THE INCAPACITATIVE EFFECT OF IMPRISONMENT: SOME ESTIMATES

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I. INTRODUCTION

Recent research on the functions of imprisonment has begun to provide quantitative, empirical knowledge of its rehabilitative and deterrent effects.[1] Much less is known, however, about the incapacitative effect of imprisonment. While it has long been understood that the physical segregation of prison inmates prevents them from engaging in some criminal activity (as well as much non-criminal activity) during the period of their confinement, quantitative estimates of the size of this effect have been lacking.[2] Leaving aside all deterrent or rehabilitative and counter-rehabilitative effects, it is of some interest to know whether the incapacitative function of imprisonment is large or small.

Here we present some quantitative estimates of the incapacitative effect of imprisonment on the rate at which the seven F.B.I. index offenses are committed. These estimates may be of

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1. For several recent surveys of this research, see Robert Martinson (1974a), Douglas Lipton *et al.* (1975), Morris Silver (1974), Gordon Tullock (1974), David F. Greenberg (1974[a]) and David F. Greenberg (1975).

2. Following the completion of this research, I discovered Isaac Ehrlich's attempt to identify an incapacitative effect of imprisonment (1973). Ehrlich regressed reported index crime rates for states against a number of social, economic and punishment variables, finding evidence that punishment reduced crime rates. Within the framework of a particular model, he found that the incapacitative effect accounted for less than 10% of the coefficients expressing the crime reduction effect of imprisonment, thus establishing an independent deterrent effect. His findings would appear to be consistent with mine.

   In addition, Stevens H. Clarke (1974) has drawn on unpublished data for the Philadelphia male birth cohort studied by Wolfgang, Figlio and Sellin (1972) to estimate the incapacitative effect of juvenile incarceration. He finds the effect to be small, not surprising in view of the low rate at which juveniles are incarcerated. The present study is confined to adult offenders.

some interest in connection with current proposals for substantial reductions in the size of the prison population, although they will not ultimately settle the question of whether such decarceration is advisable. In the process of developing our estimates, we will have occasion to provide a new interpretation of parole recidivism data. This interpretation will indicate the salience of the labeling perspective in deviance theory for the study of recidivism.

It is helpful, in discussing incapacitation, to distinguish what may be called "selective" incapacitation from "collective" incapacitation. By selective incapacitation, we mean the prevention of crime through physical restraint of persons selected for confinement on the basis of a prediction that they, and not others, will engage in forbidden behavior in the absence of confinement. By contrast, collective incapacitation refers to crime reduction accomplished through physical restraint no matter what the goal of confinement happens to be (deterrent, rehabilitative, incapacitative, etc.), and where decisions about who is to be imprisoned need not necessarily entail predictions as to future conduct.

II. SELECTIVE INCAPACITATION

The concept of selective incapacitation is at the center of many recent proposals for criminal justice reform. Several prison administrators, claiming that at most 10 to 15 percent of inmates now in prison present a threat of personal injury to the public at large, have suggested that the remainder could be released to the community (Goldfarb and Singer, 1973: 179-180; Mitford, 1973: 286). In essence, this is a recommendation for the selective incapacitation of the 10 to 15 percent of the current prison population who would not be released to the community because of the injury they would do were they not incarcerated.

The National Council on Crime and Delinquency has made a similar recommendation. In a policy statement issued by the Board of Directors in October, 1973, the Council took the position that:

> Confinement is necessary only for offenders who, if not confined, would be a serious danger to the public. For all others, who are not dangerous and who constitute the great majority of offenders, the sentence of choice should be one or another of a wide variety of non-institutional dispositions (1973: 449).

Whether non-institutional dispositions are indeed appropriate for all but those offenders who pose a threat of serious danger to the public (presumably this means violence, the statement doesn't say) presumably turns on issues beyond the scope of this

paper (such as the importance attached to other aims of sentencing). However, *the recommendation for deciding who is to be incarcerated on the basis of the threat such individuals would represent if released could be implemented only if it were possible to predict how a given prisoner would behave if released.* A number of recent studies of the recidivism of released prisoners allow us to examine the present state of the art of prediction.

We begin by examining returns to prison for a national sample of parolees. Information about the fate of 25,602 male parolees released in 1970 is now available (National Probation and Parole Institutes, 1972). After a year at large, 40 of the 25,602 male parolees released in 1970 had been returned to prison on a new homicide or negligent manslaughter conviction or allegation. Only 3 of those 40, or 7.5% of the total, had an initial homicide or negligent manslaughter commitment. Since those with a homicide or negligent manslaughter commitment comprise 7.4% of the parolees released, it appears that the prior conviction for homicide or manslaughter bears little or no relation to the subsequent commitment for an offense of this kind. Only 6 of the homicides and manslaughters were committed by someone whose initial offense involved violence of any kind. Thus, continued imprisonment of only the violent offenders would have prevented a very limited amount of homicide, at the cost of imprisoning several thousand offenders whose initial offense involved violence, but who did not, to the best of our knowledge, become involved in a new homicide or manslaughter after release.

Returns with new rape or aggravated assault convictions are somewhat more highly correlated with original convictions for those offenses than is the case with homicide, but for those too, preventive confinement of those who committed the initial offense would have eliminated only a small fraction of the subsequent offenses, at the cost of imprisoning many who did not, so far as we know, commit another offense of that kind.[3]

Prior commitment offense, of course, is only one source of predictive information that might be used in making a decision

3. Of the population, 3519 had a commitment offense involving violence (willful homicide, negligent manslaughter, aggravated assault and forcible rape) and another 2937 an offense involving potential violence (armed and unarmed robbery). The parolees in this study were released from prison in all but two of the fifty states, and Puerto Rico. The two missing states were Alaska and Connecticut; states that submitted only partial information were Alabama, California, Indiana, Maryland, Michigan, New York, Ohio, Pennsylvania, Wisconsin, Arkansas, Delaware, New Jersey, North Carolina, Puerto Rico, Rhode Island, and Tennessee.

whether to incarcerate in order to prevent future violent offenses, or indeed, offenses of any kind. Much of the recent research in the prediction of criminal behavior has been conducted under the auspices of the Research Division of the California Department of Corrections. As described in one of the publications of the Research Division (1971a):

> In 1958, initially under the guidance of Leslie Wilkins from England, the Research Division of the California Department of Corrections entered the field of parole outcome prediction from base expectancies. The base expectancy scale assigns a score to each inmate according to possession or absence of certain historical characteristics. It predicts from past observation the percentage of inmates for each particular BE score who will have favorable outcomes; the higher the score, the greater the possibility of favorable parole outcome . . . . BE61A was created to predict favorable parole outcome within two years after release. In general, favorable outcome was defined as no return to any prison from parole, no jail sentence of 90 or more days, or not PAL (parolee-at-large) over six months. The scale scores range from 0 - 76, with the specified points accumulated for whichever of the following characteristics are applicable:
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> 12 arrest-free period of five or more consecutive years
> 9 no history of any opiate use
> 8 not more than two jail commitments
> 7 not committed for burglary, forgery or checks
> 6 no family criminal record
> 6 no alcohol involvement
> 5 not first arrested for auto theft
> 5 six or more consecutive months for one employer
> 5 no aliases
> 5 first imprisonment under this serial number
> 4 favorable living arrangement
> 4 not more than two prior arrests
>
> . . . BE61A continues to be a valid measurement and predictive device for male felon parolees . . . the percent favorable outcome for each year's releases is higher at any level than the percent observed for the same year's lower levels. Although the BE was created to predict favorable outcome within two years, it has some validity for predicting returns to prison, in that the percent of returns generally increases as the BE score level decreases.
>
> Even though the BE61A scale accounts for less than 20% of the variation in parole outcomes, its predictions for favorable outcome are better than chance. Therefore, it can be helpful to administrators and in program evaluations.

An evaluation of the usefulness of the base expectancy score for choosing which prisoners to confine in order to prevent them from engaging in violent behavior upon release must take into account the fact that a predictive device of this kind can make two kinds of errors. It can release individuals predicted not to recidivate but who in fact do so (false negatives); also, it can fail to release individuals predicted to recidivate, but who would not recidivate if released (false positives).

For some purposes, the question of false positives can be safely ignored. When millions of children are innoculated with polio vaccine to protect them from contracting infantile paralysis, there need be little concern that few of those children would become polio victims if not vaccinated. Since the injection is inexpensive, harmless, and only slightly and briefly painful, it is clearly better to be safe than sorry. In utilizing predictions of criminal conduct to decide who is to be imprisoned, the consequences of ignoring the false positives are clearly much more serious—possible long-term erroneous confinement and stigmatization. Under this circumstance, one cannot neglect consideration of the false positives generated by a prediction method without implicitly assuming that the suffering of the persons mistakenly confined need not be taken into account. As Caleb Foote (1970: 52-53) observed:

> It is a prerequisite for any system of preventive detention that you assume that those detained are going to be second-class citizens. The false positives are viewed as more expendable in the debates on preventive detention. Judges and psychiatrists who support preventive detention assume that a mistaken identification of one actually safe person who is predicted to be dangerous is much less serious than the release of one actually dangerous person. The operating rationale, therefore, is much like that of a search-and-destroy mission. Some dangerous Viet Cong may be eliminated, and the civilians and children are expendable.

This observation would appear to be no less appropriate at the post-conviction stage, when a disposition is being selected by the judge, or in decisions involving the continuation of confinement on grounds of predicted behavior for someone already in custody, than at the pretrial stage, where preventive confinement proposals have been debated. This should be kept in mind when we consider the implications of using the California base expectancy score as a predictive device to aid decision-making about selective incapacitation. Information is available on the parole success of the 5910 men released to parole from California prisons in 1967 (Research Division, 1971b). Using return to prison with a new felony commitment within two years after release as the outcome to be prevented by refusing to release inmates predicted to recidivate, Table 1 shows the consequences of not releasing different groups of inmates.

TABLE 1

Hold BE Level	Number of Inmates Held	% of Recidivists Held	% of Non-Recidivists Held	% of Non-Recidivists Among Those Held	% of Total Decisions in Error
F	179	3.3%	3.0%	87%	14%
EF	1065	19.7%	17.8%	87%	25%
DEF	2012	37.2%	33.6%	87%	37%
XDEF	4313	79.8%	72.1%	87%	66%

Source: Derived from *Research Division 1971b.*

Since the predictive device is fallible, the only way the parole board could retain *all* recidivists in prison would be to release no one. As this might be impractical (it is necessary to release prisoners to make room for new commitments), the parole board would have to release at least some prisoners.[4] With base expectancy score as the criterion governing release, the table indicates what the consequences would be of choosing different base expectancy scores as cutting lines to decide on questions of release. For example, if only base expectancy levels E and F were detained, just under 20% of the recidivists would be kept in prison, as would a slightly smaller proportion of the non-recidivists. As the number of persons detained declines, the number of non-recidivists confined declines as well (a presumably desirable result), but so does the percentage of recidivists, no matter where the line is drawn, a majority of those detained will be non-recidivists.[5] Fortuitously, for this population, 87% of those held will be non-recidivists at each level of confinement. This implies a ratio of false positives to true positives of 6.7 to 1.

Since 12% of the 5910 men were returned to prison with a new felony commitment within two years, if the parole board were to make the decision concerning detention by random selection from the prisoner population, 88% of those detained could be expected to be non-recidivists. Thus when the base expectancy score is used as a device for deciding who should be released from prison, the percentage of non-recidivists confined drops from the 88% obtained through a random selection to 87%, an improvement of just one percent. It would be an understatement to point out that this is hardly impressive.

Since the ratio of false to true positives (and therefore the cost-effectiveness of preventive confinement) does not change with the risk levels retained in this particular instance (assuming for the sake of simplicity that there are neither economies nor diseconomies of scale), the board might consider choosing a cut-

4. In practice, it is likely that release rates would be strongly influenced by commitment rates, for if the former substantially exceeded the latter over a period of time the prison population would be seriously depleted, while if the latter persistently exceeded the former, an intolerable increase in population density would result.

5. In light of this finding, it should be pointed out that in a civil commitment hearing held to deprive someone of liberty on grounds of mental illness and dangerousness to others, the government must establish dangerousness with a degree of certainty traditionally given by the "preponderance of evidence" test, which would require decisions to be more often right than wrong if made on the basis of the evidence introduced. Some courts have begun to require the more stringent "reasonable doubt" standard in civil commitment cases. Greenberg (1974c: 265, note 129.) The accuracy of the base expectancy score is so poor that it would not meet even the lesser of these standards.

ting line so as to minimize the number of erroneous decisions. It would appear from the table that this could be done by retaining only the worst risk level, since then only 14% of all decisions would be in error, even though preventive confinement that detained only 3% of the recidivists might seem not worth the trouble. However, if the aim were simply to minimize error, the board could do better by releasing *all* the inmates, since it would then be wrong only 12% of the time.[6]

In the analysis just described, the criterion of parole failure was simply return to prison with a new commitment. The advocates of selective incapacitation do not have in mind imprisoning *all* those who are at present returned to prison with a new commitment of *any* kind—only those whose new commitments are for violence offenses. How accurately can these be predicted?

The most elaborate attempt to develop methods for predicting violent recidivism was that of Wenk and Robison, who studied the violent recidivist offenses of California Youth Authority wards (Wenk and Robison, 1971; Wenk *et al.*, 1972). These youths have a higher rate of over-all recidivism (at the end of fifteen months 38.9% were parole violators) and a higher rate of return to violence than adult parolees, making them a logical target for a policy of selective incapacitation.

Wenk and Robison had access to unusually complete biographical data for more than 4,000 wards—an advantage, since the accuracy of predictions might be expected to increase with the number of individuals and the amount of information about them fed into the construction of prediction equations. Six sizable subgroups with particularly high rates of violent recidivism were identified: those who had a psychiatric referral for evaluation of violence potential, a history of actual violence, those with four or more admissions to the Youth Authority, a violent admission offense, Mexican-Americans, and those with a severe alcohol problem. The category "history of actual violence" is particularly noteworthy Comprising a fifth of the entire population, it includes half the subjects who became violent, with a violent recidivism rate three times as high as the rest of the wards. Yet, confining this group would have entailed confining 19 apparently non-violent youths for every youth who recidivated violently (a much higher rate of false positives than when returns to prison with a new commitment were being considered), and would have resulted in the release of half of those who became violent.

6. I have been drawing on James O. Robison's unpublished analysis of parole decision-making and outcomes.

By confining only the subgroup with the highest rate of violent recidivism, those committed on the basis of a psychiatric referral, the false positive ratio could be reduced slightly to 15 to 1, but this would drastically reduce the effectiveness of the confinement since then only 16 of the 104 violent recidivists in the population would be confined, and three times as many erroneous decisions would be made than would occur were everyone to be released.

As a multivariate analysis could be expected to improve the quality of the predictions, a statistician and a psychologist were each asked to develop predictions using multivariate techniques, with half the sample used to validate the prediction formula developed from the first half of the sample. The statistician's best predictions identified 7.7% of the violent recidivists, with a false positive ratio of 12 to 1. He concluded pessimistically:

> Considering the rarity of the phenomenon (only one in forty exhibits subsequent violence), it is difficult to imagine that, even with the most refined techniques, one could do much better than, say, to double the best rates obtained here. This lack of precision of our selection process seems inherent in the limitations of the quantifiable variables we have in this study (Wenk and Emrich, 1972: 192).

Using a different approach, the psychologist developed a multiple regression prediction using 18 variables, in which the ratio of true positives to false positives did not exceed 0.06, no better than in the simple analysis taking one variable at a time. Nevertheless, the psychologist concluded:

> It is apparent that this set of data offers numerous encouraging leads on the constitution and possible identification of potentially violent parolees. These results strongly suggest that a useful violence index could be constructed although a great deal more research is obviously necessary . . . In sum, it appears to be feasible to develop, in this sample, at least, an index of violence prone-ness that would correctly identify over 50 percent of those individuals violating parole by violent offenses at the cost of mis-classifying no more than 10 percent of those not returned for violent offenses (Wenk and Robison: 1971:47).

Wenk and Robison point out, however, that the high proportion of nonviolent offenders in the group implies that even should this accuracy eventually be attained, the ratio of false to true positives would still be 8 to 1, which is very high.

The state of prediction is evidently rather poor. Implementation of a policy of selective confinement based on predictions of dangerousness would clearly founder on the gross inaccuracies of prediction.[7] While it is certainly possible that with additional

7. It is beyond the scope of this article to discuss precisely what degree of predictive accuracy would be required before it would be acceptable to use predictive methods in making decisions about selective

information about offenders, and more sophisticated, possibly nonlinear, statistical techniques, predictive accuracy could be improved, there are some fundamental limitations to the degree to which improvement is likely to be possible. These limitations include (a) the extreme practical difficulties and high cost of improving the accuracy of data to be used in predictions, and (b) the interactional nature of much recidivist crime, and in particular, of violent crime. If a particular individual's recidivism depends not only on his or her own personal traits, but also on largely unforseeable contingencies such as how others (spouses, prospective employers, etc.) behave toward that individual, the information that would be essential for an accurate prediction would be omitted from the actuarial analysis that forms the basis for a prediction. The meagre results obtained after fifty years of research in the prediction of parole behavior from the characteristics of individual parolees strongly suggest that these contingencies may be at least as important as biographical data in determining parole success of failure.

III. COLLECTIVE INCAPACITATION— THE VISIBLE TIP OF THE ICEBERG

Although the analysis of the preceding section suggests the unfeasibility of a policy of *selective* incapacitation, it leaves open the possibility that there may still be a sizable collective incapacitation effect from imprisonment. If, for example, a high proportion of criminals were confined, rates of crime repetition were high, and a great deal of switching from one form of crime to another took place, predictions of a particular variety of recidi-

incapacitation. For a provocative discussion of this question see Andrew von Hirsch (1972); a parallel discussion of the use of predictions in civil commitments appears in Greenberg (1974b). The following argument, however, should suffice to indicate that the issue is not necessarily qualitatively different at the post-conviction level than it is at the pre-conviction level. Consider a man released from prison who is now accused of another crime. No one would question that when he is tried for this new offense, the appropriate standard in reaching a verdict should be the reasonable doubt test, just as in the first trial. Suppose, however, that instead of having been accused of committing a crime that has already taken place, the man had been predicted to engage in some crime at a later date. Here we not only do not know whether this man will commit the crime, we do not even know for certain that it will take place. Why would we tolerate a lesser degree of certainty with regard to the incarceration of someone predicted to engage in a crime that may not take place at all, than we would when someone is accused of a crime that we know has taken place? If this reasoning is persuasive, the reasonable doubt criterion would have to be used for decisions involving selective incapacitation. Since this criterion could virtually never be met for predictions of the future, preventive commitments would have to be eschewed. I am indebted to Andrew Von Hirsch for this argument.

vism (say violent recidivism) might be poor, but the collective incapacitation effect of imprisoning offenders without regard to the likelihood of repetition could still be substantial. In estimating how substantial, we will use parole recidivism statistics extensively (National Probation and Parole Institutes, 1972). Since women comprise only 6.3% of the parolee sample under study, the bulk of the analysis will be devoted to male parolees; however, differences in the nature of male and female recidivism will be pointed out.

Published parole success rates are not available for the individual reporting agencies, so that state by state comparisons are not possible. However, such comparisons would be uninformative in the absence of information about the composition of the respective prison populations. For example, one state might have a higher recidivism rate than another not because its prisons were more criminogenic than another, but because of differences in the criminal populations of two states, unemployment levels, efficiency of police departments, or criteria used in selection for probation. Instead of success rates for the individual agencies, we have them for the national sample as a whole. The rates, then, represent a national average of successes and failures from states with possibly different prison populations, and release and revocation policies. Four our purposes, this is not entirely disadvantageous: the lumped data are less likely to reflect the idiosyncratic policies or unusual crime picture of any particular state. On the other hand, the conclusions drawn may not be equally valid for all states.

Table 2 reports the fate one year after release of the male parolees released in 1970 for whom agencies made information available to the compilers of *Uniform Parole Reports.* Inspection of the table indicates that at the end of one year, 18.9% of the parolees had been returned to prison, either as technical violators, or with a new major conviction. This represents a slight decline from the 1969 male parolee one year return rate—19.6% (National Probation and Parole Institutes, n.d.). An additional 0.6% of the 1970 parolees were continued on parole after conviction for a new major offense. By conventional definitions, the recidivism rate for the first year after release would be close to 20%.

Two years after release, 27% of the 1969 male parolees had been returned to prison, indicating that in the second year after release, even when depletion of the sample due to the return to prison of almost 20% of the parolees during the first year is taken

into account, the recidivism rate declines substantially from its value during the first year[8] (National Probation and Parole Institutes, 1973). These figures suggest, though they do not rigorously prove, that at the point of release from prison, many prisoners do not become intensely involved in crime.

Since the magnitude of the numbers just cited for parolee recidivism are substantially smaller than those often cited, it must be emphasized that a recidivism *rate* is not be confused with the percentage of parolees who are *eventually* reconvicted or returned to prison. The rate involves not only the number of violators or violations, but the period of time over which the violations occur as well. Thus, the finding that the recidivism rate was no more than 20% in the first year and less thereafter would not contradict a statement that more than half of all parolees are *eventually* returned to prison.

TABLE 2

1970 MALE PAROLEES, FATE AFTER ONE YEAR

FATE	NUMBER	PERCENT
CONTINUED ON PAROLE		
no difficulty or sentence less than 60 days	18,789	73.4%
with new minor conviction(s)	290	1.1%
with new major conviction(s)	156	0.6%
ABSCONDER	1,517	5.9%
RETURN TO PRISON AS A TECHNICAL VIOLATOR		
no new conviction(s) and not in lieu of prosecution	2,400	9.4%
new minor or lesser conviction(s) or in lieu of prosecution	592	2.3%
in lieu of prosecution of new major offense(s)	645	2.5%
RETURN TO PRISON, NO VIOLATION	12	0.1%
RECOMMITTED TO PRISON WITH NEW MAJOR CONVICTION(S)	1,201	4.7%
TOTAL	25,602	100.0%

Further inspection of the table is instructive. We learn that of those returned to prison, only 25% were returned with a new

8. If incidents taking place during the first year, but which do not lead to deprivation of liberty until the second year were taken into account, this number might be somewhat larger. The numerical importance of these "pending" cases would be large only so long as the analysis is confined to short follow-up periods. I have no nationwide data on "pending" cases, but can illustrate the point with California data on 1966 parolees. At six months, 8.9% had been returned to prison, and 5.1% had cases pending; at one year, 21.0% had been returned to prison, and 3.3% had cases pending. At two years, the respective figures were 36.0% and 1.1% (Research Division, 1971b: 8, 15, 19).

major conviction; all others were returned as technical violators (a technical violator is one who breaks a regulation to which parole agencies require parolees to conform; these violations are not criminal offenses).[9] As parole agencies sometimes return someone to prison as a technical violator even when a new crime has been committed, so as to avoid the expense and trouble of a new trial, some of these technical violators might well have been convicted of a new crime had a trial been held. Yet, even if it is assumed that *all* those returned in lieu of prosecution for a new major offense would have been proved guilty in court had the agency not revoked parole on grounds of a technical violation, we would still have a minority (38%) of the parole revocations triggered by reason of involvement in a new major offense.

Actually, a study of parole revocation decisions suggests that in at least some instances, parole may be revoked on grounds of suspicion even when reason exists to believe that the parolee had *not* been involved in criminal activity.[10] Other revocations —roughly an eighth of the total—occur in response to suspicion of involvement in, or conviction for a minor crime, one that would not involve imprisonment had the violator not been on

9. State correctional systems differ greatly in parole revocation practices. For some states, the proportion of returns to prison attributable to technical violations would be much smaller than for the United States as a whole. Thus, in Wisconsin, about ¼ of all persons returned to prison have new commitments, the remainder being technical violators (Division of Corrections, 1971) and in Michigan, only 30.2% of parole violators returned had new sentences (Department of Corrections, 1970), while in New York about 60% of persons returned to prison were arrested for some new crime (Clark and Rudenstine, 1975: 160), and in the federal system, 74.3% of parole violator warrants were for violations of laws (Federal Bureau of Prisons, 1974).

10. The following case summary illustrates such a revocation: S. was convicted for second-degree burglary and served two years . . . After completing eighteen months on parole he was arrested two blocks from his home at 11:00 P.M. He was on his way home from a nearby bar where he had just spent two or three hours. The police were looking for someone who had committed a burglary several blocks away about an hour earlier. When they discovered that S. had a record for burglary he was taken to jail and charged with this crime. When his alibi was established and there was no evidence to connect him with the crime except for his being in the neighborhood, the judge dismissed the charge and admonished the arresting officers.

    S.'s parole was cancelled, however, and he was returned to prison. When he appeared before the A.A. [Adult Authority, i.e. the parole board] for a parole-violation hearing he was asked if he knew why he had been returned. He replied that he did not. The A.A. member became irritated with him and told him that just because he "beat the charge" in court did not mean that he was not guilty, and that the best thing he could do was to admit that he was guilty. He refused to do this and tried to explain to the member that the judge clearly believed him to be innocent and that he could prove this from the transcript of the preliminary hearing.

    S. was denied parole consideration and postponed for another year . . . (Irwin, 1970:56-57).

parole. For example, one of the men killed during the Attica rebellion was a check forger whose parole had been revoked for driving without a license. Men are not customarily sent to Attica for driving without a license. (Personal communication to the author from Andrew Von Hirsch, on file with the author.)

Most striking, the table indicates that fully half the parolees returned to prison were not even suspected, much less found guilty, of involvement in a new offense, minor or serious. Instead, they were returned to prison for violating a parole regulation. Some examples will illustrate the circumstances that can result in revocation. A common parole regulation forbids "association with individuals of bad repute."[11] Another parole regulation, imposed on some, but not all California parolees, forbids the use of alcoholic beverages.[12]

From the recidivism data and available case studies, we learn that if recidivism is defined as new known involvement in serious

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11. Consider the following excerpt from a parole agent's recommendation to the California Adult Authority that a parolee be returned to prison for violating this rule:

> Subject is running around with Indian girls again and is getting himself very dirty. He has a very low regard for himself and cannot feel comfortable in the company of anyone but Indians. . . . His dissolute action continued unabated with the keeping of late and unusual association with drunk Indians, promiscuous sex activities with Indian girls. . . . He does not take advantage of or avail himself of the many fine opportunities for wholesome recreation in this area, nor of the religious or socially uplifting events. . . . His habits have become less acceptable socially. . . . He seldom bathes and has sex with girls of low status. . . . (Kassebaum, *et al.*, 1971: 189).

Eliot Studt (1973: 159-60) describes the revocation of a 17-year old black youth who violated this rule:

12. This parolee had been released from prison approximately three months earlier; the agent discovered during the first interview that the man had injured his back so seriously that he was in extreme pain. Welfare aid was obtained, and the parolee was housed in a run-down ghetto hotel full of winos, the only housing resource in that area for single, unemployed men. Medical appointments were made but, before the parolee could get to a doctor, he was arrested for being drunk on the sidewalk and taken to jail. When the police discovered the physical state of the parolee, and learned that the drinking had occurred, at least in part, to dull the pain pending the receipt of medication, they recommended to the judge that the charges be dismissed. The judge dismissed the case, recommending that no further action be taken against the parolee. After this event, the agent made arrangements for the transfer of the parolee to the care of the Veteran's Administration as soon as the admitting examinations, scheduled for six weeks ahead, were completed. Because the parolee had violated his 5b condition, the agent also wrote a report to the Board, outlining the circumstances and the plans for medical care, and reccommending continuance on parole. To the agent's dismay the Adult Authority revoked the parole.

Studt (1973:21) describes the youth, "in severe pain . . . standing in handcuffs with tears running down his cheeks" after having been told that he was being returned to prison.

criminal activity, rather than as a return to prison (the administrative action), the recidivism rate is rather low—somewhere between 5 and 8% in the first year after release (neglecting cases pending at the end of the year), less in subsequent years. For women parolees released in 1970, the rates are even lower. At the end of one year, 13.9% had been returned to prison (a lower rate than for male parolees), and another 0.23% were continued on parole after a new major conviction. Yet, of those returned to prison, only 16.4% were returned with a new major conviction, 8.9% in lieu of prosecution for a new major offense, 12.7% with a new minor conviction or in lieu of prosecution for a new minor offense, and an astonishing 60% as technical violators with no new convictions and not in lieu of prosecution (National Probation and Parole Institutes, 1972).

It appears that for male parolees, and even more so for the female parolees, the proverbially high rate of recidivism (as defined by returns to prison, the usual measure) is in large part an artifact created by the parole system itself, since many of the returnees were sent back to prison for behavior that is not forbidden to the general public, for suspicion of an offense where guilt was not proved in court, and at least sometimes when the parolee had already been tried and acquitted, or when the offense was minor and would not have resulted in imprisonment had the offender not been on parole. (See table 1).

These results suggest that parole recidivism is best understood within the framework of the labeling approach to the study of deviance, with its emphasis on the study of organizational processes and their effects on outcomes (Schur, 1971: 82-99). They clearly demonstrate that parolees are not usually returned to prison as the result of a reactive response by law enforcement agencies to the commission of new felonies. Persons returned to prison are in a legal sense far from homogeneous. Some have been found to have committed felonies, others misdemeanors, and the majority have not been found to have violated the law at all. Some have been returned to prison through judicial, and others through administrative procedures. Without an examination of the procedures by which parolees, parole agents, and parole board members interact to produce official recidivism statistics, and absent an investigation of the standards these decision-makers actually employ, a very misleading picture of parolee behavior would be obtained.

It is of some interest to note the rationale for having a parole system that permits parolees to be returned to prison in the ab-

sence of proof of any criminal violation. Parole was instituted in the decades following 1870, and reflects views of crime causation held in the late nineteenth and early twentieth centuries. Criminologists and reformers of that period compared crime to a disease, and penal administrators to physicians who could cure criminals of the personal pathology that led to their initial involvement with crime. Since a successful cure would benefit the criminal as well as the public, due process protections associated with the criminal trial and limitations on the severity of punishment derived from retributive and deterrent philosophies of punishment could safely be ignored.

The parole system was seen as an administrative device that would simpultaneously permit the retention in prison of those whose disease had not been cured and the speedy return to prison of those who were beginning to relapse. No sense in waiting until a new crime had actually been committed; act at once, as soon as pathological behavior begins to manifest itself. The class biases of penal administrators led them to label as symptoms of impending criminality such routine features of lower class existence as occupational and residential mobility, sexual experience outside marriage, and association with "disreputable" people. These assumptions were not verified before the system was implemented, and have long been abandoned by most criminologists.[13] Nevertheless, thousands of released prisoners continue to be returned to custody for violating rules never enacted by a legislature, and to which a considerable portion of the population no longer subscribes.

The labeling perspective in deviance theory is often linked with symbolic interactionist social psychology. It is argued that the denunciations and degradation ceremonies accompanying the official labeling of someone as deviant affect the self-concept in such a way as to increase the likelihood of future deviance. In the case of the parole system two other mechanisms seem to be at work. One involves the transformed *social* identity of the incarcerated. Regardless of the consequences of imprisonment for self-concept or behavior patterns, imprisonment and subsequent release on parole subject the individual to a far more stringent set of rules (with much weaker due process safeguards) than those imposed on the general public. Behavior that would not result in imprisonment for the average citizen results in long-

13. Norman Holt (1974) has recently pointed out that technical violators not returned to prison but kept on parole were no more likely to be rearrested than parolees freshly released from prison; the technical violation, therefore, had no predictive value.

term imprisonment for the ex-felon. In other words, the parole agency organizes social responses to parolee behavior so that the behavior is not interpreted according to the conventional rules operative for most citizens, but according to a different set of rules applicable because of the parolee's behavior at some time in the past, perhaps years earlier. Regardless of the attitudes of particular individuals, the normal operation of the agency turns the parolee status into a master identity, which over-rides other considerations and places the parolee in jeopardy of imprisonment without crime.

The second mechanism, the existence of which is more difficult to demonstrate empirically, involves the effect of the high recidivism rates generated by the parole system in reinforcing public stereotypes of released prisoners as especially dangerous. This image contributes to the difficulties faced by released prisoners in such areas as employment and social life. It is quite possible that the new crime rate of parolees would be lower in the absence of a parole system continuously generating high recidivism rates. To the hard-liner, high recidivism is a demonstration of the need for longer sentences to protect the public; to the reformer, they show the need for increased appropriations to fund new rehabilitation programs. Thus, the same data serve as resources for parties at both ends of the policy spectrum. Neither realizes that in constantly calling to the attention of the public numbers that are to a great extent artifacts of administrative action, public prejudice against ex-convicts may be intensified.

Since parole agents possess considerable discretion in responding to technical violations (as well as in the interpretation of such vaguely worded expressions as "individuals with bad reputation") revocation rates can be manipulated to achieve organizational objectives. One such instance of manipulation has been documented by Paul Takagi (1967: 158-161). California had been experimenting with small parole caseloads in the hope that these would reduce recidivism. When investigation disclosed that recidivism was not lower despite the small caseloads:

> The chief of the agency stated that henceworth the units in the agency will compete against one another to see who can produce the lowest technical violation rate. In order to reduce the technical violation rates among the small case-load agents, the supervisors will be required to hold a detailed case conference with the agent recommending a technical violation and explore what alternatives are available in the community so a parolee need not be returned to prison. If the supervisor agrees with the agent's recommendations to return the client to prison, then the supervisor must state in writing a justification for the recommendation. Such a case, however, will then be reviewed by the

> regional administrator with the view toward disagreeing with the field recommendations. If the regional administrator should agree with the return recommendations, then he, too, must state why he agrees.
>
> The further requirement was made that copies of such reports will be forwarded to headquarters for review and training purposes and that the material will be utilized to evaluate the performances in the field. The chief of the agency added one final note. All future promotions will be considered in terms of how well the district supervisors and the regional administrators have provided leadership in reducing the technical violation rates. At this juncture in the meeting, my informant indicated one of the participants at the meeting responded to these unwritten policy requirements with an exclamatory "Bullshit!" The chief of the agency turned to the man and said: "Mr. C———, you hold a responsible position in this organization; and if that is the way you feel, perhaps you should not be in that position."
>
> Headquarters' pressures upon the regional administrators and the small-caseload supervisors served effectively to reduce the technical violation rates in the subsequent months.

Although a recidivism rate of 5 to 8% a year (as defined by return to prison because of a new major conviction or allegation of a new major crime) does not seem especially high, it may be worthwhile to examine the offenses for which recidivists are returned to prison, for if these offenses were especially serious, even a recidivism rate of this magnitude might be considered alarming. As the previously cited national sample of parolees records the new commitment offense or allegation (in the case of a technical return in lieu of prosecution) for the 1970 male parolees returned to prison, we can examine this question. Of the 25,602 men in the sample, only 0.73% were returned for conviction or suspicion of a violent offense (homicide, manslaughter, forcible rape, aggravated assault); another 1.1% were returned for potentially violent offenses (armed or unarmed robbery). The bulk of the returns were for property crimes not involving confrontation with a person, or violations of the drug laws (National Probation and Parole Institutes, 1972).

More than one interpretation of these figures is possible. It might be argued that recidivism is low because the parole system is highly effective in preventing released prisoners from returning to crime—whether through its helping or surveillance function is immaterial. This explanation, along with another—that only the best risks are released on parole—can be excluded by research indicating that prisoners released mandatorily after parol denial recidivate at roughly the same frequency as prisoners released on parole (Carney, 1967; Mueller, 1965; Clark and Rudenstine, 1975: 1962:3; Research Division, 1968), and that intensity of parole supervision does not seem to influence the rate of return to crime (Greenberg, 1974a).

Another possibility is that the prison system, rather than being a school for crime, is quite successful in rehabilitating prisoners or in deterring them from further criminal activity. Our knowledge of such effects is still far from complete. However, most rehabilitation programs have shown no measurable effect on recidivism, and in the few cases where a measurable effect has been shown, the effect was not large (Greenberg, 1974a). In addition, recidivism rates of released prisoners are about the same as those of matched probationers (Wilkins, 1958; Hammond, 1958; Babst and Mannering, 1965; Shoham, 1966: 193; Lamb and Goertzel, 1974), and one recent study (Berecochea, *et al.*, 1973) found that length of time served in prison had no effect on recidivism[14] Prisons may be terribly unpleasant, psychologically destructive, and at times dangerous to life and limb, but there is no compelling evidence that imprisonment substantially increases (or decreases) the likelihood of subsequent criminal involvement.

If taken at face value, then, official statistics on parole recidivism suggest that the collective incapacitative effects of punishment on crime rates are truly infinitesimal. On the assumption that all prisoners would recidivate at the same rate as the roughly 25,000 parolees in the sample under study, we can calculate that if all the approximately 200,000 prisoners in the United States were released, at the end of a year only about 1,460 would have been returned for conviction or suspicion of a violent offense. In 1970, 384,701 such offenses were reported to police (Federal Bureau of Investigation, 1972: 62-53). One major flaw in this line of reasoning is that offenses leading to imprisonment are only the tiny, most visible tip of a very large iceberg of offenses that do not lead to a police report, arrest, conviction, or imprisonment. In 1970, for example, there were 1,551,300 arrests for index crimes in the United States (Federal Bureau of Investigation, 1971: 119), but only about 77,000 persons were sentenced to prison in that year, and not all of them for index offenses (Federal Bureau of Prisons, n.d.). The clearance rate for index offenses was only 20% in 1970 (Federal Bureau of Investigation, 1971: 115), and this figure would be even smaller were crimes not reported to police included in the measure of likelihood that

14. Since this study involved only a six month reduction in sentences averaging several years, it cannot indicate what the effect of a larger variation in sentence length might be. In addition, it is possible here, as with many rehabilitation studies, that different members of the prison population were differently affected by the treatment, so that a positive effect for some was cancelled out by a negative effect for others. Berecochea *et al.* (1973) were not able to identify any such groups but that does not mean they did not exist.

an offense will result in an arrest. Official parole statistics indicating only rates of return to prison understate the amount of recidivist crime committed by parolees. Insofar as an estimate of the absolute amount of crime prevented through incapacitation of prisoners is concerned, an inclusion of these hidden offenses could only increase the estimate.

If one is concerned not with the absolute amount of parolee crime, but rather with the fraction of crimes for which parolees are responsible, it is less clear what the effect of including undetected offenses will be. For if parolees are frequently not apprehended for their crimes, non-parolees also escape apprehension. It could be argued that those who violate the law more frequently will be more likely to be caught and imprisoned. If this is so, the fact that many crimes are undetected would not necessarily lead to a small incapacitative effect, for the most active criminals would be those taken out of circulation. On the other hand, imprisonment may depend as much on lack of aptitude or skill as on frequency of violating the law. If this is so, the incapacitative effect of imprisonment would not tend to be very large. To settle the issue, a more quantitative approach is required.

IV. ESTIMATION OF UNDETECTED RECIDIVIST OFFENSES—MODEL 1

In this section, we present the first of two independent estimates of the volume of undetected recidivist crime parolees commit. Because data are most complete for index crimes (nonnegligent homicide, forcible rape, aggravated assault, robbery, burglary, auto theft, and larceny over $50), we will attempt to estimate the rate at which released prisoners commit index crimes, and the corresponding magnitude of the incapacitative effect of imprisonment, assuming that the recidivist crimes would not be committed were the parolees not released. It must be admitted that the use of index crimes is not entirely satisfactory. On the one hand, some serious offenses (e.g. kidnapping) are not included; in addition, a high volume of less serious offenses may not be entirely inconsequential, and these too are excluded from the crime index. On the other hand, the index itself weights equally crimes of very different gravity; the social consequences of an act of grand larceny or auto theft are quite different from the consequences of such assaultive crimes as homicide and rape. Since most of the current interest in incapacitation concerns offenses against the person, it must be pointed out that most of

the index offenses are offenses involving theft where no confrontation with a victim occurs. Even with these limitations, an estimate may be of some interest, and will provide a consistency check on the second model we will present, which yields separate estimates for each of the index crimes.

As numerical values for some of the variables required by the model are unavailable, simplifying assumptions will be needed. While the assumptions appear reasonable, the reader should keep in mind that new empirical research could require the modification of some of the assumptions and a refinement or correction of the conclusions reached here. To assist the reader in keeping track of the notation, definitions of the symbols defined in the text are collected in Table 3.

We begin by defining a minor offense. A minor offense is an offense (such as drunkenness or disorderly conduct) that rarely if ever results in a prison sentence, and for which the chances of the subsequent offense being an index offense are particularly small. As crime-switching matrices adequate for our purposes are not available, we shall have to rely on commonsense knowledge about crime patterns to distinguish minor from non-minor offenses.[15] Let A be the number of persons arrested annually for a non-minor offense. We assume that released prisoners commit index crimes at the same rate as all persons arrested for non-minor offenses, whatever the disposition of their cases; call this rate r.[16]

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15. We classify homicide, rape, robbery, aggravated assault, burglary, larceny, auto theft, other assaults, arson, forgery and counterfeiting, fraud, embezzlement, possession of stolen property, weapons, narcotics, and gambling as non-minor offenses. Minor offenses include vandalism, prostitution, sex offenses (except rape and prostitution), offenses against the family and children, driving under the influence, liquor laws, drunk, disorderly, vagrancy, suspicion, curfew and loitering, runaways, and all others except traffic.

16. The approximate validity of this assumption is suggested by F.B.I. data on crime careers (Federal Bureau of Investigation, 1971: 36-38) and the general lack of effect of disposition on outcome (Greenberg, 1974a). Nevertheless, the available data are sufficiently poor to leave one with the feeling that this assumption is somewhat treacherous. On the one hand, defendants are more likely to be imprisoned if their offense is an especially serious one, and the rate of recidivism is lower for the more serious crimes: it has long been known, for example, that persons convicted of homicide have an especially low rate of return to crime. In addition, recidivism is highest among youthful offenders, who are less likely than adults to be incarcerated. On the other hand, recidivism also increases with prior record, and persons with longer records are more likely to be incarcerated. Probationers do seem to return to crime less often than ex-prisoners; on the other hand, an F.B.I. six year follow-up on persons brought into, and released from the federal criminal justice system in 1963 indicated that persons who were acquitted or dismissed had a higher re-arrest rate than parolees, and the re-arrest rate for the sample as a whole was a few percentage points higher than for the parolees. No information about possible differences in

Let V be the annual number of virginal arrests for a non-minor crime. A virginal arrest is an arrest of someone who has never before been arrested on a non-minor charge (the individual may, however, have been arrested previously for a minor charge). We assume for the sake of simplicity that persons arrested on non-minor charges all commit index crimes at a uniform rate for T years and then stop. This assumption is somewhat crude, since criminal activity need not be of uniform intensity or character throughout the crime career. Indeed, we have already noted that official parole recidivism data suggest that recidivism rates decline with time, and it has long been known that involvement in criminal behavior declines with age. It is reasonable that in many instances, cessation of involvement in crime would be gradual, not abrupt. Nevertheless, the crudeness of the data make the assumption of uniformity as reasonable as any other.

We also assume that the chances of apprehension remain constant throughout the crime career. A more realistic model would allow this number to vary as the character of crimes committed changed, and as the criminal became both more skilled and better known to law enforcement agencies. We shall denote by p the probability that a non-virgin (someone who has been arrested previously for a non-minor offense) who commits an index offense will be arrested for it. In addition, we shall need to assume that all the quantities of the theory change slowly over a period of time T (the length of the crime career). The plausibility of the assumption will depend somewhat on the magnitude of T.

Since rp represents the annual rate at which non-virgins are arrested on index charges, the reciprocal of this quantity represents the average time interval between arrests. Also, rpT represents the number of additional lifetime index arrests a person arrested for the first time on a non-minor charge will undergo. Blumstein and Larsen (1969) have estimated the number of subsequent index offenses arrests that 20-year-old virgins arrested on index charges will experience, utilizing earlier studies of the recidivism of federal prisoners, and Minnesota state prisoners. The number of subsequent index arrests depends somewhat on the initial offense, rapists and robbers being the least likely to be arrested again (2.2 subsequent index arrests) and auto thieves the most likely (2.8 or 2.9 subsequent index arrests). For our

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the rearrest offenses is provided. (Federal Bureau of Investigation, 1970: 38). With better information on the recidivism patterns of different dispositions, our assumption could easily be modified, if necessary.

purposes the difference between these numbers isn't very important. We will take rpT = 2.5 for all non-minor virgin arrests.[17]

An empirical value of rp for juvenile males is obtained from the recently published cohort study of roughly 10,000 Philadelphia boys whose delinquent careers were followed to age 18. Among those arrested for an index offense at least twice, the average time lapse between index arrests was 14.5 months (Wolfgang *et al.*, 1972: 232-233). Comparable information for adults can be obtained from F.B.I. Crime Career data. For the F.B.I.'s sample of nearly a quarter of a million persons arrested on federal or state charges in the period 1970-1972 there had been on the average four arrests up to and including the present arrest, over a period of five years, for an average time lapse between arrests of 1.67 years (Federal Bureau of Investigation, 1973: 38). As not all these arrests would have been for index offenses, for this sample rp would have had some value less than 1/1.67 = 0.6. Indeed, in a five year follow up of offenders released from the federal criminal justice system in 1963, it was found that of those who were arrested (63% of the total), only 43% were arrested for violent crimes (11%) or property crimes (32%). (Federal Bureau of Investigation, 1969: 39).

Unlike subsequent editions, the 1965 edition of *Uniform Crime Reports* distinguishes index from non-index arrests in summarizing information about crime careers. For this year, rp took on a value close to 0.5. It is this value that will be adopted here, rather than the larger value (12/14.5 = 0.86) obtained from the study of Philadelphia juvenile arrests. Even though the Crime Career arrests are not necessarily representative of all adult arrests it seems likely that they would be more representative of non-minor adult arrests than the sample of Philadelphia juveniles. The smaller value of rp for adults is consistent with the tendency of arrest rates to decline with increasing age. Using rp = 0.5, we obtain T = 5 years.[18]

17. This number may be compared with the crime career data provided by the F.B.I. for "known repeaters" arrested in 1966-67, on charges of murder, felonious assault, robbery, burglary, auto theft, and rape. These had an average number of crime index offenses ranging from 3 (auto theft) to 5 (burglary), with the remainder having 4 index arrests, over crime careers ranging between 7 and 11 years. As not all individuals can be assumed to have reached the termination of their crime careers, the ultimate number of average index arrests would presumably be larger. However, the sample is defined as consisting of "known repeaters" (not further defined), and thus is presumably biased toward persons with longer crime careers (Federal Bureau of Investigation, 1968: 35).

18. It should be noted that the crime career as defined here is conceptually not the same as the length of the crime career used in F.B.I.

Next we want to estimate the value of r. From the value for rp just obtained we infer that r cannot be smaller than ½ index offense per year (since p cannot exceed 1). This gives us a lower limit on the amount of recidivist crime: there cannot be less than half an index crime per year for every person released from prison.[19] Since p can be quite a bit less than 1, this lower limit does not exclude the possibility that there are substantially more index crimes per year per ex-prisoner.

We next obtain an upper limit for r. We can do this by noting that an index crime can be committed by persons in any of the following categories: (a) those who have already acquired an arrest record on a non-minor charge, i.e. non-virgins, (b) virgins who are committing an index offense for the first time and who are arrested for it, (c) virgins who are not arrested for the index crime they commit. This group may include professionals who are never arrested, or "amateurs" who commit one or two crimes and then desist without ever experiencing arrest (self-reporting studies of teen-agers suggest that a substantial fraction fall within this category), and some of the persons who have acquired arrest records for minor offenses. If we assume that *all* index crimes are committed by persons in categories (a) and (b), we can obtain an upper limit to the rate at which the non-virgins commit index crimes.

To proceed, we note that the number of persons with non-minor arrest records and whose crime careers have not ended is VT, while the number of crimes each commits is r, each year. Denoting by V the annual number of virginal arrests for an index crime, we have the following inequality:

$$C > V_I + rVT$$

where C represents the annual number of index crimes committed in the United States. Combining this with our previous result for rpT, we obtain

$$p > \frac{2.5V}{C - V} = \frac{2.5V/A}{\frac{C}{A} - \frac{V_I}{A}}$$

publications. For us, crime career measures the time between a first non-minor arrest and the end of a criminal career. The F.B.I., on the other hand, looks at the length of past arrest records of all those arrested in a single year. In general, these need not coincide because not all those represented in the F.B.I. sample will have completed their careers, and because those with very short crime careers will be under-represented in a retrospective calculation, since they tend to drop out of the sample. Numerical examples are given in Blumstein and Larson (1972). The length of the F.B.I.-defined crime career has been falling rapidly in recent years.

19. This result does not imply that every parolee commits at least half an index crime in the year after release. Some will commit none, others one or more. The lower limit says nothing about the proportion of parolees who become involved in new criminal activity.

If we can estimate the value of the ratios in the right-hand member we can compute a lower limit for p and then obtain an upper limit for r.

TABLE 3

NOTATION FOR MODEL 1

A	=	number of persons arrested annually for a non-minor offense
V	=	annual number of virginal arrests for a non-minor crime
V_I	=	annual number of virginal arrests for an index crime
C	=	number of index crimes committed annually
r	=	rate at which persons arrested for non-minor offenses commit crimes
p	=	the probability that a non-virgin who commits an index offense will be arrested for it
T	=	the average length of a crime career from first to last non-minor arrest

There is no published information indicating what percentage of all arrests in a given year are virginal. Of the 1965 arrests represented in the Crime Career file, about 25% were virginal (Federal Bureau of Investigation, 1966:28); the corresponding figure in 1972 was about 35% (Federal Bureau of Investigation, 1973:38). However, not all the prior arrests were necessarily non-minor, reporting on the part of police agencies is not always perfect, and extrapolation to a national population would be uncertain. Nevertheless, the 1965 value of V/A should indicate the general magnitude of V/A to be expected, though the 1972 value is suggestive of changes in the crime picture.

Actually, consistency compels us to set V/A somewhere in this vicinity. To see this, note that the reciprocal of V/A represents the total number of non-minor career arrests a person arrested for the first time on a non-minor charge will experience. Since not all non-minor arrests are for index offenses, this quantity will be somewhat larger than the number of index arrests a person arrested for a virgin non-minor offense will experience in a career. Consequently we have the inequality $A/V > rp\,T + 1 = 3.5$, or $V/A < 1/3.5$. Since the majority of non-minor arrests are for index offenses, we can set $V/A = \frac{1}{4}$, consistent with the 1965 federal data. V_I/A must be smaller than this. We set V_I/A somewhat arbitrarily at $\frac{1}{5}$, noting that p is insensitive to the precise value of this quantity, since the denominator will be dominated by C/A.

C, it will be recalled, was defined as the number of index crimes taking place annually. It is well known that not all crimes are reported to the police. A victimization study conducted in 1965 by the National Opinion Research Center concluded that slightly fewer than half of all index crimes were re-

ported to the police. Other studies of victimization, conducted in Washingon D.C., Chicago, and Boston, found varying degrees of unreporting: in some areas there were 1.5 times as many crimes reported by victims as were reported to the police, while in other areas the rate of non-reporting was 3 or more (President's Commission, 1967: 20-22). The National Crime Panel Surveys conducted by the Census Bureau for the Law Enforcement Assistance Adminstration have begun to provide more recent information on rates of victimization in large cities. With some variation in rates of non-reporting from one city to another, it was found that for 1972, roughly half of crimes of violence and burglary of households were reported to the police, 75-80% of commercial thefts were reported, and about a quarter to a third of personal larcenies (Law Enforcement Assistance Administration, 1974a; 1974b).

Current rates of non-reporting for reporting areas outside the largest cities have not yet been published. In analyzing 1965 data, we will take the ratio of index crimes committed to those reported to be 3; for 1972, we will allow the ratio to vary between 2 and 3. In 1965, 2.78 million index crimes were reported to the police; we assume this corresponds to 8.34 million index offenses committed (Federal Bureau of Investigation, 1966: 3). By 1972, the number of index crimes reported had risen to 5.9 million, which we assume corresponds to somewhere between 11.8 and 17.7 million index offenses.

In 1965, 5.03 million arrests were reported by agencies for jurisdictions encompassing a total population of 135 million. By our criteria, 27% of these arrests were non-minor (Federal Bureau of Investigation, 1966: 112). Extrapolating to the entire U.S. population of 194 million, we find 1.94 million non-minor arrests in 1965. For 1972, the extrapolation is already performed by the F.B.I., and indicates 3.15 million non-minor arrests (Federal Bureau of Investigation, 1973: 119).

From these numbers we obtain $p > 0.15$ and $r < 3.33$ index offenses per year for 1965. For 1972, we find $p > 0.116$ with half of all index crimes assumed non-reported, and $p > 0.176$ if a third of all index crimes are reported. The respective upper limits for r are 4.3 and 2.84. Should the appropriate value for V/A for 1972 turn out to be ⅓ instead of ¼, the lower limits for p would be increased by a factor 1.33, and the upper limits for r would be decreased by the same factor. For definiteness in discussion, we will use the 1965 upper limit in subsequent discussion.

Taking together the lower limit for r established earlier, and the upper limit just established, we have succeeded in bracketing the "true" recidivism rate between 0.5 and 3.33 index offenses per year. If the assumption is correct that released prisoners commit index offenses at the same rate as all non-virgins, the release of N prisoners will result in the commission of somewhere between 0.5N and 3.33N index offenses per year.

It is of some interest to see whether a person previously arrested on a non-minor charge is more or less likely than someone who has not been so arrested to escape apprehension following the commission of an index crime. The chances of apprehension for a person who has such a prior record have just been determined to be larger than 15%. Again assuming that in 1965 the ratio of unreported to reported index crimes was two to one, we find the chances of someone (with or without a prior non-minor arrest) being arrested after committing an index crime to be 6.7% (based on a clearance rate of about 20%). This number, of course, represents an average for all index offenses, and would be much higher for some index offenses than for others. We conclude, then, that a parolee who commits an index crime is more than twice as likely to be arrested for it as someone not on parole.

It may therefore be inferred that if criminal techniques are learned in prison, they do not suffice to overcome ineptitude or the increased jeopardy an official record bestows. Those with serious police records are more likely to be suspected when a crime is reported. As their photographs will be on file in police headquarters, their likelihood of being identified (or mis-identified) by a victim increases. Parolees are subject to unusually intensive surveillance. Their homes and persons can be searched without a warrant. In addition, criminal skills can grow rusty when not practiced during a period of imprisonment. Although communication of criminal skills can and does take place in prison, losers are not necessarily the best teachers.

What can be concluded from these findings about the incapacitative effects of imprisonment? Assume the number of men confined in prison today to be 200,000. Suppose this number were to be cut in half by halving the average sentence length, which is now about two years. Neglecting general deterrence effects, how much extra crime could be anticipated? From the 100,000 men released we could expect somewhere between 50,000 and 333,000 index crimes. Were all prisoners to be freed, and deterrence effects neglected, the crime increment would be

double this. Were additional women to be released, their contribution would be smaller, as suggested by the parole recidivism data cited earlier. Since our assumptions about the magnitude of under-reporting implied that in 1965 there were about 8.34 million index crimes, this would represent a total incapacitative effect of imprisonment of between 1.2 and 8%. Were jails and juvenile institutions included, the number would be slightly larger. The same numbers can be used to indicate the decline in crime rates that could be anticipated were prison populations increased by raising sentences.[20]

From the model parameters obtained through our analysis, something can be said about the number of criminals active at any point in time. The number so obtained will help us in deciding where in the range between 0.5 and 3.33 the most likely value of r lies. If the number of index crimes committed in 1965 was 8.34 million, the number of persons committing them was 8.34 million divided by r. The lower limit for r corresponds to 16.68 million criminals; the upper limit, to about 2.5 million; the magnitude of the total incapacitative effect of imprisonment is then equal to the fraction of this population that is imprisoned—8% in the case of the upper limit for r. Now with a crime career of 5 years, in a steady-state model, ⅕ of this population of criminas abandons crime every year, and is replaced by novices just entering criminal careers. Thus, the number of persons entering criminal careers would vary between 3.3 million and 0.5 million depending on the value for r chosen. The larger of these numbers is clearly impossible: not enough males (who, if arrest records are believed, commit most of the index offenses) are born every year. The smaller of the numbers does not seem particu-

20. In making this assertion, we are making some technical assumptions that may not be entirely valid. One is that the duration of imprisonment has no effect on the length of a crime career. Another involves the demand for criminal activities. When criminals are taken out of circulation in substantial numbers through imprisonment, market forces may attract non-criminals into criminal activity. To the extent that this happens, imprisonment will not reduce crime through incapacitation; it will simply create a turn-over in the composition of the criminal labor force. For homicide and other crimes of violence not incidental to the commission of a theft, this effect is probably non-existent. However, for thieves who, through fences, supply a market, and for suppliers of illegal goods and services, this effect may well be important. Thus, according to Lt. Samuel Carter, head of the gambling squad of the Washington D.C. police force, police activity had little impact on the level of gambling activity in that city: "Nothing we've been able to do so far has made much difference. We closed more than 2,000 gambling cases last year, some of big operators. We might be able to tighten things up for a few days or weeks, but there's always somebody else to take their place. It's a never-ending process." (The Washington Post, November 15, 1972). Robert Martinson (1974b) has also discussed this phenomenon in general terms.

larly unreasonable, and appears generally consistent with Christenson's estimates of the distribution of arrests and conviction in the general population (1967: 216). Of course, if a substantial fraction of index crimes are committed by persons who never acquire a non-minor arrest—and for the property offenses this is not an outlandish proposition—the number 0.5 million just obtained would decrease, as would the most plausible value for r.

V. ESTIMATION OF UNDETECTED RECIDIVIST OFFENSES—MODEL 2

An independent, though somewhat crude estimation of the amount of recidivist crime can be obtained using parole recidivism data. In this model we attempt to determine from information about returns to prison with new commitments or allegations something about the magnitude of involvement in new crimes, whether or not detected, for each of the seven index offenses individually. We assume that a parolee's chances of being arrested after committing an index crime will be the same as those of someone in the general population. As our previous discussion indicates, this is a generous assumption, since the evidence suggested that a parolee was more apt than a member of the general public to be arrested after committing an index crime. However, we want to avoid using the lower limit on likelihood of arrest for an index crime previously obtained so as to have an entirely independent calculation. If the other assumptions of this model are valid, the probable consequence of this procedure will be to over-estimate the amount of parolee crime by at least 100%. By making this assumption, however, we can utilize national clearance rates for index offenses.

The official clearance rate allows us to link the number of reported crimes with the number of arrests. However, the clearance rate cannot be simply identified with the fraction of crimes resulting in an arrest, since some crimes are cleared when no arrest takes place, and since a single crime may be cleared by the arrest of more than one person. The correction factor for the nation as a whole can be obtained by comparing index crimes cleared with the number of arrests for index offenses; the ratio of these two quantities is about 0.7. However, when a crime involving a parolee is solved by the arrest of more than one person, there is no reason to assume that all those arrested will be parolees. Consequently it seems preferable to neglect this correction factor, lest one over-correct.

Parole recidivism data tell us the number of returns to pris-

on for index offenses. Tom complete the inferential chain, we need to know the likelihood that a parolee arrested for an index crime will be returned to prison with a new index commitment or allegation. Since parolees are treated quite differently from members of the general public when arrested for a crime, we cannot use the ratio of imprisonments to arrests for the country as a whole.

Some information, though not quite in the form we require, is provided by a study of the California parole system. This study attempted to answer the following question: if a parolee whose original commitment was for crime X is arrested while on parole, how likely is it that the arrest will result in a return to prison (whether the return is technical or with a new commitment). The answer was found to depend somewhat on the nature of X, the original commitment offense. For non-rape sex it was 37.4%, for homicide, 61.6%, and most of the figures for other offenses fell in the range 40 to 50% (Kolodney *et al.*, 1970).

We, however, are interested in the return rate as it depends on the *new* charge, not the old one. It seems reasonable to suppose that at least some of the variation in return rates reflects the nature of the new charge; the variation in return rates with the original charge would then be at least in part a consequence of a (somewhat weak) correlation between the rate of return and the original charge; presumably the more serious the original charge, the more scope it would allow under indeterminate sentencing for giving the parolee extra time without the complications of a trial. In any event, since the variation with original charge is not too drastic, we cannot go too far astray. For definiteness, we assume that 60% of the new homicide charges and 45% of the other index arrests result in a return to prison.[21]

On the basis of these assumptions, we are in a position to construct Table 4. Totalling the number of crimes committed, we find 32,698 index crimes committed by the 25,602 parolees, or 1.28 index offenses per person per year. To achieve comparability with the estimates made earlier, we multiply this figure by 1.5. The reason for this is that Table 3 utilizes the NORC

21. These figures are drawn from California, 1964. Unpublished data made available to me by John Berecochea for California parole revocation actions in 1971-72 show very little change in these numbers. It is anybody's guess whether they are valid for other states. Parole agencies simply do not publish information on the rate at which their parolees are arrested on specific charges. By extrapolating from one state to the nation as a whole, I am clearly skating on thin ice. At present there is no alternative. Should other states be found to imprison a smaller percentage of their arrested parolees, the estimate of crimes prevented by imprisonment obtained using this model would have to be revised upward.

data on nonreporting, which indicates a somewhat smaller degree of nonreporting than the surveys utilized in preparing the other estimates. When this adjustment is made, we find approximately 2 index offenses per year per person. We note that this number would have had to be increased somewhat had the roughly 20% of the parolee sample returned to custody during the first year after release remained at large, since some of those returned would undoubtedly have committed additional offenses had they not been returned to prison. Since it is reasonable to assume that those apprehended and returned to prison would have committed more crimes on the average than those who remained at large, the correction might be larger than the allowance for the 20% sample depletion alone would suggest.

Despite the uncertainty surrounding various aspects of this model calculation, it is noteworthy that the figure obtained falls within the lower and upper limits established by the previous

TABLE 4

1970 MALE PAROLE RECIDIVISM, ONE YEAR, UNDETECTED CRIME ESTIMATE (25,602 parolees)

Offense	Return to Prison New Commitment(s) or Allegations	Number of Arrests*	Crimes Reported to Police**	Crimes Committed***	Percent Crime Increase if 100,000 Men are Released
non-negligent homicide	36	58	67	67	1.65%
forcible rape	28	62	112	448	1.16%
robbery	277	617	2160	3240	2.42%
burglary	594	1320	7000	21000	1.26%
aggravated assault	120	266	399	798	0.47%
grand larceny	255	566	3110	4665	0.69%
auto theft	189	420	2480	2480	1.05%

*The manner in which the number of arrests is obtained from the number of commitments is described in the text.

**Clearance rates as reported in *Uniform Crime Reports* vary only slightly from one year to the next. We have used the following values: homicide 86%, rape 55.4%, robbery 28.5%, assault 66.7%, burglary 18.9%, larceny 18.2%, auto theft, 17%.

***Here we approximate NORC victimization data to determine rates of non-reporting. Specifically, we assume all homicides are reported, 25% of all rapes, 67% of all robberies, 50% of all aggravated assaults, 1/3 of all burglaries, 2/3 of all larcenies, and all auto thefts. It should be noted that the entries in the final column do not depend on these numbers.

calculation, performed with an entirely different set of assumptions. One would be inclined to place greater confidence in it, were it not so heavily dependent on numbers derived from a single state.

In the final colum of Table 4, we indicate the percentage increase in each of the index offenses that might be anticipated on the basis of this calculation were 100,000 men to be released from prison. The increase ranges from a fraction of a percent for aggravated assault and larceny to as much as 2.42% for robbery. Were the size of the prison population to be increased by increasing sentence lengths, the same table would indicate the corresponding reduction in crime that might be expected, again ignoring all deterrence effects and possible effects of imprisonment on the length of crime careers (about which nothing is known).

The magnitude of the crime prevented through incapacitation must be reduced by the amount of crime committed as a result of imprisonment, by inmates against other inmates and guards, and by guards against inmates. There are no statistics available concerning such crime rates for the nation as a whole, but an idea of their magnitude can be obtained from statistics concerning homicides committed by California prisoners in 1971 against guards and other prisoners. During that year, 17 inmates and 7 guards were killed (Research Division, 1973). On June 30, 1971, the institutional population of California prisons was 21,789. Taking this to be the average population of the California prison system for that year, we find the incapacitative effect of prison on homicide reduced by 42%. Were information on homicides committed by guards against prisoners available, the reduction might be even larger. Of course there was more violence in 1971 in California prisons than there had been in earlier years, and it is possible that other states have lower rates of violence. Nevertheless, it is clear that when one resorts to imprisonment to solve the crime problem, the crime problem reappears within the prison. If crimes against prisoners are no less worth preventing than crimes against non-prisoners, this phenomenon cannot be neglected in a consideration of the incapacitative effects of imprisonment.

VI. DISCUSSION

Subject to the uncertainties of the data base and the limitations of the assumptions employed, the two model calculations presented here provide order-of-magnitude estimates of the collective incapacitative effect of imprisonment, quite apart from

any deterrent effect. It was concluded that the amount of index crime prevented by the physical restraint of the present population of prisoners amounted to no more than 8% of the total. An increase of a year in the present average sentence length of 2 years could be expected to increase this figure by about 4%; a corresponding decrease in sentence lengths would reduce it by the same amount. Our analysis of the inaccuracies of crime prediction suggests that selective confinement on a predictive basis is not a promising direction for improving the incapacitative effectiveness of penal incarceration.

Whether variations in crime rates of this magnitude are substantively important is a matter of judgment. From one perspective, they are equivalent to setting the calendar a year or so ahead or back, since reported crime rates regularly increase by this much from one year to the next. From another perspective, the absence of firm evidence of a deterrent effect leaves open the possibility that the incapacitative effect is a major component of the reduction in crime rates attributable to law enforcement activity.

Two factors limit the size of the incapacitative function of imprisonment. One is the low rate of return to serious crime among parolees. This low rate has been disguised by rates of return to prison for technical violations of parole regulations. This rate may indicate that many inmates are nearing the end of their crime careers by the time they are sent to prison.

The other factor is the low rate of imprisonment for index crimes. In part this reflects low clearance rates; in part, it reflects prosecutorial discretion to drop charges or reduce them to misdemeanors, and judicial reluctance to impose prison sentences. This reluctance is especially high in the case of juvenile defendants, who comprise a large and increasing part of our serious crime picture. Were all adults and juveniles found to have committed index crimes deprived of liberty for a period as long on the average as the sentences served by those now imprisoned (or even somewhat shorter), the incapacitative effect of imprisonment would surely increase by a substantial amount.

Another conceivable route to increasing the incapacitative function of imprisonment would be a "throw away the key" policy. Were all persons now imprisoned held for life, the incapacitative function of imprisonment would again be larger. To determine just how large, we would have to know the percentage of persons involved in serious crime who have been in prison. Strictly speaking, little is known about the characteristics of

individuals who commit serious crimes, but subject to dangers arising from possible biases in the sampling, we can say something about those who become involved in the criminal justice system. The percentage of such persons who have previously been in prison is just the percentage by which crime would be reduced were a "throw away the key" policy to be put into effect, leaving aside deterrent and labor market considerations.

Of the national sample of male parolees released in 1970, 67% had no prior prison experience, though only 27% had no prior non-prison sentences (National Probation and Parole Institutes, 1972). This figure varies from one state to another. In California, 74.3% of the male prisoners newly received from the courts had no prior prison commitment (Research Division, n.d.); in Wisconsin, 69.9% of sentenced offenders admitted to adult correctional institutions in 1970 had no previous experience in a penal institution (Division of Corrections, 1971). For Michigan commitments in 1969, the corresponding figure was 62% (Department of Corrections, 1970), and in New York in 1964, it was 53.6% (Commission of Corrections, 1965). Were the prison population a representative sample of the criminal population, one would be able to say that on a nationwide basis, perpetual confinement of all felons would eliminate about a third of all felonies; and in states like New York, where an unusually high percentage of prison inmates have been in prison before (this is probably a consequence of greater willingness to grant probation), the percentage might approach half.

There are two reasons, however, why this reasoning is incorrect. Since the decision to impose a prison sentence may itself be influenced by the defendant's prior record, it is instructive to look at the characteristics of defendants at an earlier stage in processing.[22] Here data are more scarce, but one finds, for

22. Indeed, this suggests an alternative approach to the incapacitation problem. With a representative sample of arrests for index crimes, one could determine the fraction of such crimes that would have been prevented had the prison population been expanded by extending all sentences for one year by noting what percentage of arrestees had been released from prison within the preceding year, and the consequences of indefinite confinement from the percentage of arrestees who had ever been in prison. Only California provides information of this sort. For 1971, 5.5% of all persons arrested for homicide were on parole and 17.4% had been in prison; comparable figures for rape were 5.4% and 16.9%; for robbery 7.3% and 21.0%; for aggravated assault 2.6% and 12.3%; for burglary, 7.2% and 22.0%; for grand larceny 6.0% and 19.3%; for auto theft 5.1% and 18.4% and for drug offenses 2.6% and 9.6%. (Governor's Select Committee, 1973: 99-130). Since roughly 95% of felons released from prison in California are released on parole, and since most parolees do two years or more on parole (unless returned to prison earlier), one would infer an incapacitative effect of one additional year in prison to be 3-4%, consistent with the figures obtained in

example, that in 1969, only 23.6% of all defendants convicted in federal district courts had a prior prison record (Administrative Office, 1971). In California in 1970, only 22.6% of Superior Court defendants had no prior criminal record of any sort, but only 14.% had a prior prison record. This represents a decrease from 1966, when 19.6% of California Superior Court defendants had a prior prison record (Bureau of Criminal Statistics, n.d.: 45).

These records are not fully trustworthy because of possible incomplete recording. Were juvenile incarcerations included, the percentage with prior institutional experience would be somewhat larger. Nevertheless, if one is concerned with the incapacitative effect of indefinitely extending *adult* sentences—and we have been concerned throughout only with the incapacitative effect of adult prisons—it is appropriate to exclude juvenile commitments. Since a certain amount of selection takes place before one becomes a defendant, and since prior prison record may be a selection criterion at these earlier stages as well, even the above figures, which suggest a crime reduction effect of 15-25% for perpetual confinement, may be an overestimate.

All of the above figures are drawn from those agencies in the criminal justice system that process adults. A major fraction of index crimes—indeed, a majority of crimes involving theft without violence—involve juveniles. Since juveniles have had less time to accumulate a record, it comes as no surprise that they are less likely than adults to have a commitment record. Comparing the prior commitment records of juveniles committed to the California Youth Authority in 1964 with the records of adults committed the previous year to the Department of Corrections, we find 78% of the juveniles committed for homicide had no prior record of any kind, as compared with 34% for the adults; for robbery, the respective figures were 63% versus 17%; for assault, 59% versus 17%, for burglary, 54% as compared with 6%, and for auto theft, 47% versus 1%. (Space—General Corpotion, 1965: 213-214). This greatly reduces the degree to which crimes can be reduced by extending the period of confinement for adults—or for juveniles (since a smaller percentage of juveniles have entered the institution in the first place). Moreover, one sees that it is for the more serious offenses that the percentage of inmates with prior prison experience is lowest. Thus extended confinement—or an equivalent policy (execution,

our first model; and a crime reduction of about 20% for a "throw away the key" policy of lifetime imprisonment for all those now sent to prison. If parolees are caught more often than other felons, the result would be correspondingly smaller.

exile, perfect rehabilitation) that permanently removed individuals from the population of active criminals—would be least effective for the crimes one presumably cared most about reducing.

Our estimates here are much lower than those implicit in claims about the criminal justice system previously published by former U.S. Attorney General Ramsey Clark. According to Clark:

> Much of our crime is caused by the inhumanity of our prisons and by our failure to rehabilitate those we send to them . . . . The most important statistic on crime is the one which tells us that 80 per cent of all felonies are committed by repeaters. Four-fifths of our major crimes are committed by people already known to the criminal justice system . . . If only one-half of the repeated crime we now suffer could be eliminated, society would be free of 40 per cent of all serious crime (Clark, 1970: 215).

Clark goes on to state (1970: 229) that "better than one-half of all the people who leave prisons return convicted of a subsequent crime . . . ."

This is an extremely misleading depiction of our crime problem. More than half of those who leave a prison do not return with a new criminal conviction. The rate of return to prison is indeed high, but most returns are not the result of new convictions. Moreover, no method is presently known to reduce repeated crime by half through rehabilitation. The statement that prisoners should be successfully rehabilitated has about the same status as the statement that terminal cancer patients should be cured: the wish does not provide the means for accomplishing it.

Clark's assertion that 80 percent of all felonies are committed by repeaters does not imply that such a high proportion of offenders have been in prison. Of those arrested for serious crimes, the majority have been arrested previously, but these arrests need not have been for a serious offense, and could have taken place long before the felony arrest. The number of persons arrested each year on *some* charge is extremely large. In 1972, an estimated 8.7 million non-traffic arrests were made (Federal Bureau of Investigation, 1973: 115). It was estimated that 47% of the male population would be arrested sometime during a lifetime, and that this figure, estimated almost ten years, ago, was rising (Christenson, 1967: 216). That a high proportion of persons arrested on felony charges have at some time in the past been arrested for something is consequently not very informative. Since many of those persons had charges against them dismissed, or were acquitted, or were convicted of a crime insuffi-

ciently serious to lead to long-term involvement with the penal system, it seems somewhat unfair to attribute their subsequent involvement in a felony to the prison. There are certainly no grounds for blaming the inhumanity of the prison and its failure to rehabilitate for much of our crime. And the reduction in crime rates by a factor of 5 that Clark implicitly anticipates from a perfect rehabilitation system for prisoners is clearly a gross exaggeration. Ten to fifteen percent perhaps, but hardly more—unless the system were applied to all arrested and convicted persons, including probationers, persons fined, and those sent to jail, or otherwise sentenced to a disposition not involving imprisonment.

The implications of our estimates for public policy are not entirely clear. The proponent of incapacitation might use them to argue for a substantial increase in the size of the prison population. Someone else might argue that the prison population could safely be reduced, since crime would increase by only a small amount. Since the benefits of imprisonment (reduced crime) and its costs (taxpayer costs and costs to those confined) are distributed to different populations, it would be difficult to use standard cost-effectiveness techniques to decide on appropriate trade-offs between costs and benefits. How much suffering through imprisonment can be legitimately imposed on offenders to reduce rates of victimization by some amount is a judgment not easily made.

In the author's view, questions about the severity of punishment are best governed by the gravity of the offense. Unlike street lighting, which may also reduce crime, imprisonment imposes very heavy costs on a limited number of individuals; for this reason it cannot be treated as a simple problem in social engineering. Even in Biblical times, it was recognized that it would be immoral to punish offenders with a severity in excess of the harm that they had themselves inflicted. The concept that the interests of offenders cannot be sacrificed to an unlimited degree even if to do so is socially advantageous would seem to be as essential a protection against the Leviathan now as when the authors of the Declaration of Independence insisted that some rights were inalienable. In the extreme, few would dissent from this proposition: even if it were known that life imprisonment effectively discouraged parking offenses or shoplifting, it would stil be rejected as an unjust punishment because of its disproportionality to the seriousness of the offense. If these essentially retributive notions of punishment retain their importance, as I be-

lieve they do, empirical knowledge of the effects of punishment on crime rates would be of subsidiary importance, perhaps of relevance in deciding between alternate punishments of roughly equal severity, but otherwise beside the point. For the more utilitarian-minded, the estimates presented here may have greater bearing on questions of policy.

Our findings do have considerable bearing, however, on the parole system. Parole seems incapable of performing either of the two functions for which it was initially intended. It is incapable of making accurate predictions about behavior after release, and consequently is unable to make rational decisions of the kind required by a system of selective incapacitation. This inability presently results in the wrongful continued imprisonment of many inmates. In addition, parole supervision seems incapable of preventing released prisoners from returning to crime. Instead it functions as an obstacle, preventing those who have once been given a deviant social identity from returning to a normal existence. The revolving door from which released inmates find it so difficult to escape is in significant measure a product of parole. It would be a step forward for inmates were parole abolished, along with any attempt to utilize predictive methods in the determination of sentences. Following release, ex-prisoners would then be subjected to the same laws and surveillance as other citizens, with the parole agency functioning as a strictly voluntary helping organization to assist released inmates (when asked) with reentry problems—finding a job, locating a residence, coping with bureaucratic hassles, making friends, and the like.

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