But we also agree with Janowitz that "data must be integrated in terms of some general [or theoretical] notions" (1970:52). We have attempted in Chapter 1 to provide a conceptual orientation toward deterrence which incorporates the notion of restraint. Ultimately, the utility of such research as ours will depend on theoretical integration, but this progress must come later.

Whenever possible, in the balance of this chapter, we will raise explicitly those political, social and individual issues we believe to be relevant to our discussion of policy implications. Specifying such implications rarely involves simply a simple logical leap from data. A variety of constraints usually intrude. In this regard we believe Miller is

correct when he says "[i]deology is the permanent hidden agenda of criminal justice" (1973:141-163).

B. THE NOTION OF SYSTEM

It is both accurate and inaccurate to speak about "the criminal justice system." It is accurate because the widespread and divergent elements that make it up do give some indication of being part of a single system; they are concerned for example with the same general goal of crime control. But it is also inaccurate to describe the far-flung elements of criminal justice as making up a unitary system. Philadelphia Family Court and the California State Supreme Court are very distant from each other in many ways. They both serve a judicial function of criminal justice, but this commonality of function is not real at the operational level. It is true the same federal constitution applies and thus the interpretation of this constitution by the Supreme Court of the United States will affect the operation of both units, but their everyday operations are as distant as Philadelphia and Sacramento. Only to the extent that federal legislation and judicial interpretation determine their structure and operations ought they be considered part of the same system.

Even though criminal justice systems are not unitary they will share some characteristics important for any consideration of policy implications. The modern urban system is bureaucratized and should be expected to react as a bureaucracy. The individuals who occupy roles within these bureaucracies should also be expected to react typically to change. Neither the bureaucracies nor the bureaucrats should be expected to cooperate enthusiastically in instituting the changes we may plan for them. In addition to the anxiety and threat

change itself often creates, there are very real problems of capacity and authority/power.

We have already spoken about capacity and the effect of increased levels of conviction and incarceration for prisons. These capacities, already stretched in many places, would be exceeded quickly with only moderate increases in conviction and incarceration probabilities. Analogous capacity limitations apply to other criminal justice system segments. If the courts were to attempt to raise conviction or incarceration probabilities, i.e., raise the punishment level, they would have to be careful not to prosecute in such a way as to paralyze the system. Modern urban criminal courts need to process very large numbers of people. Even minor alterations (e.g., a 10 per cent reduction in guilty pleas) in their mode of operation could quickly create major problems of backlog and paralysis. The criminal justice process between arrest and sentencing is largely one of negotiation and the outcomes of these negotiations depend to a considerable extent on the allocation of incentive. If a lower reward is offered for a guilty plea, fewer are likely to plead guilty. A change in policy that would mandate prison sentences when probation had been the common sentence would likely encourage fewer defendants to plead guilty. Yeager (1976:13-15) claims there has been such a reaction to the harsh New York State drug laws.

In addition to problems of capacity which need to be considered as a factor, change in the criminal justice system may encounter other forms of resistance. Radzinowicz noted how the English judicial system

in the 18th century avoided imposing and carrying out death sentences it felt were unjustified (1971). Zimring and Hawkins call this tendency of the system to refuse to apply sanctions it considers unreasonable "nullification of the law" (1973:62). Judges resist sentencing accountability requirements because they limit their discretionary power (Robin, 1975) and correctional systems refuse to implement court directives they regard as encroachment (Sullivan and Tifft, 1975). In short, the criminal justice system has a demonstrable capacity to avoid or mute policy directives instigated in other times and places. All this is to underline again the complexity of issues involved in attempting to bring about change in penal policy. A totally rational criminal justice policy is not possible (or desirable).

C. INVALIDITY AND INFERENCE

We mentioned some of the problems associated with official crime statistics in Chapter 2. By comparing official police data and victimization survey data for Philadelphia for two years we found evidence that the official data were racially biased for the offense of aggravated assault. In this section we wish to talk about another kind of invalidity--the manipulation of official crime data for bureaucratic or political purposes.

Seidman and Couzens (1974) looked at Washington, D.C. crime statistics before and after the installation of Jerry Wilson as chief of police. They found police data were systematically distorted after Wilson took over. This was most noticeably true for the felony of larceny; police systematically underestimated the value of the stolen property to depress the number of such crimes. The authors claim to have demonstrated "a pure case of the reactivity of a social indicator" and see it as a response to political pressure to reduce the crime rate (p. 476). They claim systematic distortion by police in other cities as well arising from various kinds of pressures and conclude "the Uniform Crime Reporting System is useless as a tool for evaluation of social policy" (pp. 484-485).

Milakovich and Weis (1975) also discuss the bias of official crime rates arising from manipulation for political purposes. "These statistics . . . are self serving measures of organizational effectiveness and a poor index of the true incidence of crime" (p. 10). On the other

hand, Skogan (1974) recognizes problems with official statistics, but concludes they are useful indicators of the relative distribution of crime across cities and within cities. The volume is inaccurate, he says, but comparisons may be legitimate.

The general influence of the Uniform Crime Reports is difficult to overestimate. Budgetary decisions involving millions of dollars are influenced by them; politicians and administrators are elected or appointed based on what they say about the volume of crime; individuals walk or do not walk on the streets on the basis of the attitudes they help create. But how should we view them here for our purposes? First, since the individual offense rate is augmented by self-report data, the values of our models are largely independent of their accuracy. Only Q in our criminal justice system term is affected and this only to the extent that the official frequency of index offenses is reflected in the denominator of the formula to compute Q. The individual offense rate is made up of official and self-reported offense behavior; the former represents a relatively small proportion of the total. Since few would argue official data overestimates, distortion underestimates $\overline{X}$ and R.

Our concerns about the systematic bias or reactivity of official data are two. First, our models suggest a higher degree of coercive intervention into the lives of official offenders (offenders not arrested never become candidates for incarceration). To the extent these model results are determined by a biased arrest sample, we may multiply the injustice. Second, since it appears the Uniform Crime

Reports are politically responsive, comparison of different jurisdictions with each other and comparison of the same jurisdiction over time may not be valid. This is a serious problem and suggests we need to develop and systematically use alternative measures of the incidence and distribution of crime. Continued replication of victimization surveys would appear to be the best current alternative. Recognition of problems with official statistics as a measure of crime is as old as the measures. But with the current inclination and capacity to bring more powerful analytical tools to bear on criminological issues, the lack of adequate indicators of crime genuinely inhibits progress.

D. DICHOTOMIZED JUSTICE

Any attempt to draw policy implications from career offense data must take account of the independent systems of juvenile and adult justice. This independence has special implications for any policy that attempts to draw its tenets from consideration of combined juvenile and adult criminal career patterns. In a sense the adult offender starts a new career because of the separation of the justice systems. The juvenile's record is rarely available to the adult court. The 18-year-old offender may have committed many previous offenses--including several index offenses--as a juvenile.

There are good arguments for maintaining separate systems of juvenile and adult justice and not many would argue for a single system. But many would also agree there ought to be some continuity between the two. It may be advisable for example to share a juvenile's previous serious offense history with an adult sentencing authority. The policy implications we draw from our findings will assume it will be possible to ascertain what the accumulated offense history of an individual happens to be. Under present legal conditions this is not possible. If this continues to be the case, considerable inefficiency will continue since when the juvenile leaves that status he also leaves his offense history behind, and criminal justice system decision makers cannot be guided by it.

E. SPECIAL JUSTICE

To construct a crime control policy around the notion that certain offenders should be handled differently may be considered a dual standard of justice. In fact the notion of justice in some sense is inconsistent with the idea of basing punishment on anything more than just deserts for the current conviction. But this logical clash between notions of equal justice and the idea of efficiency and costs and benefits is unavoidable. The philosophical notion of justice is bound to be at odds with a strategy of maximizing return. Packer's ideal typical explication of the due process and crime control models of criminal justice illustrates what we mean (Packer, 1968).

Regardless of the rhetoric which may be used to describe criminal justice system functioning, we appear to be operating already under a crime control model with emphasis on efficiency. The classical confrontation between the people's advocate and that of the accused is only rarely characteristic of the everyday operations of American criminal justice. But it is only in recent years that this reality has been made explicit and has become generally acknowledged.

Special programs to maximize criminal justice system sanctions against chronic offenders have been underway for some time. Some prosecutors' offices have a special section to deal with "career criminals." In fact, our own QJS value for chronic offenders suggests seriously persistent offenders may have been receiving special attention in the Philadelphia justice system for some time. According to

our findings it is also true that concentrating resources on the serious offender can maximize crime control by restraint. Some may object to special handling for those with serious official records, and courts of appeal could find some constitutional violation in this approach. In the meantime, this duality is an operational reality and does not seem inappropriate if available data are accurate in indicating there is a relatively small percentage of offenders committing a large percentage of serious offenses.

F. QJS: TRACTABLE OR NOT

The efficiency implications of our data are fairly clear. The maximum potential for affecting the crime rate by restraint of offenders would be to incarcerate juvenile offenders. For each index offender incarcerated in the 14-17 age span, four to five index offenses would be prevented. But given the likelihood that the juvenile justice system will continue to incarcerate offenders on a limited basis, restraint will probably be used most often in the case of adult offenders. For each adult offender incarcerated for a year between the ages of 18 and 25, roughly three to three-and-a-half index offenses will be prevented. Our general model indicates the restraint of chronic offenders will have the greatest per capita impact. For each such offender incarcerated, regardless of age, we estimate two-and-a-half index offenses per year will be prevented. We would begin to see this relatively high restraint effect if we begin to use a special or mandatory policy after the fourth officially recorded police contact. The probability that such an offender will recidivate is about .8 and the likelihood that his next offense will be an index one ranges between about .28 and .65 over the next 16 offense transitions (see Table 2.3).

The per capita restraint effect also depends on criminal justice system performance (QJS). We have seen this value is low for juveniles, higher in all the adult years through age 29 and highest in the younger adult years 19-22. The low value of QJS in the juvenile years is a result of a very low probability of arrest and low

probabilities of conviction and incarceration relative to adults. There are no systematic juvenile-adult status differences observable on S--the average length of incarceration. The chronic offender is more likely than other offenders to be arrested, convicted, incarcerated and to remain incarcerated for a longer time.

In a consideration of policy research and the kind of independent variables such research should seek, Scott and Shore (1974) maintain that a primary aim should be that they be "tractable." Researchers should seek to identify such variables as are "accessible to control or manipulation" (p. 52). The three variables which make up our criminal justice system term may be that type. Their values, independently and collectively, may be responsive to policy decisions. We will consider each of them in turn from this viewpoint; the individual offense rate helps determine the value of R, but is not accessible to policy in the direct sense that the QJS terms are.

Q is actually the product of the likelihood of arrest and the likelihood of conviction given arrest. Examination of these probabilities separately indicates arrest to be most unlikely and conviction, given arrest, to occur from about one-third to one-half the time depending on offender category. The probability of arrest would not seem to be a tractable variable; it is a contingency determined by a configuration of police, victim and offender behavior and characteristics and thus not amenable to manipulation or control. The probability of conviction given arrest may be more responsive to

attempts to increase it, although it is not clear how that might best be accomplished.

There seems to be little doubt that the likelihood of conviction has diminished in recent years. We have already referred to the evidence presented by van den Haag, Wilson, and Shinnar and Shinnar. Our own data support such an interpretation although as we have said we cannot be sure whether the decreasing probability of conviction with increasing age in the adult years is an effect of age or one of time period. There is considerable evidence that conviction is less likely in recent years. Federal court data, for example, show that this rate decreased steadily over most of the 1964-72 time period. Over all jurisdictions the conviction rate was 87.4 per cent in 1964; in 1972 it was 75.4 per cent--about a 16 per cent decrease. The numbers of convictions are up substantially over these years (U.S. Administrative Office of the United States Courts, 1975). This leads us to wonder about the relationship between volume of cases and conviction performance. At least one researcher believes the likelihood of conviction may be determined by the magnitude of the task (Phillips and Votey, 1975). As the volume of cases goes up, the percentage of convictions goes down. This makes some sense when one remembers the way modern criminal courts operate. A large volume creates considerable pressure to move cases through the system. This has two effects. The less serious case is more likely to be nolle prosse'd and those defendants whose cases remain may be in a better bargaining position owing to the adverse impact their insistence on all their

legal rights can have on court operations. Both of these factors would tend to reduce conviction probability.

Given the nature of the typical criminal court processing requirements, it seems unlikely that the value of Q can be affected significantly under present resources and legal requirements. But even a very small percentage increase would have a substantial effect. A 1 per cent increase in this probability in Philadelphia would amount to over 800 additional convictions for index offenses at 1975 offense levels. At the overall incarceration probability we found, that would mean about 460 additional incarcerations averaging just under one year each. Such a moderate increase in conviction probability is possible within present resources.[1] If achieved, the impact on Philadelphia's and Pennsylvania's prisons would be substantial; they would have to accommodate an additional 415 man years of incarceration. The number of index offenses prevented would also be substantial; depending on the distribution of offender category in the incarcerees, the savings would range from more than 300 to over 1100 index offenses. If that 1 per cent increase in guilty findings were accumulated mostly

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[1]When we speak about increasing conviction probability, we assume that close to 100 per cent of those arrested for index offenses have committed the offenses for which they were arrested. If conviction levels are raised, the number of innocent people convicted will also go up. If almost all of those arrested have committed the offenses for which they are arrested, we may accept the additional numbers of convicted innocent people as an unfortunate, unavoidable product. But if the percentage of innocent arrestees amounts to more than a small percentage, the increased level of injustice may not be acceptable. We are inclined to believe offenders are not usually arrested unjustly for serious offenses but can offer no rigorous empirical evidence of this.

from the chronic offender category, the savings would be closer to 1100 than 300.

Changes in budget and staff may also alter the probability of conviction. Increases here would presumably facilitate the conviction of a higher proportion of offenders if the volume of cases remained stable. Another major condition affecting the proportion of guilty findings is the legal context. By legal context we refer to the configuration of laws and judicial interpretations under which convictions are sought. Alteration of these circumstances could also affect conviction probability. In recent years, defendants have secured additional legal rights (attorneys, evidentiary hearings, etc.) which have affected their power in the judicial procedure and may partially explain lower conviction rates. If rights of this kind are further extended, conviction may become less likely; if they are limited, conviction may become more likely.

Summarizing, we see four major factors which affect the probability of conviction given arrest:

1. the volume of cases,
2. the operational efficiency of the court,
3. budgetary and personnel resources, and
4. legal context.

The first is not a tractable variable; the last three are. Increased operational efficiency, additional resources and abrogation of individual legal protection may each elevate the likelihood of conviction;

their counterparts may reduce it. An example of an attempt to increase Q by selectively raising numbers 2 and 3 is the career offender statute.

J is a more tractable variable than Q, being limited by judicial inclination to incarcerate convicted offenders and by limited prison capacity and resources. The value of J is high relative to Q; it ranges from .33 to unity across all offender categories and normally stays above .55. Thus it appears Philadelphia judges are not averse to incarcerating convicted index offenders; four of five older offenders are so handled. They do not remain incarcerated for long periods as the mean-time-served variable indicates. This average is less than one year for all offenders and for chronic offenders.

We speculate that judges respond to pressures against incarceration by routinely releasing incarcerated offenders before they serve their minimum sentence.[2] Our data indicate offenders serve less than the minimum sentences they receive. Depending on offense type, they serve from 48 per cent to 86 per cent of this minimum for index offenses. This is not explained by "time off for good behavior." There is no such provision in Philadelphia where the majority of our subjects served their sentences. The judges maintain control over the release decision up to the expiration date of the minimum sentence and our data indicate they routinely respond positively to petitions for early release from incarcerated offenders.

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[2]Such pressures can encompass a variety of considerations--shortage of prison space is an example.

In his research on racial disparity in sentencing, Green (1964) found no evidence for racial bias. He speculated that such injustice, if it occurs, is likely to occur in less visible ways. Racial discrimination, regardless of the extent to which it may exist in the social structure, is strongly disapproved as a principle and considered unjust. If it were to exist at the visible sentencing stage, it would be a blatant contradiction. An analogous interpretation is suggested to us by the finding that offenders do not serve their minimum sentence. The sentencing process is visible and laden with symbolic content. It is at this point that the judge expresses society's disapproval of criminality in a measurable way. Index offenses are serious violations of community norms and thus must be severely punished; the judge's sentence is the measured amount of punishment deemed appropriate. But later, under other pressures and considerations, the disapproval is attenuated. Prison space may be at a premium, its budget stretched thin; the judge and others may feel humanitarian pulls or concern about the criminogenic effect of prison. These later considerations may be viewed as sufficient justification for mitigating the severity of the original sentence. Our interpretation may not be accurate, but it is consistent with the observation that offenders do not serve the minimum incarceration sentences they receive. It is also another example of the complexity involved in the consideration of criminal justice system policy.

Both J and S are tractable variables. The latter would appear to be most susceptible to elevation if policymakers decide restraint should

be extended. Our data indicate that extending the time incarcerated index offenders serve to two years would increase restraint impact 2.2 times. It is true this is probably not possible under existing prison resources. Some increased capacity may be achieved by not incarcerating certain classes of offenders, but a strategy of prevention which sought to raise restraint impact by incarcerating more offenders and/or extending the time they served would require more prison space.

G. THE FUTURE

The tone of public and private pronouncements about "the crime problem" in 1977 reflects the fear and frustration which have accompanied increased levels of serious crime and the failure of these rates to respond to previous penal policy and practice. Recent interest in deterrence is one manifestation of a search for new alternatives. Any new approach ought not be short-sighted.

We may well decide to construct more prisons so that we can incarcerate more serious offenders, but we should recognize our serious crime rate is likely to decrease as we move toward the end of the 20th century due to demographic changes (Zimring, 1975; Fox, 1976). We are becoming an older population.

It is interesting to speculate about what we may do in 2015 (or sooner) with the prisons that might be built today. They would cost millions to construct and need bureaucracies to manage them. Since it would be wasteful to close them and difficult to disband the bureaucracies, we may decide to convert them to old age homes.

APPENDIX A. DATA SOURCES

The reader is referred to chapters 1 through 3 of Delinquency in a Birth Cohort for the background and description of the basic methodology and early activity of the Philadelphia cohort research. The findings of the research's first stage (to age 18) are reported in that book. The second stage of this research gathered data on a 10 per cent sample (N = 975) of the original cohort up to age 26. This second phase conducted interviews with more than half of the sample and thus broadened the scope of the data. The data gathering techniques and methodology employed at this stage will be reported in an upcoming publication. This third research stage has used official sources to add data for 971 subjects of the cohort sample through age 30. This stage also broadened the scope of the data by adding arrests outside Philadelphia to the offense histories of our subjects and by gathering detailed information from courts and institutions for a large percentage of adult arrests.

In this third stage, we have relied on several official sources for our data:

1. Philadelphia Police Criminal Record Extracts (form 75-10);
2. Philadelphia Police Investigation Report Narratives (form 75-49);
3. Philadelphia Police Arrest Reports (form 75-50);
4. Federal Bureau of Investigation Records (master form 1-4);

5. Common Pleas Court of Philadelphia Court History (computer print-out);

6. Philadelphia Prison Detentioner and Sentenced Inmate Records (forms 86-38, 86-35); and

7. Miscellaneous Jurisdictions: Reports on Incarceration.

We began the last stage of the research in the summer of 1975 by going through the Philadelphia Police Department's rotary file and checking each name in our sample. For each subject we had the individual's race and date of birth and, for most, at least one address. If an individual has had an officially-recorded police contact, he is listed in the file. When an individual appeared in this file, we requested that the police provide a criminal extract (#1 above). This record provides a cumulative listing of the individual's recorded contacts with the Philadelphia police. Some of the offenses listed had been included in the cohort data at an earlier research stage. If we discovered an unrecorded offense, we requested that the police provide us with details.

These offense details (source of complaint, description of offense, injury and damage information, etc.) are provided by forms 75-49 and 75-50 (#2 and 3 above). These reports were used in the coding process. The arrest report also provides some preliminary dispositional information. This was used in conjunction with the court print-outs to record the outcomes of the arrests further on in the criminal justice process.

We submitted the names, dates of birth and race for each cohort

sample member to the F.B.I. They conducted a search of their records and sent us "rap sheets" for all those individuals who had an F.B.I. file. From these records we added offenses to our files that had not been discovered from the local police. For the most part, i.e., "these contacts unrecorded in Philadelphia..." were offenses committed outside the city; out-of-town arrests are not routinely entered in the local police files. The F.B.I. information was also useful for augmenting our dispositional data. Often sentences were indicated or we were directed to incarceration information by an entry in the F.B.I. rap sheet.

For the most part, our cohort committed their offenses in Philadelphia--about 93 per cent of all arrests were in the city. Thus the bulk of our dispositional data was collected from the Philadelphia courts and prisons. The courts began a computerized information system in the late 1960s. This was of considerable help because detailed dispositional information is provided by these records.

Since we were especially interested in whether and for how long our subjects may have been incarcerated, we examined the files of the Philadelphia prisons for most of the adult years of our subjects. Records for the year 1963 were not available. That was the year that the new Philadelphia Detention Center was opened and the year record-keeping practices were changed as the records began to be housed in the Detention Center. There are three adult institutions in the city: the Detention Center, the House of Corrections and Holmesburg Prison. All are located on the same general tract of land in the northeast

section of the city close to the Delaware River. A serious attempt has been made by the prison administration to keep records as complete as possible, but movement of both records and inmates between the three institutions has resulted in some losses.

We have gone through all of the admissions cards available in our search for incarceration records for our subjects. We cannot be sure how many incarcerations were missed but there were probably some. For example, in the year 1966, inmate cards for the alphabet from "St" through "Z" were missing; a check of our files shows that eight of our subjects have names in that alphabet set. If any of them were incarcerated in 1966, we would not have collected that information. For 1968, "He" through "Pa" records were missing, so we may have missed some data here as well. We do not believe these gaps to be a serious problem as we can ascertain the fact of an incarceration from several of our data sources. When we discovered an incarceration took place which was missed in our search of the prison records, we computed a mean time served for the offense type and assigned that value to measure incarceration time (see note (d) to Table 4.2).

Some of our subjects were incarcerated in institutions outside Philadelphia. We were alerted to these primarily through the F.B.I. records. We sought and secured the cooperation of the Federal system and eleven state and local institutions involved and requested information on each incarceration. Our response rate was 100 per cent although the institutions involved were not always able to locate their records and provide the data we requested.

We have used all these data sources, singly and in combination, to record as much pertinent offense and dispositional information as could be gleaned from official sources. The offense information is complete--very little information is missing. The dispositional data are less complete although we have managed to collect and code at least some dispositional information on 94 per cent of all adult offenses.

APPENDIX B: RACE AND OFFENDER CATEGORIES

By the age of 30, 47 per cent of those in our sample have had at least one officially recorded police contact. There is a substantial difference between whites and nonwhites of our cohort in the likelihood that an individual will have an official police contact. Whites have a 38 per cent chance; nonwhites have a 70 per cent chance of having an officially recorded police contact by age 30. There are also significant differences between the races in the frequency of official police contacts. Table A.1 provides racial breakdowns for one-time offenders, recidivists (2 to 4 offenses) and chronics (5 or more offenses).

TABLE A.1: OFFENDER FREQUENCY CATEGORIES BY RACE: PERCENTAGES OF OFFENDERS

	White	Nonwhite	
One-time	43.0 (113)	27.1 (42)	33.8 (155)
Recidivist	39.2 (103)	28.6 (56)	34.6 (159)
Chronic	17.9 (47)	50.0 (98)	31.6 (145)
	100.0 (263)	100.0 (196)	100.0 (459)

The offender population is almost evenly divided among the three categories--roughly one of three in each. To state this breakdown another way: two of every three individuals in our sample who have an officially recorded police contact go on to have at least one more; almost one of three eventually have at least five officially recorded police contacts.

The table also indicates that whites are more likely to fall into the less serious offender categories than are nonwhites. They are more likely to be one-time offenders or recidivists. Half of all nonwhite offenders go on to become chronic offenders; only 18 per cent of white offenders are so classified.

In Table A.2 we categorize offenders as either delinquent only (all officially recorded police contacts before age 18), adult only (official contacts between ages 18 and 30 only) or as both delinquent and adult (official contacts during both age spans). Thirty-seven per cent of all offenders have all their officially recorded contacts prior

TABLE A.2: OFFENDER PERIOD CATEGORY BY RACE: PERCENTAGES OF OFFENDERS

	White	Nonwhite	
Delinquent only	47.9 (126)	22.4 (44)	37.0 (170)
Adult only	23.6 (62)	27.0 (53)	25.1 (115)
Both delinquent and adult	28.5 (75)	50.5 (99)	37.9 (174)
	100.0 (263)	100.0 (196)	100.0 (459)

to age 18; 25 per cent are classified in the adult only category and 38 per cent have official contacts as juveniles and adults. There are important differences between the races on this dimension. Nonwhites, if they have any official contacts, are most likely to have official juvenile and adult contacts. Whites have a much greater likelihood than nonwhites of being in the delinquent only category; 47 per cent of all

white offenders are so classified--only 22 per cent of nonwhite offenders are in this class. If a nonwhite has any officially recorded police contacts there is a 51 per cent chance that he will have at least one in the juvenile years and one in the adult years to age 30. Only 29 per cent of the whites who have at least one officially recorded police contact will have contacts in both juvenile and adult years. The races do not differ substantially in the adult offender only category; white offenders are so classified 24 per cent of the time--nonwhites 27 per cent.

In Table A.3 we combine the vertical dimensions of the two previous tables and display percentages of offenders in the delinquent only, adult only and in the both delinquent and adult categories against the offender frequency categories--one-time offenders, recidivists and chronic.

TABLE A.3: OFFENDER PERIOD BY OFFENDER FREQUENCY CATEGORIES: PERCENTAGES OF OFFENDERS

	One-time	Recidivist	Chronic	
Delinquent only	63.2 (98)	35.2 (56)	11.0 (16)	37.0 (170)
Adult only	36.8 (57)	23.9 (38)	13.8 (20)	25.1 (115)
Both Delinquent and Adult	(0)	40.9 (65)	75.2 (109)	37.9 (174)
	100.0 (155)	100.0 (159)	100.0 (145)	100.0 (459)

Sixty-three per cent of those offenders who only have recorded police contacts as juveniles are charged only once; thirty-five per cent of the offenders in the delinquent only category are officially charged

two to four times. And of the offenders who are charged only in the delinquent years, only 11 per cent have five or more officially recorded police contacts. Offenders who are only charged as adults also tend to be in less serious one-time offender and recidivist categories--37 per cent are in the first and 24 per cent are in the second. Those offenders who have official contacts in both juvenile and adult years have the highest likelihood of being in the chronic offender category. Three of four (75%) are chronic offenders.

In Table A.4 we display the offender category dimensions of the previous tables broken down by race of offender. We can look at the comparative percentages of white and nonwhite offenders in the one-time offender, recidivist and chronic categories across the offender period categories. The table indicates that with the exception of one two cell comparison, nonwhites are more likely than whites to be in the more serious offender group. The comparison between the races on the recidivist-adult only dimensions indicates a slight tendency for nonwhites to be classified as recidivists. But overall within the adult only category it is still clear that nonwhites are more likely to be in the more serious offender categories. The bottom row of the table (next page) shows that within the three offender period categories nonwhites are much more likely to become chronic offenders.

TABLE A.4: OFFENDER FREQUENCY AND PERIOD CATEGORY BY RACE

	Delinquent Only		Adult Only		Delinquent and Adult		
	White	Nonwhite	White	Nonwhite	White	Nonwhite	
One-Time	58.7 (74)	54.5 (24)	62.9 (39)	34.0 (18)	(0)	(0)	33.8 (155)
Recidivist	35.7 (45)	25.0 (11)	32.3 (20)	34.0 (18)	50.7 (38)	27.3 (27)	34.6 (159)
Chronic	5.6 (7)	20.5 (9)	4.8 (3)	32.1 (17)	49.3 (37)	72.7 (72)	31.6 (145)
	100.0	100.0	100.0	100.1	100.0	100.0	100.0
	(126)	(44)	(62)	(53)	(75)	(99)	(459)

APPENDIX C

The questions from the interview schedule used to elicit self-reports of illegal behavior are indicated below. The seven Part I Uniform Crime Report offenses are equated with the questions indicated.

Offense	Question Number
Homicide	212
Forcible Rape	206
Robbery	200
Aggravated Assault	195
Burglary	207
Larceny	201
Auto Theft	197

190. ONLY ASK THIS QUESTION TO THOSE WHO SAID THEY WERE ARRESTED

Try to remember the very first time you were a victim of any of the offenses we just talked about.

Did this occur before you were ever arrested by the police?

Yes - before	1
At the same time	2
No - after	3
Don't know	4

From many studies we know that everyone commits delinquent acts that are not discovered by the police. We have found that most people, even those who have never been in trouble with the police admit to having committed some violations and often didn't know they were violations. The kind of questions we would now like to ask you have been asked of people from all walks of life throughout the United States.

How many times before age 18 and how many times after 18, did you do any of the following, alone or with others? Only tell us about those acts for which you were not caught by the police. Please remember what we said earlier: that everything you say will be kept confidential.

How many times have you:	Before you were 18	After you were 18	
191. Been out past curfew		X	
192. Played hookey from school		X	
193. Run away from home		X	
194. Made an obscene phone call			
195. Hurt someone badly enough to require medical treatment			
196. Used heroin			
197. Taken a car for joyriding			

How many times have you:	Before you were 18	After you were 18	
198. Disturbed the people in a neighborhood with loud noises			
199. Set off a fire alarm for the fun of it			
200. Threatened to hurt someone if he didn't give you money or something else			
201. Taken some money from someone without his knowing it			
202. Had heroin in your possession			
203. Smoked pot			
204. Stolen something from a store			
205. Passed a bad check			
206. Forced a female to have sexual intercourse with you			
207. Broken into a residence, store, school or other enclosed area			
208. Used a weapon to threaten another person			

REMEMBER WE ARE ONLY TALKING ABOUT THOSE ACTS FOR WHICH YOU WERE NOT CAUGHT BY THE POLICE.

209. Helped a girl to have an abortion			
210. Purposely damaged or destroyed property			
211. Gone to a house of prostitution			

How many times have you:	Before you were 18	After you were 18	
212. Killed someone not accidently			
213. Been drunk in public			
214. Carried a gun without a permit			
215. Carried a switch-blade or other big knife			
216. Had pot in your possession			
217. Hurt someone in a minor way like knocking him down			
218. Bought or accepted property which you knew was stolen			
219. Had sexual intercourse before you were married			
220. Had sex relations with another male			

221. Can you think of a couple of reasons why you've never been picked up or arrested by the police for any of these offenses?

_____

_____

_____

The main part of the interview is over and we now want to ask you a few last questions about the interview itself.

222. First, are you glad you were interviewed, or do you wish you had not taken the time for it?

Glad	1
Wish I hadn't	2
Not sure	3

223. During the interview, about how often did you hold back and not answer the questions completely even though you had the full information?

A great deal	1
Some of the time	2
A little bit	3
Not at all	4

224. Remember no one is going to follow-up these questions or ask you anything else. The interview is over. Please help us by giving us some idea of how much you actually changed your answers or told me something different from the truth?

A great deal	1
Some of the time	2
A little bit	3
Not at all	4

225. Have you had more or have you had less contact with the police than you told me about?

A lot more	1
A little more	2
The same	3
A little less	4
A lot less	5

226. Do you have any comments about anything in the interview that you would like to make?

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