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## Criminal Incapacitation Effects Considered in an Adaptive Choice Framework

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### Editors' Note

Philip Cook's analysis of the possible adaptations made by offenders to policies of incapacitation constitutes a valuable example of the policy applications of a rational choice perspective. Taking as his starting point the assumption that people adapt their behavior in the light of information about the costs and benefits of alternative courses of action, Cook draws on the "danger compensation" thesis current in the road safety field to argue that such adaptations may sometimes act to partially negate the effects of policy. He shows clearly that selective incapacitation measures may, depending on the extent to which different classes of offender adapt their behaviors in the knowledge of the changing costs and benefits involved, very well lead to an increase rather than a decrease in overall levels of crime. His is a hypothetical example and needs to be fleshed out with interview and behavioral data, but it illustrates how important it may be for policymakers to obtain a clearer understanding of the way in which crime-control policies—whether incapacitative, deterrent, rehabilitative, or preventive—are perceived, evaluated, and reacted to by their intended objects. Neglect of the offender's perspective probably underlies the catastrophic failure of rehabilitation, and a similar neglect may well lead to the failure of many of the new deterrent policies. The situation can only be remedied by a large investment in research into offender perceptions.

One incontrovertibly effective method of preventing someone from committing crimes is to eliminate his or her opportunities for crime by means of physical restraint. Execution and solitary confinement are totally effective in this respect. Partial methods such as exile, maiming, and imprisonment may also be highly effective methods of incapacitation. In a period of intense concern about criminal activity, it is not surprising that such a plausibly effective mechanism for reducing crime has great appeal. The public's interest in reducing crime by incapacitating active criminals has created a receptive audience for the

empirical and analytical research on the subject. Indeed, research on incapacitation effects may be the most successful research program in criminology during the last decade, in terms of interest among both scholars and practitioners in the field.

Unfortunately, the incapacitation research program has been guided by a conceptual framework that is simplistic and yields misleading predictions. This conceptual framework views individual criminals as automatons, insensitive to changing incentive structures and programmed to play out predetermined criminal careers subject only to possible interruptions due to incarceration. These assumptions are certainly open to challenge. A richer conceptual framework that incorporates the possibility of adaptive behavior to changing incentives may be more appropriate to analyzing the effects of incarceration on crime rates. This chapter presents such a framework and argues that assumptions undergirding incapacitation research represent a rather dubious special case that does not deserve any special standing in making policy prescriptions.

The chapter is organized as follows: The section entitled "Research on Incapacitation" reviews the incapacitation model and the policy research findings that have been generated by the application of this model to various sorts of empirical evidence. The subsequent section develops an alternative model that stresses the possibility of adaptive behavior of criminals and others. The conflict between the two models is elucidated by reference to the so-called "danger compensation" literature, which has most commonly been applied to evaluating regulations designed to promote highway safety. The third section then presents the results of a simulation study, demonstrating that a selective incapacitation sentencing policy may, under quite reasonable assumptions concerning adaptive behavior, be inferior from a crime-control perspective to a uniform sentencing strategy. The final section then considers the possibility that potential victims also exhibit adaptive behavior in protecting themselves. If so, the impact of implementing more effective crime-control measures could be undermined by compensating actions by the public.

This chapter does not explore the cognitive process underlying adaptive behavior. It is enough for my purposes simply to stipulate that one adaptation to a change in the severity of punishment for a crime may be a reduction in the rate of commission of that crime by some active criminals. My focus is on the aggregate consequences of adaptive behavior of this sort; a detailed consideration of the nature of the decision-making process by criminals would divert attention from this focus. Nonetheless, more complete exploration of deterrence and incapacitation effects requires some analysis of individual perception and decision-making processes (cf. Cook, 1980). Developing these cognitive aspects of adaptive behavior is left to other chapters in this volume.

## Research on Incapacitation

The demography of criminal activity is characterized by heterogeneity and persistence (Petersilia, 1980). For any one year the bulk of all serious crime is committed by relatively few high-rate offenders. Those who are actively involved in crime in any one year are much more likely than others to be active in the following year. These characteristics together suggest that criminal offenders constitute a distinct subpopulation, and motivate the inquiry into the underlying differences between this group and the relatively law-abiding majority. Some of the most important readily observable correlates of criminal involvement, at least for common crimes of theft and violence, are sex, age, race, socioeconomic status, and population density of city of residence. A number of other, more subtle attributes have also been identified (Greenwood and Zimring, 1984). Presented with detailed descriptive information on a cohort of 10-year-old children, a criminologist could predict which would become high-rate offenders and be confident that these predictions, although not precisely accurate, would be far better than chance (Farrington, 1979). Many criminologists believe that such predictions could be improved markedly by additional collection and analysis of longitudinal data on individuals.

These observations regarding the marked and predictable interpersonal differences in criminal involvement support the assertion that incapacitating some people (the high-rate offenders) will prevent more crimes than incapacitating others, and that the high-rate offenders can be identified (albeit imprecisely) given sufficient information concerning their past behavior and other characteristics. The "science" of incapacitation is concerned with a number of related technical issues (Cohen, 1983), including (1) improving the accuracy with which high-rate offenders can be identified, using data that are typically available to criminal justice system (CJS) officials; (2) predicting the effects on crime rates of increasing or reducing the number of prisoners; and (3) evaluating alternative sentencing policies (i.e., alternative allocations of prison capacity) to identify the policy that would reduce crime the most given the current prison capacity. This last issue, called selective incapacitation, has been of particular interest because it seems to offer something for nothing: a reduction in crime engendered by employing existing CJS resources more efficiently.

There has been considerable controversy over the ethics and efficacy of selective incapacitation. One basic question is whether it is just to allow predictions of future criminal activity to guide prosecution and sentencing of individual defendants (Von Hirsch, 1976; Moore et al., 1984). If this future-oriented approach is deemed acceptable, there remains the related issue of whether employment history, marital status, and other such information should be used to help identify (predict) the high-rate

offenders, or whether such predictions should be based solely on defendants' criminal records. There is also intense controversy over technical matters related to the precision of statistical prediction methods for identifying high-rate offenders (Cohen, 1983): The accuracy with which high-rate offenders can be identified influences the estimated payoff (in terms of reduced crime) of adopting a more selective allocation of prison capacity.

Notice that none of these three controversial aspects of a selective incapacitation policy challenges the basic factual assertion underlying this policy, namely, that the impact of imprisonment on the crime rate could be maximized (given a fixed prison capacity) by reserving prison for those convicts who would be the most active criminals if released. The assumptions that support this assertion constitute a rather simplistic conceptual framework for understanding crime. In essence, this framework postulates that each individual can be characterized by his or her personal crime rate, which is not influenced by the availability of attractive crime opportunities, the activities of the CJS (other than through the incapacitation effect), or other features of the individual's environment (Shinnar and Shinnar, 1975; Cohen, 1983). Thus, individuals are viewed as playing out their predetermined criminal careers completely insensitive to changes in the costs and benefits of criminal activity. In particular, the only mechanism by which prosecution and sentencing policies influence the crime rate is incapacitation.

These assumptions have the virtue of being sufficiently simple to generate clear implications, but they may be misleading as a guide to evaluating policy options. People adapt their behavior in response to the opportunities available to them. Criminals are not automatons, and neither are potential victims. Incorporating the possibility of adaptive behavior into the theoretical framework for evaluating incapacitation effects yields fundamentally different predictions. The next section develops the justification for assuming that criminals and others exhibit adaptive behavior.

## Adaptive Behavior

There can be no doubt that people tend to adapt their behavior to environmental signals concerning the personal costs and benefits of alternative courses of action. The "signals" that are particularly relevant in evaluating incapacitation effects are generated by the activities of the CJS, especially prosecution and sentencing. Suppose that CJS authorities institute a selective incapacitation program that includes a career-criminals prosecution unit and a policy of sentencing on the basis of predicted future crime involvement. This new program would result in a change in the allocation of prison capacity, but it would also signal

offenders that the structure of CJS threats had changed, with greater emphasis on some types of crimes and criminals and less emphasis on others. This message might be transmitted via publicity given to the new program, but probably more importantly the transmission would occur via word of mouth and personal experience. Active criminals tend to be better informed than the public at large about such matters, for obvious reasons (Cook, 1980; Erickson and Gibbs, 1979). Offenders faced with an increased threat of severe punishment could adapt in a variety of ways: by employing greater caution in choosing their accomplices, their modus operandi, and their crime targets; by investing more in their legal defense if arrested; and by committing fewer crimes. (Indeed, some may go into early retirement as a result of the increased threat.) Other, low-rate offenders, faced with a reduced threat of imprisonment as a result of the same program, may adapt along the same dimensions but in the opposite direction.

Why have incapacitation theorists not allowed for these possible changes in behavior? Both Greenwood (1982:4) and Cohen (1983:10) justify their exclusion of deterrence effects in part by reference to the conclusions of a special panel of the National Academy of Sciences (Blumstein et al., 1978). This panel critiqued various studies that used econometric methods to measure deterrence effects and concluded that these studies were so seriously flawed that their findings (which were supportive of a general deterrent effect) should be ignored:

The major challenge for future research is to estimate the magnitude of the effects of different sanctions on various crime types, an issue on which none of the evidence available thus far provides very useful guidance (Blumstein et al., 1978:7)

Greenwood (1982) asserted that the appropriate response to our ignorance concerning the magnitude of deterrence effects is to ignore them in setting sentencing policy:

The lack of evidence on the effects of either rehabilitation or deterrence leaves incapacitation as the only utilitarian basis for rationalizing differences in sentence severity for different types of offenders. (Greenwood, 1982:5)

This assertion deserves scrutiny. First, although Greenwood lumps rehabilitation and deterrence together as both lacking evidence on effectiveness, in fact the literature on these two mechanisms is not at all similar. There is considerable evidence on the effectiveness of a wide array of rehabilitation programs; this evidence strongly indicates that most of these programs have little or no effect (Martinson, 1974; Sechrest et al., 1979). On the other hand, quasi-experimental studies of a number of deterrence-oriented interventions have demonstrated that a wide range of crimes and types of offenders are responsive in the expected way to a change in the threat level (Zimring and Hawkins, 1973; Cook, 1977; Zimring, 1978; Cook, 1980). Although Greenwood is correct that

criminologists cannot generate precise predictions about the deterrent effect resulting from a proposed change in CJS policy, the existence and potential importance of the general deterrent effect cannot be reasonably denied. Thus, Greenwood's assertion amounts to saying that it is appropriate to ignore the deterrence mechanism in setting a utilitarian sentencing policy, not because it is unimportant, but rather because we do not know just how important it will be in any particular instance. As a rule, limiting the analysis of a policy issue to those aspects for which good information is available, and ignoring other aspects, yields unreliable conclusions. In this instance, ignoring the deterrence mechanism may yield highly misleading results, as shown in the simulation presented in the following section. First, however, it is useful to note that my argument concerning the incapacitation effect has an exact parallel in the literature on highway safety.

Orr (1982) introduced his article "Incentives and Efficiency in Automobile Safety Regulation" with this statement:

... there is a strong theoretical presumption, and substantial empirical evidence, that driver response to mandated safety devices will offset at least a portion of their technical effectiveness .... the concept of danger compensation discussed here has application to other areas of social policy: especially the subset from the health and safety area where the nature of risk is well known and substantially controlled by the individual. (Orr, 1982:43)

The theory underlying the "danger compensation" thesis assumes that people do not respond passively to the hazards of their environment, but rather choose their desired level of safety and adapt their behavior accordingly. The environment in the case of highway travel includes road conditions, safety features built into vehicles, traffic patterns, and so forth. This environment does not determine the actual risk facing a driver, but rather in effect provides the driver with a set of opportunities relating the risks of serious accident to behavioral choices (when, where, what, and how to drive). The actual risk is then determined by the combined effect of environment and choices of behavioral response.

This perspective has important policy implications. The most notable example is with respect to federal auto safety standards. Predictions of the expected number of lives saved from a proposed requirement such as equipping all new autos with passive-restraint devices have generally been made on the basis of technical considerations, without admitting the possibility that drivers may choose to drive less safely in response to this new form of protection (Huelke and O'Day, 1981; Blomquist and Pelzman, 1981). Yet from the driver's perspective, the addition of a passive restraint device may be seen as lowering the "cost" (in terms of injury risk) of pursuing other objectives, such as reducing travel time (Pelzman, 1975). The decision to drive faster or more intensely is a decision to "spend" some of the increased protection offered by the restraint on the

"purchase" of a reduction in travel time. If drivers do adapt their behavior in this fashion, then the predictions based on technical considerations will prove erroneous, exaggerating the number of lives that are ultimately saved by the safety requirement.

The nature and extent of compensating behavior will depend on the precise circumstances (Slovic and Fischhoff, 1982) and cannot be predicted given the current state of knowledge. Even after new safety measures have been implemented, it is difficult to determine their net effect on injury rates (cf. McKenna's, 1985, response to Wilde, 1982). The debate over the effectiveness of auto safety standards is a notable case in point (Pelzman, 1975; Graham and Garber, 1984), but there can be no question that danger compensation occurs in a variety of circumstances. We walk more cautiously when barefoot than when shod, and we drive more carefully (or stay home) when roads are icy. If these facts were ignored, an evaluation of proposals to ban walking barefoot or to place heating coils in roads would exaggerate their potential effects on injury rates.

There are two obvious applications of the danger compensation thesis to crime. As criminals become aware of a change in the likelihood or severity of punishment for criminal activity, they may change their behavior in various ways, as discussed above. Potential victims of crime may also engage in danger compensation: an increase in a neighborhood's crime rate may result in residents taking greater precautions. The implications of these adaptations are developed below.

### The Effects of a Selective Incapacitation Policy: A Numerical Example

The example presented here explores the consequences of modifying an incapacitation model to allow for adaptive behavior on the part of criminals. For the sake of concreteness and realism, the example uses some of the parameter values estimated by Greenwood (1982) in connection with his study of the effect of imprisonment policy on robbery in California. He divided the population of imprisoned robbery convicts into three groups on the basis of a seven-factor predictive scale which included characterizations of prior criminal record, drug use, and employment. On the basis of interview data with these prisoners, he estimated an annual offense rate of 2.0 for the low-rate group, 10.1 for the medium-rate group, and 30.8 for the high-rate group (Greenwood, 1982:66). In my example, these rates are rounded off to 2, 10, and 30, respectively. On the basis of Greenwood's estimates, corrected by Cohen (1983), there were in the mid-1970s about 50,000 low-rate, 12,000 medium-rate, and 9,000 high-rate robbers in California. The probability of

imprisonment for a given commission of a robbery was .0258. These numbers are used in my example.

The example compares a uniform sentencing policy, in which all prison sentences are 24 months, with a selective imprisonment policy. The selective policy is intended to make more efficient use of the same prison capacity by giving high-rate offenders a longer term and low-rate offenders a shorter term. I set the longest term (for high-rate robbers) at 60 months, and the shortest (for low-rate robbers) at 12 months. The prison term for medium-rate robbers was then set at 29.2 months, a number calculated to yield the same total prison population under the selective sentencing regime as occurs under the uniform sentencing regime assuming that individual crime rates are not affected by the change in sentencing policy. Given these parameter values, we can calculate the reduction in the crime rate resulting from allocating the given prison capacity selectively rather than uniformly among robbery convicts.

Here is how the simulation works. Each of the three types of robbers is assumed to commit offenses at a uniform rate (2, 10, or 30 offenses per year). Each offense exposes them to a .0258 probability of (immediate) imprisonment. This process eventually converges to a steady-state crime rate and prison population for each of the three groups. The steady-state equilibria for uniform sentencing and selective sentencing have the same number of robbers in prison, but the offense rate is 19% lower when sentencing is selective. This pure gain in efficiency of imprisonment is achieved by increasing the percentage of high- and medium-rate offenders who are in prison at any one time, while reducing the percentage of low-rate offenders who are imprisoned. These results illustrate the case for a selective incapacitation strategy, as developed by Greenwood and others.

Now suppose that the offenders change their behavior in response to the change from uniform to selective sentencing. Those classified under the selective system as low-rate offenders perceive that the threatened prison sentence for their robberies has been reduced from 24 months to 12 months, and hence increase their rate of offending. The high-rate group members perceive an increase in the threatened prison sentence from 24 months to 60 months, and hence reduce their rate of offending. The medium-group members also face a somewhat higher price for their crimes and adapt their behavior accordingly. The basic assumption, then, is that the change from uniform to selective sentencing has deterrent effects as well as incapacitation effects.

Further assumptions are needed to explore the implications of this adaptive behavior by criminals. For each of the three groups (low, medium, and high), I assume that the offense rate per year  $C_i$  for a free individual is given by this expression:

$$C_i = k_i T_i^E \text{ (for } i = \text{low, medium, high),}$$



where  $T$ ; is the discounted present value of the prison term (assuming an annual rate of time discount of 25%),  $E$  is the elasticity of the crime rate with respect to changes in sentence length, and  $k$ ; is a constant calculated to generate the original offense rates (2, 10, and 30) when sentences are uniform at 24 months. (Note that  $k$ ; depends on the value assumed for  $E$ .)

Table 13.1 reports crime rates for free individuals under selective sentencing. The first row is calculated on the basis of the usual assumption of incapacitation models: that offenders do not change their offending in response to changes in sentencing policy. The second row assumes a small deterrent effect ( $E = -0.3$ ), and the third row a larger effect ( $E = -1.0$ ). Notice that even under this last assumption, the high-rate offenders remain highest even when faced with a much stiffer punishment than the others. The deterrence effect does not change the rank order of offense rates among the different groups, but it does change the relative magnitudes.

Table 13.2 reports results of the simulation for each group of offenders and for all offenders combined. The relevant comparisons in each case are between selective sentencing and uniform sentencing regimes. In the last column of the bottom section of Table 13.2 we see that the annual offense rate falls 19% if  $E = 0$ , but falls only 14% if  $E = -0.3$ . If  $E = -1.0$ , then the offense rate actually increases when selective sentencing replaces uniform sentencing. Note that these differences are not the result of changes in the prison population, which surprisingly changes very little for different assumptions about elasticity. Rather, the total offense rate increases (when  $E = -1.0$ ) as a result of moving from uniform to selective sentencing because the increase in offending by the low-rate group outweighs the reduction in offending by the other groups.

Another interesting set of results from this example can be generated by disaggregating the net change in crime into a net incapacitation effect and a marginal deterrent effect. Table 13.3 displays the effects of

TABLE 13.1 Individual Crime Rates as a Function of Elasticity Value<sup>o</sup>

| Elasticity | Offender Category |             |           |
|------------|-------------------|-------------|-----------|
|            | Low Rate          | Medium Rate | High Rate |
| 0          | 2.0               | 10.0        | 30.0      |
| -0.3       | 2.38              | 9.57        | 25.09     |
| -1.0       | 3.56              | <b>8.63</b> | 16.54     |

<sup>o</sup>Crime rates are calculated for the case when low-, medium-, and high-rate offenders are sentenced (when caught) to prison for 12 months, 29.2 months, and 60 months, respectively.

TABLE 13.2 Effects of Selective Sentencing for Three Elasticity Values

| Type of Sentencing                | Percent of Offenders Free | Number of Offenders in Prison (000) | Crimes Prevented by Incapacitation Per Year (000) | Crimes Committed Per Year (000) | Percent Change in Crimes Per Year |
|-----------------------------------|---------------------------|-------------------------------------|---|---------------------------------|-----------------------------------|
| Low-Rate Group: $N = 50,000$      |                           |                                     |   |                                 |                                   |
| Uniform sentencing                | 90.6                      | 4.68                                | 9.4   | 90.6                            |                                   |
| Selective, $E = 0$                | 95.1                      | 2.45                                | 4.9   | 95.1                            | 5.0                               |
| Selective, $E = -0.3$             | 94.2                      | 2.89                                | 6.9   | 112.0                           | 23.6                              |
| Selective, $E = -1.0$             | 91.6                      | 4.20                                | 15.0  | 162.9                           | 79.8                              |
| Medium-Rate Group: $N = 12,000$   |                           |                                     |   |                                 |                                   |
| Uniform sentencing                | 66.0                      | 4.08                                | 40.8  | 79.2                            |                                   |
| Selective, $E = 0$                | 61.4                      | 4.63                                | 46.3  | 73.7                            | -6.9                              |
| Selective, $E = -0.3$             | 62.5                      | 4.50                                | 43.1  | 71.7                            | -9.5                              |
| Selective, $E = -1.0$             | 64.8                      | 4.22                                | 36.4  | 67.2                            | -15.2                             |
| High-Rate Group: $N = 9,000$      |                           |                                     |   |                                 |                                   |
| Uniform sentencing                | 39.2                      | 5.47                                | 164.0   | 106.0                           |                                   |
| Selective, $E = 0$                | 20.5                      | 7.15                                | 214.6   | 55.4                            | -47.7                             |
| Selective, $E = -0.3$             | 23.6                      | 6.88                                | 172.5   | 53.3                            | -49.7                             |
| Selective, $E = -1.0$             | 31.9                      | 5.13                                | 101.4   | 47.5                            | -55.2                             |
| All Groups Combined: $N = 71,000$ |                           |                                     |   |                                 |                                   |
| Uniform sentencing                | 80.0                      | 14.23                               | 214.2   | 275.8                           |                                   |
| Selective, $E = 0$                | 80.0                      | 14.23                               | 265.7   | 224.3                           | -18.7                             |
| Selective, $E = -0.3$             | 79.9                      | 14.27                               | 222.5   | 237.0                           | -14.1                             |
| Selective, $E = -1.0$             | 79.5                      | 14.55                               | 152.8   | 277.6                           | 0.7                               |

TABLE 13.3 Effects of Changing From Uniform to Selective Sentencing Policy

| $E$  | Net Incapacitation<br>Effect (000) | Marginal Deterrence<br>Effect (000) | Net Crime<br>Reduction (000) |
|------|------------------------------------|-------------------------------------|------------------------------|
| 0    | 51.5                               | 0                                   | 51.5                         |
| -0.3 | 8.3                                | 30.5                                | 38.8                         |
| -1.0 | -61.4                              | 59.6                                | -1.8                         |

changing from uniform sentencing to selective sentencing. If  $E = 0$ , there is no deterrent effect, and the reduction in the overall crime rate results entirely from an increased incapacitation effect. However, the increase in incapacitation is much smaller if offenders exhibit even a small degree of responsiveness to threat ( $E = -0.3$ ), and for  $E = -1.0$  the total incapacitation effect is actually greater for uniform sentencing than for selective sentencing. This last result is perhaps counterintuitive. How could a selective incapacitation strategy result in a reduction in the number of crimes prevented by incapacitation? The answer is simply that those who are locked up under a selective sentencing policy have a lower offense rate on the average. Even though a higher percentage of prisoners are from the high-rate group, this group's offense rate has been reduced by the increased threat level. Selective sentencing does *not* necessarily produce a more efficient use of prison capacity than uniform sentencing.

The point of this extended example is to show that the claims made for selective incapacitation depend critically on the assumption that offenders' crime rates are insensitive to the severity of punishment. To the extent that active criminals are well informed about sentencing policies and tend to adapt their behavior to the severity of punishment, selective incapacitation will accomplish less reduction in crime than implied by the usual incapacitation models.

Although the incapacitation theorists may be overstating the potential efficacy of a selective incapacitation policy, they are surely underestimating the overall effect of imprisonment on crime rates. Cohen (1983) reported that the aggregate incapacitation effect achieved by imprisonment circa 1980 was to reduce crime rates by at most 20%. Furthermore, she reported estimates indicating that imposing longer prison sentences on convicts is generally not a promising strategy for reducing crime, because achieving even small gains against crime requires large increases in an already unprecedentedly large prison population. Her analysis is consistent in ignoring deterrent effects of prison sentences, and for that reason it is misleading. Surely the rate of serious crime would increase by far more than 20% if all prisoners were released and imprisonment were no longer a sentencing option available to judges. Other currently available sentencing options—fines and

restitution requirements—are intrinsically less punitive than imprisonment, particularly for indigents, and hence have less of a deterrent effect. As long as the only available modes for imposing severe punishment also incapacitate the convict, deterrence and incapacitation effects are inextricably linked. A change in sentencing policy will influence the crime rate via both mechanisms, and both should be considered in evaluating the change to avoid invalid results.

## Expanding the Conceptual Framework

Conclusions about the effect of imprisonment on crime are determined by one's choice of conceptual framework for understanding the linkages between sentencing policy and criminal behavior. The framework adopted in recent writings on incapacitation effects is very simple: imprisonment and the threat thereof are assumed to have no effect on individual criminal behavior except to physically prevent criminal activity by those criminals who are incarcerated. Thus portions of predetermined criminal careers are not acted out due to incapacitation. My alternative framework, which allows for a deterrent effect, generates quite different predictions about the consequences of alternative sentencing policies, as shown in the preceding section.

Even this alternative framework is simplistic. The interaction between criminal behavior and the actions of the CJS is properly viewed in a larger context that takes account of the positive incentives to participate in criminal activity. Each predatory criminal act can be viewed as an instance in which the criminal perceived an opportunity, decided that it was worthwhile, and acted on this decision (see, generally, Clarke, 1983, and Clarke and Cornish, 1985). The criminal may evaluate opportunities along a number of dimensions, including likelihood of successful completion of the crime, payoff if successful, probability of arrest and conviction, and severity of punishment if convicted (Carroll, 1978; Smith and Thompson, 1983). The availability of attractive opportunities may influence the structure and distribution of criminal activity and also the overall volume of crime. Opportunities are provided by the public as a generally inadvertent byproduct of the routine activities of everyday life. Potential victims will exercise more or less care in protecting themselves and their property depending on their circumstances, but also on their perception of the likelihood of victimization. Thus the threat of crime engenders private self-protection activities, and these activities may in turn prevent or discourage some criminal activity.

In this conceptual framework, observed crime rates are the net result of a dynamic interaction between criminals, the CJS, and the public at large (Ehrlich, 1981, 1982; Cook, 1977, 1985). If CJS resources and effectiveness are increased, then the initial reduction in crime (caused by enhanced

deterrence and/or incapacitation) may provoke compensatory behavior by potential victims. If, for example, potential victims reduce self-protection efforts, then the initial success of the CJS in reducing crime may be lost, at least in part. Thus the notion of danger compensation applies to potential victims as well as to criminals and has potentially important implications for assessing the ultimate consequences of CJS policy.

Mechanical models of crime determination generate clear results, but these results are not reliable if criminals and victims do not behave in a mechanical fashion. The additional complexity introduced by allowing for adaptive behavior is justified if nothing else by the need to judge the appropriate degree of confidence to place on the implications of the mechanical model. I conclude that the results of the recent incapacitation research program, resting as they do on mechanical, simplistic assumptions about criminal behavior, should be viewed as subject to great uncertainty.

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