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## National Institute of Justice

## Research in Brief

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# Making Confinement Decisions

Edwin W. Zedlewski

Today's criminal justice system is in a state of crisis over prison crowding. Even though national prison capacity has expanded, it has not kept pace with demands. While capacity in State prisons grew from an estimated 243,500 bedspaces in 1978 to 424,000 bedspaces by 1985, State prison populations swelled from 270,025 to 463,378 inmates, according to a Department of Justice survey. Expendi-

tures by State correctional systems exceeded \$8 billion annually.

Recent legislative changes to penal codes in the form of mandatory prison terms for drunk drivers and for those who commit gun crimes, plus calls for the abolition of parole boards, indicate a popular sentiment for more prison space. Yet some professionals resist, arguing that prison construction is too

expensive and contributes little to the reduction of crime. As one task force concluded,

Recognizing that prison accommodation is an expensive and scarce State resource, the Task Force is appalled that use of this resource is often shortsighted and even self-defeating of general public safety goals. Millions are spent annually to incarcerate prisoners in overcrowded

### From the Director

There is understandable concern about crowding in our Nation's prisons. Courts have intervened in 36 States to order corrections systems to relieve crowding and improve conditions. Although States have expanded prison capacity and increased spending for corrections, States will still need to add an estimated 1,000 additional bedspaces each week if current rates of growth continue.

Given today's fiscal pressures and soaring construction costs, policymakers face difficult choices. They must either build more prisons or let most convicted offenders go back to our communities.

Building more prisons is costly. But not expanding capacity also has expensive consequences. Typically, the debate over prison crowding has looked only at the first and most visible part of this equation. The costs of constructing and operating prisons are easy to tally and therefore frequently put forth in discussions about prison crowding.

The true costs of *not building* are more difficult to quantify. There are scattered findings on losses due to crime and outlays for criminal justice, but it is impossible to put a price tag on victim harm and fear of crime.

A better understanding of not only the costs but the benefits society gains when criminals are incarcerated is needed to help decisionmakers weigh choices in this difficult policy area. Dr. Edwin Zedlewski, an economist on the staff of the National Institute of Justice, has drawn together and compared data on both sides of the question. His informative analysis is presented in this *Research in Brief*.

Dr. Zedlewski's findings suggest that arguments that confinement is too expensive may not be valid when weighed against the value of crimes prevented through incapacitation and crimes deterred by the threat of imprisonment.

Hardened, habitual criminals can be one-person crime waves. An NIJ-sponsored survey of inmates in three States showed they averaged between

187 and 287 crimes per year, exclusive of drug deals. Ten percent of the inmates in this group *each* committed more than 600 crimes annually.

This *Brief* tallies the costs—direct and indirect—of this level of crime to society, weighs that against the costs of confinement, and concludes that proper use of correctional facilities can save communities money by averting a variety of costs imposed by crime.

When we consider the problem of prison overcrowding, we must also consider crime victims. We must balance the half million inmates against the nearly 40 million crimes committed each year. If we continue to focus our concern primarily on prison crowding without acknowledging the necessary function prisons perform by incapacitating the violent predators and deterring those who might otherwise commit serious crimes, we do a disservice to victims and undermine public confidence in our system of justice.

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and dehumanizing conditions that are more likely to produce repeat-offenders instead of responsible members of society.

Some 11.5 million persons were arrested in 1984, about 2.4 million for FBI Index crimes. The fact that there were only 180,418 new admissions to prison that year underscores our reluctance to incarcerate. Do we need more prisons or more alternatives to prison construction? Should the expansion of prison capacity continue?

This *Research in Brief* brings together information on both the costs and benefits of punishment to examine these questions more objectively. Since so many elements of the sentencing decision—such as victim harm, justice, and public fear—defy quantification, any picture necessarily will be incomplete. Despite the incompleteness of the data, the conclusion of this report is that communities are paying far more by releasing repeat offenders than by expanding prison capacity.

## Quantifying the social cost of crime

Direct expenditures due to crime and crime prevention were approximately \$100 billion in 1983. As Figure 1 shows, these expenditures were about equally divided among victim losses, private security goods and services, and operation of the criminal justice system. Prison and jail operations consumed less than 10 percent of the total bill. A key question facing policymakers is whether increasing the share allotted to confinement can reduce the total cost of crime to the public.

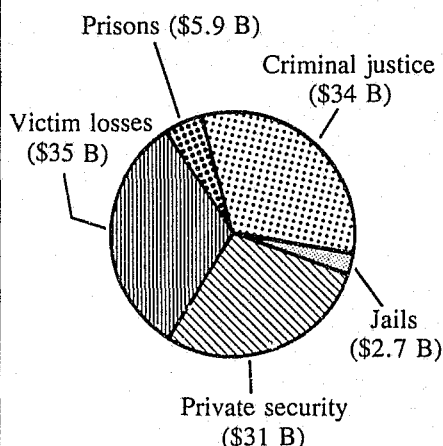
Taxpayers support a criminal justice system to protect themselves, their families, and their property from crime. When they vote to spend more on law enforcement, they save in other areas. There are fewer physical and financial losses. Fewer businesses and office buildings shut down because of

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*The Assistant Attorney General, Office of Justice Programs, coordinates the criminal and juvenile justice activities of the following program Offices and Bureaus: National Institute of Justice, Bureau of Justice Statistics, Bureau of Justice Assistance, Office of Juvenile Justice and Delinquency Prevention, and Office for Victims of Crime.*

**Figure 1**

**National crime costs—1983  
(\$ billions)**



crime threats, and fewer guards and alarm systems are needed in homes and apartment buildings.

Communities must eventually reach a point, however, where additional outlays to the criminal justice system are wasteful. Quadrupling outlays, for instance, would produce an abundance of police, courts, and prisons but not eradicate crime. There would still be some victims and some need for private home and business protection. The combined losses to crime plus public and private safety outlays would be greater than if the public had decided to spend substantially less on enforcement and accept a little more crime.

The trick is to balance the expenditures on safety against the benefits received. In the case of imprisonment, the costs of confining a convicted offender should be balanced against the benefits of that confinement to the community. Unfortunately, one side of the equation—confinement costs—is quite visible, while the other side—confinement benefits—is relatively invisible.

It is fairly easy to calculate a cost of one offender's year in prison; it is considerably more difficult to assess the consequences of not confining that offender for the same year. Measurement difficulties often induce people to focus on the visible elements and assume that the less visible elements do not exist. This *Brief* shows that at least a crude estimate of confinement benefits can be made, so that costs and benefits can be compared.

The computations ignore all pain and suffering of victims, fear on the part of the public, and other intangibles like justice and retribution. They focus on three pieces of information: the cost of a year in prison; the average number of crimes committed in a year by typical prison-bound criminals; and the average cost of a crime to society.

The first number estimates what society pays to sentence an offender to a year in prison. Multiplying crimes per offender times a cost per crime approximates what society pays by not sentencing that offender to confinement. The numbers are developed in the sections that follow.

## Costs of a year in prison

Custodial costs for a year in a medium-security prison are about \$15,000, according to the American Correctional Association. Two elements must be added to custodial costs to measure the social costs of the decision to incarcerate. They are the amortized costs of constructing the prison facility and the indirect costs incurred by removing an offender from a community.

Construction and financing costs can make building prisons seem overwhelmingly expensive when presented as a lump sum in a bond issue. When these charges are amortized over the useful life of a facility, they become quite modest. A variety of accounting techniques can be used to amortize construction costs over the life of a facility, but because the useful life of a facility is difficult to estimate, it is not obvious that complicated methods improve the accuracy of an estimate.

A simple way to estimate annualized construction costs is to compute the facility's fair rental value. Fair rental value is approximately the value of the facility and its property multiplied by the current interest rate. With construction costs for new prisons averaging about \$50,000 per bedspace according to a 1984 General Accounting Office report, and using a 10-percent interest rate, a prison space (with its share of the rest of the prison structure) costs about \$5,000 per year.

Imprisonment may create other, unintended costs for a community. Some offenders performed useful legitimate services before they were convicted,

and these services are now lost. Additionally, imprisonment of breadwinners may force their families into welfare dependency. These losses are somewhat more difficult to assess without detailed information on prisoner employment histories and family situations. Moreover, these costs might be offset by other gains within the community.

For an offender who was unemployed when convicted, for instance, a State would actually gain by paying less unemployment compensation. If imprisoning an offender means that an unemployed person replaces him in the work force, then there might also be welfare and unemployment savings. Clark Larsen estimated that society lost an average of \$408 in taxes and \$84 in welfare payments per year of imprisonment for a sample of burglars in Arizona. Assuming a social loss of \$5,000 per year should therefore generously account for unanticipated social losses. To summarize, a year in prison implies confinement costs of roughly \$20,000 and total social costs of about \$25,000.

## The costs of releases

Because this report is concerned with incremental changes in prison capacity, the analysis focuses on the release of borderline offenders—those offenders who would have gone to prison had space been available. The social cost of an imprisonment decision—about \$25,000 per year—must be weighed against the social cost incurred by releasing these offenders. If that cost exceeds the cost of a year's confinement, then additional prison capacity is warranted. Conversely, if released offenders cause relatively little social harm, then planned expansions should be curtailed.

Release costs can be approximated, albeit crudely, by estimating the number of crimes per year an offender is likely to commit if released and multiplying that number by an estimate of the average social cost of a crime. Estimates of these two figures are developed here, despite the substantial imprecision of the results. Even though it is virtually meaningless to say that "the average criminal in the United States commits Q crimes per year" or that "the average American crime costs X dollars," the numbers help focus

attention on important issues. The number of crimes averted by imprisonment and the costs associated with crime are critical determinants of how much prison space we should have.

## Annual offender rates

Judges are not omniscient, nor do they sentence offenders to prison solely on the basis of criminality. Still, knowing something about the criminality of current inmates helps us assess the criminality of the borderline offenders who are released because of space limitations. On average, we would expect those released to be somewhat less criminal than those incarcerated. Our abilities to predict criminality are so limited, however, that many releasees are likely to be more criminal than some who are imprisoned.

The annual offender rates presented here came from a National Institute-sponsored survey of 2,190 inmates confined in jails and prisons in California, Michigan, and Texas. The survey was conducted by the Rand Corporation, and substantial efforts were made to validate the inmates' responses. Besides external checks of arrest and conviction records, the survey itself contained internal consistency checks that gave respondents opportunities to make contradictory statements. After discarding responses that failed consistency checks, the study estimated the annual offense rates shown in Table 1.

The table represents a *composite* of offenders rather than a *typical* offender in these State confinement systems. Individual offenders appear in each of the crime categories where they were active. When summed across appro-

priate categories, the study found that inmates averaged between 187 and 287 crimes per year exclusive of drug deals. (The high and low estimates of the average resulted from applying two different consistency standards to classify unreliable responses.)

Estimates so large shake our conventional beliefs about offenders until we look closely at the underlying statistics. The offense rates reported by inmates formed a highly skewed distribution with rates ranging between one and more than 1,000 offenses per year. Half of the population committed fewer than 15 crimes per year; yet 25 percent committed more than 135 crimes per year and 10 percent committed more than 600 crimes annually.

The averages found reflect the fact that the criminal justice system incarcerates a wide range of low-rate and high-rate offenders.

## The cost of a crime

The final estimate needed to complete the cost-benefit analysis of imprisonment is the cost of a crime to society. It is the most troubling element in the exercise, partly because of the measurement problems and partly because of the difficulty in relating expenditures on crime to potential crime savings. The number obtained resulted from a review of literature on costs of crime.

Every published expenditure on crime that could be found was converted to 1983 dollars. The sum accumulated was \$99.8 billion. Victimitizations from the National Crime Survey were adjusted to account for victimizations of

**Table 1**  
**Inmate annual offense rates**  
(*Varieties of Criminal Behavior*, Rand Corporation, 1982)

Crime Committed	Prisons			Jails	
	California	Michigan	Texas	California	Michigan
Robbery	50	35	12	33	25
Burglary	102	115	46	85	102
Assault	8	4	3	6	6
M. veh. theft	30	118	31	19	94
Misc. theft	222	88	166	221	165
Forgery	78	135	40	123	111
Fraud	151	47	110	264	100
Drug deals	1,318	1,378	718	1,352	1,009

commercial firms and other office buildings. The adjusted victimizations reached 42.5 million crimes annually. Dollars were then divided by crimes, resulting in a figure of \$2,300 per crime. Details of the computations are displayed in Table 2.

Despite the inherent inaccuracies in the estimation, does \$2,300 per crime seem plausible? It undoubtedly overestimates the value citizens place on petty larcenies and underestimates the costs incurred in rapes, homicides, and serious assaults. Some overestimation occurs because not all criminal justice expenditures are crime-related. On the other hand, many household expenditures for items like fences and outdoor lights are uncoun- ted, and no accounting is made of indirect costs like wage premiums paid to workers in high crime areas or unemployment and welfare expenditures created by the evacuation of businesses from high crime neighborhoods.

By combining crime costs and offense rates, we find that a typical inmate in the survey (committing 187 crimes per year) is responsible for \$430,000 in crime costs. Sentencing 1,000 more offenders (similar to current inmates) to prison would obligate correctional systems to an additional \$25 million per year. About 187,000 felonies would be averted through incapacitation of these offenders. *These crimes represent about \$430 million in social costs.*

The conclusion holds even if there are large errors in the estimates: Doubling the annual cost of confinement, halving the average crimes per offender, and halving the average cost per crime would indicate that \$50 million in confinement investments would avert \$107 million in social costs.

## Deterrence

Substantial crime savings may also be created through deterrence. The key instruments of deterrence are the certainty and severity of punishment. Deterrence saves crimes when potential offenders, considering the risks and severity of punishment, decide to commit fewer crimes. Logically, the number of people willing to commit crimes decreases as the danger of punishment increases.

**Table 2**  
**Social costs of crime**

Crimes—1983* (Millions)		Expenditures—1983* (\$ billions)	
Violence	5.0	Firearms	0.3
Robbery	1.4	Guard dogs	4.2
Burglary	7.5	Victim losses	35.4
Larceny	27.4	Criminal justice	33.8
Theft	1.2	Commercial security	26.1
Total	42.5	Total	99.8

(Missing: Homicides, white collar, underground economy)

(Missing: Residential security, opportunity costs, indirect costs)

\* Personal and household victimizations are reported in *Criminal Victimization 1983* (Bureau of Justice Statistics, 1984). Commercial victimizations were estimated by applying the 1976 (last-reported) National Crime Survey estimates to more current victimization and crime report statistics. Commercial robberies were 25 percent of personal robberies ( $0.25 \times 1.1$  million = 0.3 million); burglaries were 23 percent of (6.1 million) household burglaries = 1.4 million. Commercial larcenies were estimated at 13.7 percent of those reported to the FBI in 1983. Total larceny victimizations  $X = 23,637,000 + 0.137X$ ; thus  $X = 27.4$  million.

\*\* Source for firearms estimate: Cambridge Reports, Inc., in *An Analysis of Public Attitudes Toward Handgun Control* (Cambridge, Mass., 1978), found that 25 percent of all households owned at least one handgun. Some 20 percent of owners said guns were purchased for protection. Gun costs estimated at \$75 per year for 5 percent of 83.1 million households.

Sources for watchdog estimates: The 1976 National Election Study, G. Gerber et al., *Violence Profile No. 9, Trends in Network Drama and Viewer*

*Conceptions of Social Reality 1967-1977* (Philadelphia, University of Pennsylvania, 1978) found 10 percent of households said they bought dogs for protection. Costs estimated at \$500 per year for food, housing, and health care for 10 percent of 83.1 million households.

Victim losses estimated at \$10.9 billion for property and medical in 1981 in *The Economic Cost of Crime to Victims: Special Report* (Bureau of Justice Statistics, 1984). Commercial losses taken from American Management Association (1975) study cited in W. Cunningham and T.H. Taylor, *Crime and Protection in America*; final report to the National Institute of Justice, grant number 80-IJ-CX-0080. All costs inflated by consumer price index to 1983 dollars.

Sources for criminal justice expenditures: Preliminary estimates for total system expenditure in 1981 from U.S. Department of Commerce, Bureau of the Census.

Commercial security expenditures estimated at \$21.7 billion in 1980 dollars by Cunningham and Taylor, cited above.

Researchers, in attempting to assess the savings generated by increases in certainty and severity, have used a variety of indicators. The most commonly used indicator has been the probability of arrest (arrests divided by comparable crimes), largely because of the availability of reasonably comparable arrest information across the United States.

Other indicators studied include the probability of conviction (convictions divided by crimes or arrests) and the probability of imprisonment (admissions or inmates divided by crimes). Severity has typically been measured by the average time served in prison for a specified class of crimes. National trends in imprisonment risk are shown in relation to crime trends in Figure 2.

Estimates of the savings attributable to punishment risk have varied with the data used and the crimes and sanctions studied. Isaac Ehrlich, using State-

aggregated data from 1960, estimated that a 1-percent increase in imprisonment risk (prisoners per crime) would produce a 1-percent decrease in crimes per capita. Kenneth Wolpin, using a time series of punishments and crime rates in England and Wales, estimated that a 1-percent increase in imprisonment produced a 0.8-percent decrease in crime rates. If his estimates were valid for the United States today, an increase of 5,000 imprisonments in 1985 would translate into 104,000 serious crimes saved.

Wolpin also separated these savings into those created by deterrence and those created by incapacitation through imprisonment. He estimated that slightly more than half the savings were created by deterrence for both property and violent crimes.

Other studies suggest that the deterrent component is even larger. Jacqueline Cohen's review of incapacitation re-

search uncovered a range of 2 to 25 percent estimated for incapacitation's share.

Daniel Nagin and Alfred Blumstein estimated that if the sentencing policies (in terms of risks and severity of punishment) in effect in 1970 had been changed from a 25-percent chance of prison upon conviction of a serious crime to 100 percent, and prison terms had been reduced from 2.6 years on average to 1 year, then crime rates would have been reduced by 25 percent while prison populations would have risen by 25,000 inmates.

## Policy implications

Focusing only on the appealing concept of preventing crime through incapacitation underestimates the benefits of imprisonment.

The implications of this analysis are that increasing prison capacity is likely to save communities money by averting a variety of costs imposed by crime.

Since estimates of social costs were based on money spent and not costs avoided, what actual savings would be realized is open to speculation. Some savings of victim losses would surely result. Costs incurred by victims of violence are difficult to express in dollars, and even so-called property crimes have their psychological elements.

The property loss aspects of crimes are reported by the Federal Bureau of Investigation every year, however. The FBI estimated that the average loss per robbery in 1985 was \$628. An average burglary cost the victim \$953 and a simple larceny netted \$393 on average. These estimates ignore the prevention and enforcement expenses identified earlier in this article.

One can envision other kinds of savings from declining crime rates. Household-ers and businessmen could divert some money from protection of goods to the purchase and production of more goods. Fewer buildings would be abandoned because of crime risks, and property values would rise. Naroff, Hellman, and Skinner, for example, estimated that a 3-percent decline in crime rates in the Boston metropolitan area would increase property values by 5 percent. Inner-city businesses would enjoy lower operating expenses due to reduced incidence of theft.

Mass transportation would be safer and more popular. William Greer estimated that New York City's crime increase from 1978 to 1982 induced 150,000 households to take taxis for local transportation rather than buses or subways. Even if the criminal justice system failed to reduce personnel by a single employee, citizens would enjoy more frequent police patrols, more rapid emergency responses, and speedier access to the courts.

## Certainty and severity tradeoffs

Whether a State decides to expand its prison capacity or not, its sentencing policies implicitly decide how its prison space will be utilized by setting the terms of confinement for each kind of offense. This utilization pattern, combined with crime rates, determines the certainty of punishment, which in turn influences the level of crime savings obtained by the policies.

It is difficult to suggest how prison space should be used to maximize these savings, but it is likely that policies that favor long prison terms will produce different savings than policies that favor shorter terms but greater certainty of imprisonment. The deterrence literature suggests that increasing the risk of imprisonment has fairly powerful deterrent effects; the evidence on increasing sentence lengths is more ambiguous.

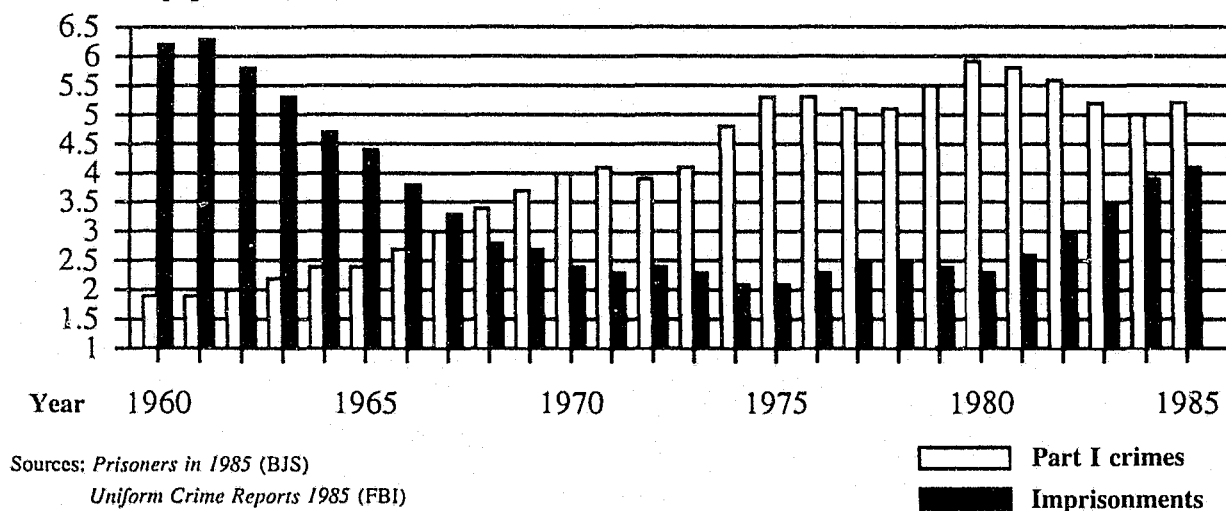
A deterrence-oriented policy would therefore try to increase the number of offenders sent to prison. Incapacitation policy, on the other hand, would try to maximize the number of crimes saved by those in confinement. It would try to send the most frequent offenders to prison for long periods of time.

The contrast can be illustrated by considering how each policy would allocate 1,000 bed spaces. A deterrence

Figure 2

Crime rates and prison risks: 1960-1985

Crimes/100 population; inmates/100 crimes





policy might increase the risk of imprisonment per crime and sentence 1,000 offenders to prison for 1 year. An incapacitation policy might increase the punishment per offender and sentence 200 offenders a year to prison for 5 years.

Both would fill the spaces available over a 5-year period. The deterrence policy would turn over the prison population annually while the incapacitation policy would take 5 years to discharge a cohort.

The effectiveness of a deterrence-oriented imprisonment policy depends on how vigorously would-be offenders react to increased risks and whether some new offenders such as juveniles will stay out of crime. The effectiveness of an incapacitation policy depends on the system's ability to identify the most frequent offenders and on the amount of deterrence lost by concentrating on frequent offenders.

If the system is weak at identifying frequent offenders and actually imprisons a random mix of frequent and infrequent offenders, then the inmate population under an incapacitation policy will resemble the population imprisoned under a deterrence policy. It will save no more crime through incapacitation and lose the crimes prevented through increased imprisonment risk under the deterrence policy.

Phillip Cook demonstrates that even if the system identifies and imprisons frequent offenders, it may still promote more crimes by reducing imprisonment risks than it gains from incapacitation.

## Summary

This report has presented research findings pertinent to the question of how much prison capacity is needed in the United States today. Rather than rely on traditional but difficult to quantify desiderata of punishment such as retribution and justice, a cost-benefit perspective was used to investigate whether society spends more money punishing than it gains from punishment.

Existing data are adequate only for a crude answer to that question. Yet, the results overwhelmingly support the case for more prison capacity. Incapacitating prison-eligible offenders now crowded out by today's space constraints would likely cost communities less than they now pay in social damages and prevention.

Several factors contribute to this assessment. Prison construction costs, when amortized into a component of annual confinement costs, are small relative to general custodial costs. The criminality of today's typical inmate is surprisingly high according to Institute-sponsored research, so large numbers of crimes are averted by imprisonment. The average expenditure per crime in the United States is also quite large, so even a few crimes per year represent an important drain of society's resources from more productive uses.

## References

A. Blumstein, J. Cohen, and D. Nagin. *Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates*. Washington, National Academy of Sciences, 1978.

Jan Chaiken and Marcia Chaiken. *Varieties of Criminal Behavior*. Santa Monica, The Rand Corporation (R-2814-NIJ), 1982.

Jacqueline Cohen. "The incapacitative effect of imprisonment: A critical review of the literature." In Blumstein, Cohen, and Nagin, eds. *Deterrence and Incapacitation* . . . : 187-243.

Phillip J. Cook. "Criminal incapacitation effects considered in an adaptive choice framework." In D.B. Cornish and R.V. Clarke, eds., *The Reasoning Criminal*. New York, Springer-Verlag, 1986: 202-216.

Isaac Ehrlich. "Participation in illegitimate activities: A theoretical and empirical investigation." *Journal of Political Economy*, May/June 1973: 531-567.

William W. Greer. "What is the cost of rising crime?" *New York Affairs*, January 1984: 6-16.

Clark R. Larsen. *Costs of Incarceration and Alternatives*. Phoenix, Arizona State University Center for the Study of Justice, May 1983.

Daniel Nagin and Alfred Blumstein. "On the optimum side of incarceration for crime control." *Operations Research* 26 (May 1978): 381-405.

J. Naroff, D. Hellman, and D. Skinner. "Estimates of the impact of crime on property values." *Growth and Change*, October 1980: 24-30.

Kenneth L. Wolpin. "An Economic Analysis of Crime and Punishment in England and Wales, 1894-1967." *Journal of Political Economy*, October 1978: 815-839.

*Prisoners in 1985*. U.S. Department of Justice, Bureau of Justice Statistics *Bulletin*, June 1986.

*Prison Crowding—A Crisis in Corrections*. A report of the Task Force on Criminal Justice Issues of the Policy Committee of the Center for Metropolitan Planning and Research. Baltimore, Johns Hopkins University, December 1984.

*Federal, District of Columbia, and State Future Prison and Correctional Institution Populations and Capacities*. Washington, U.S. General Accounting Office (GAO/GCD-84-56). February 27, 1984: 30.

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