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Economical Crime Control

Philip J. Cook and Jens Ludwig

Introduction

During the early 1990s, Americans reported to pollsters that crime was far and away the number one problem facing the country.¹ The remarkable drop in crime that we have experienced since then has substantially improved our standard of living. It has allowed residents to reclaim public spaces, helped reverse the long-term loss of population in many central cities, and enhanced property values and the tax base available to address other public problems. The reduction in robbery, rape, assault, and murder has generated social benefits valued in the tens of billions of dollars. Because crime, particularly violent crime, disproportionately victimizes residents of disadvantaged communities, the drop in violence has been progressive in its effects, and has helped remediate this source of disparity in health and longevity. (Homicide remains the leading cause of death for black males twenty to thirty-four, with a victimization rate fifteen times as high as for white males in this age

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1. In a 1994 Times Mirror survey, 32 percent of the public reported that crime was the “top problem facing the nation;” the next two most frequently mentioned problems were health care (14 percent) and unemployment (13 percent). See Kohut et al. (1994).

group.)² Looking to the future, the challenge is to preserve and extend these gains. Crime deserves priority among the litany of social ills, both for the magnitude and the distribution of its costly impact.

So saying, it is also true that crime *control* is a costly enterprise. Criminal justice expenditures more than doubled since the early 1980s, even after adjusting for population growth and inflation. The growth in the prison and jail population has been particularly costly. The United States currently incarcerates about 2.3 million individuals, 1 percent of all adults. The *per capita* incarceration rate has increased by a factor of five since the early 1970s, and has reached levels that have no precedent in American history. In his seminal article on crime and punishment, Gary Becker (1968) observed that the social cost of crime is the sum of the direct costs of victimization and the costs of control. By that definition, the crime “problem” may have been growing despite the crime drop of the last two decades. The costs of control include not just the public expenditures, but also the pains of imprisonment to the prisoners themselves. The preponderance of the incarcerated population consists of youthful minority males from disadvantaged neighborhoods.

The Great Recession has led to cuts in criminal justice expenditures, and the trend in imprisonment appears to have finally turned the corner. That raises the question of whether the crime drop can be sustained. State and local revenue shortfalls have engendered intense interest in cost-cutting measures that do not sacrifice public safety.³ We believe there is reason for optimism, simply because current criminal justice allocations and policies appear to be inefficient—more crime control could be accomplished with fewer resources. Of course, efficiency is not the only goal of public policy, and other values also play a role. For example, public support for long prison sentences may stem in part from a willingness to pay for retribution against those who have violated society’s norms, regardless of the effect on crime (if any). But it is important to at least understand the tradeoff between retribution and crime prevention. In any event, one way to reduce the demand for retribution is to reduce the amount of crime.

What would a more efficient crime-control strategy look like? The crime problem is often framed as a debate between those who favor a “tough” punitive approach, versus those who favor a “soft” approach that focuses on prevention or remediation programs to improve legitimate opportunities

2. Because homicide victims tend to be young, nearly as many years of potential life are lost among black males from murder as from the nation’s leading killer, heart disease.

3. The Center on Budget and Policy Priorities projects the cumulative shortfall for 2011 in state budgets nationwide to be on the order of \$140 billion (Williams et al. 2010). The Pew Center on the States, working with the Council of State Governments Justice Center and Vera Institute of Justice has, since 2006, consulted with a number of state governments to find ways to reduce incarceration rates while preserving public safety.

for those at risk. But the canonical economic model of crime from Becker (1968) suggests that the decision to commit crime involves a weighing of both benefits and costs. This model suggests the logical possibility that both tough and soft approaches might be useful in reducing crime. It is ultimately an empirical question about where the marginal dollar can be spent most effectively. The goal is to find the diverse “golden portfolio” that is broadly responsive to the multifaceted nature of crime, and which takes account of the likelihood of diminishing returns to any one approach.

Rather than thinking in terms of tough versus soft, we find it more useful to categorize crime-control strategies by whether they seek to change the environment that determines the opportunities for crime (whether crime “pays”), or instead try to change individual propensities toward criminal behavior through investments in education, child development, drug treatment, and so forth. This distinction between criminal opportunity and criminal propensity helps move us toward a more pragmatic rather than ideological discussion about how best to control crime, and also makes clear that tough and soft approaches may sometimes be complementary. For example, in the 1990s, Boston’s Operation Ceasefire combined a tough deterrence strategy directed at gang members with church-based community programs to help gang members who wanted to reform. The combination of enhancing both the threat of punishment and legitimate opportunities helped strengthen the deterrent effect, while also helping garner valuable community support for the program (Kennedy, Piehl, and Braga 1996). Similarly, some soft social programs can involve elements of coercion, like compulsory schooling laws or higher alcohol taxes.

The quest for a golden portfolio of crime-control measures reflects the economics orientation of the majority of the book’s authors. This perspective represents one contribution of our volume to crime policy analysis. For example, much of the academic and public debate has been about whether America’s prison boom has reduced crime. But within an economics framework, the question of whether (and by how much) imprisonment reduces crime is not well specified. Since prison consumes resources that could have been spent on other activities, a better question is whether imprisonment reduces crime by *more than* it would have been reduced by alternative crime-control uses of the same resources.

This attention to clearly specified counterfactuals—“compared to what?”—is also characteristic of this volume’s approach to empirical evidence as well. Popular discussions of the value of different crime control strategies often focus on whether crime rates are higher or lower this year compared to the previous year, even though crime rates change over time for a large number of reasons—only some of which are understood, much less under the control of government officials. Analysts have difficulty identifying the causal effects of government interventions on crime, in part because crime is

both cause and consequence of criminal justice policies and budgets. Police are concentrated in areas with high crime rates for the same reason that people in doctor's offices are more likely to be sick compared to the general population. Economists have been among the most enthusiastic converts to the design-based approach to empirical research, which focuses on the use of randomized and natural experiments to overcome challenges to causal inference (see, for example, Angrist and Pischke 2009, 2010).

In terms of substantive conclusions, the findings summarized here suggest that the push for longer prison sentences over the last three decades is likely to have sharply diminishing returns. More cost-effective uses of those resources are readily identifiable, even within the criminal justice system: for example, by putting more police on the street, or improving the capacity of the courts to deliver swift, certain, and mild punishments for drug use by convicts on supervised release. The implication is that the inefficiency with our current criminal justice system arises not necessarily because the system is too punitive, but rather because it focuses too much on meting out severe rather than certain punishments.

The private sector also has an underappreciated role to play in reducing crime. Much of the stunning decline in motor vehicle thefts and burglaries since the 1980s is due to changes in private precautions, enhanced by technological improvements in vehicle locks, electronic tracking devices, alarm systems, and means of payment. The number of private security employees exceeds the number of public law enforcement officers and has been growing faster, trends that are surely relevant to the crime drop. Private security protects whole neighborhoods in business improvement districts, and in that arena generates benefits to society far in excess of costs. Private actions could be encouraged through changes in insurance regulation and other reforms. Regulation of private consumption of intoxicants is also relevant. While the net effects of changing regulations of illegal drugs are difficult to predict, we are confident in predicting that increases in the price of alcohol (such as through taxation) would reduce crime.

The chapters in this volume also dispel some of the pessimism that lingers from the 1960s and 1970s about the ability of social policy to prevent or remediate criminality. The available evidence suggests that giving people money and jobs is not as cost-effective in reducing crime as investing in human capital. Our improved understanding of human development suggests academic and mental health interventions may be most productive when delivered relatively earlier in life, while "social-cognitive skills" (in Ken Dodge's terms) are amenable to intervention even among the highest-risk, criminally involved adolescents and adults. Most of the social programs that help prevent criminal behavior are carried out by agencies outside of criminal justice, and so controlling crime is incidental to their main purpose. But ignoring effects on crime may lead to substantial underinvestment in these programs.

The next section documents the growth in America's incarceration rate and overall criminal justice expenditures, which provides the context for the remainder of this chapter (and the volume as a whole). The third section then sketches a conceptual framework for understanding crime in terms of criminal opportunity and the distribution of criminal propensities. The following sections discuss the evidence on how to change the environment to make criminal opportunities less attractive, and then how to change individual propensities toward antisocial or criminal behavior. The final section provides a summary list of noteworthy interventions, and concludes with a thought experiment about reallocating resources currently expended on imprisonment.

The Growth in Incarceration and Criminal Justice Expenditures

For half a century, from the 1920s through the 1970s, the state and federal prison population hovered around 110 per 100,000 with little variation despite the very large swings in crime rates (see figure I.1). The upward trend in the rate of imprisonment began in the mid 1970s. The number in local jails also increased dramatically during this period, and by 2008 the overall incarceration rate was equal to 753 per 100,000, a total of 2.3 million people. That rate, equal to 1 percent of all adults, is a multiple of the

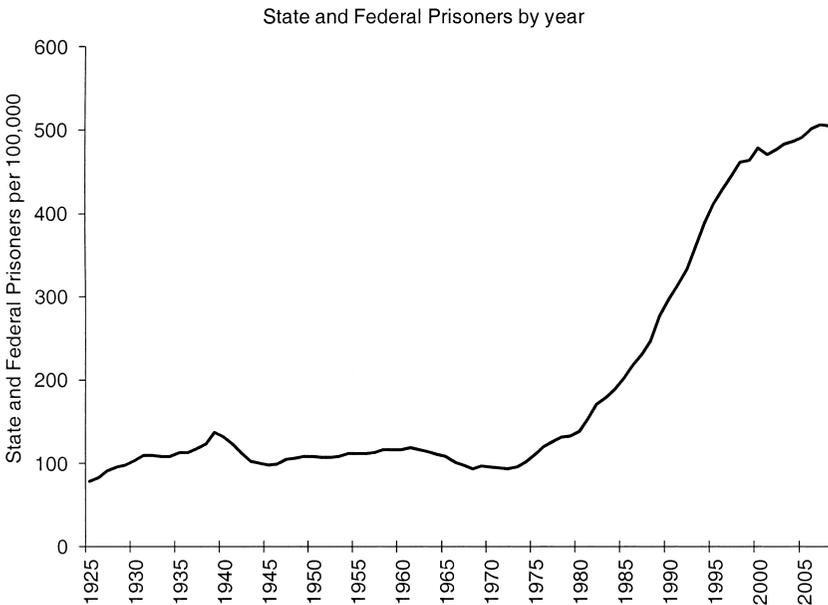


Fig. I.1 History of the imprisonment rate, 1925–2008

Source: www.albany.edu/sourcebook/tost_6/html.

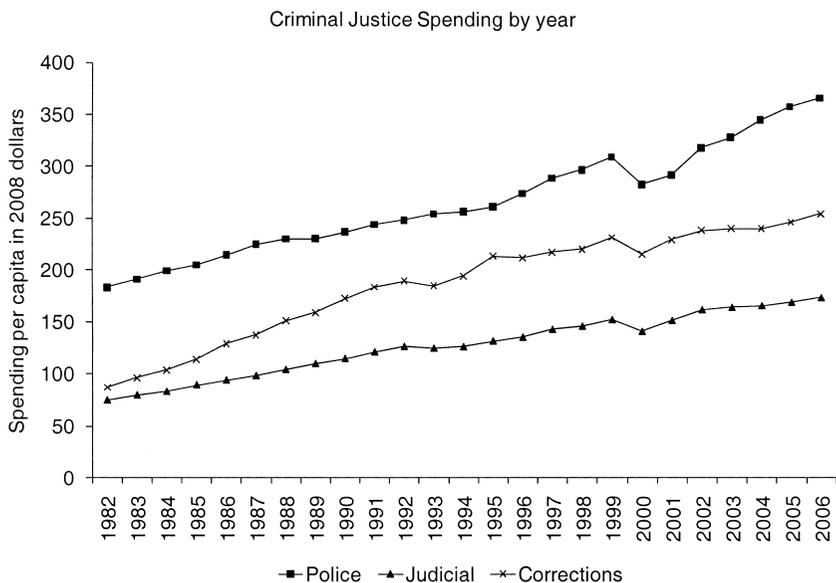


Fig. I.2 Combined local, state, and federal spending per capita in 2008 dollars by area

Source: bjs.ojp.usdoj.gov/content/glance/tables/exptyptab.cfm.

incarceration rates found in other Organization for Economic Co-operation and Development (OECD) nations, and even exceeds the rates found in repressive regimes found in Russia, Cuba, China, and Iran. The direct costs to American taxpayers of locking up so many, and supervising millions of others on conditional release, amounted to \$70 billion in 2006—about \$230 per capita. The increase in spending on corrections has been proportionally larger than police or the courts (figure I.2), although there has been impressive growth in all three areas.

A notable share of the growth in imprisonment, but by no means all, was associated with the war on drugs. The number of state prisoners locked up for drug offenses has increased from 19,000 to over 250,000 since 1980, while the number in federal prisons increased by over 70,000 during this period. (See figures I.3 and I.4.) But the data in figure I.3 make clear that most of the increase in state prisoners comes from greater use of prison for violent crimes.

An interesting decomposition of the growth in the state prison population from 1984 to 2002 was computed by Raphael and Stoll (2009). During this period the prison population almost tripled. Something like 20 percent of this increase derived from a large increase in the parole failure rate (from 13 percent annually in 1980 to 29 percent in 2003), which was apparently due to increasingly punitive policy, rather than a change in behavior of the

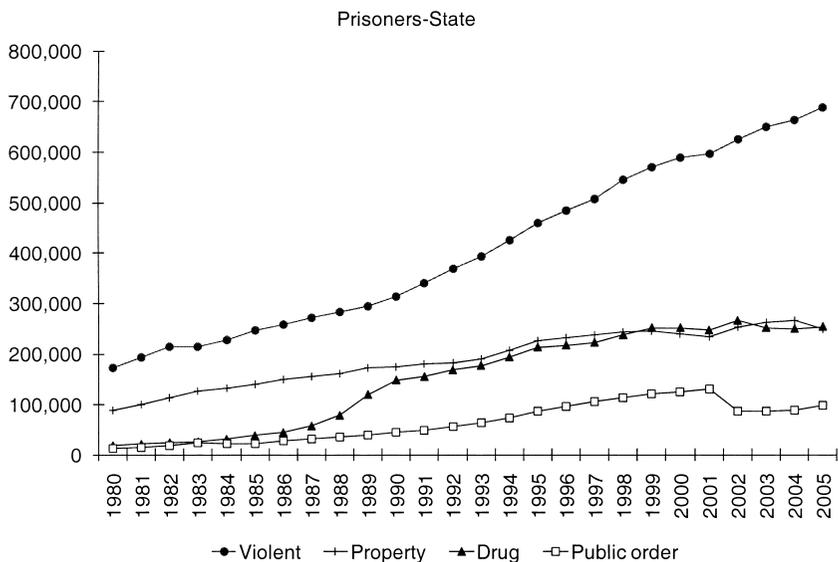


Fig. I.3 History of state prisoners by offense type, 1980–2005

Source: bjs.ojp.usdoj.gov/content/glance/tables/corrtyptab.cfm.

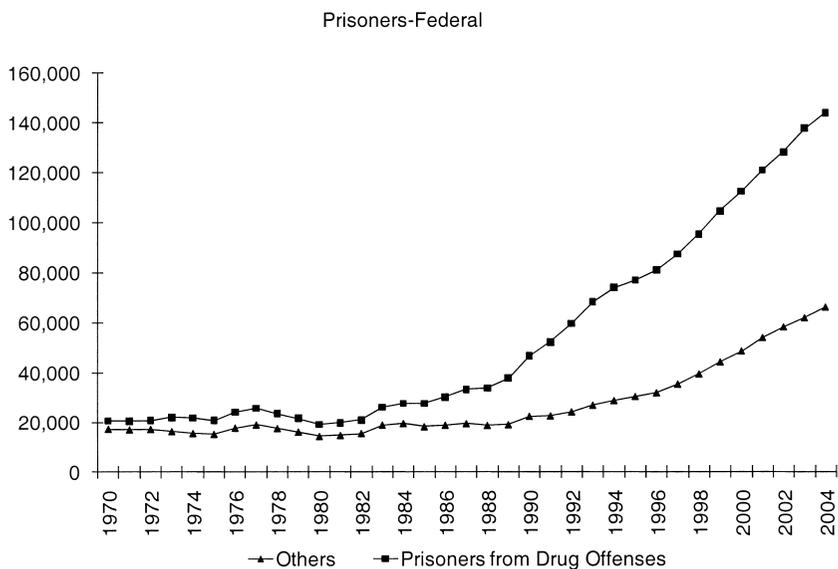


Fig. I.4 History of federal prison population, 1970–2004

Source: www.albany.edu/sourcebook/tost_6/html.

parolees. With respect to the growth in the prison population that was not due to parolee recidivism, 48 percent was due to an increase in the likelihood of imprisonment given crime, and 35 percent to longer time served for a given type of crime. The latter trend is associated with legislated sentence enhancements (including the three strikes laws) and truth in sentencing laws. Interestingly, this increase in prison sentence lengths would be almost invisible if one were to simply compare the average prison sentence length for people incarcerated today versus, say, a quarter century ago—the share of people in prison for relatively minor offenses has been increasing over time, diluting the average sentence length.

Why did America increase its prison population so much over the past three decades? William Spelman (2009) argues that the growth in state budgets is the most important driver of growth in state prison populations. From 1977 to 2005, “prison populations grew at roughly the same rate and during the same periods as spending on education, welfare, health and hospitals, highways, parks, and natural resources” (29). His analysis accurately predicts what we have actually seen, the drop in the prison population during 2009, evidently resulting from the advent of declining state budgets. Yet it is important to note that growth in government revenues is only a proximate explanation, and one that did not apply prior to the 1970s (Raphael 2009). The US incarceration rate held steady from the 1920s to the 1970s, even during large swings in gross domestic product (GDP) and government revenues.

So what exactly is it about the political environment in America during the last generation that has linked increased government revenues to expanded imprisonment? Whatever the underlying political dynamic pushing prison construction and tougher sentencing, it is surely relevant that most of the prisoners are from politically marginal groups (Alexander 2010; Loury 2010). At present around one out of every nine black men ages twenty to thirty-four is in prison (Pew 2008), and high school dropouts in this group are more likely to be in prison than employed (Raphael and Sills 2008). Bruce Western traces imprisonment rates across decades, finding that the percentage of black male dropouts who had served time in prison by age thirty-five increased from 17 percent for those born in the late 1940s, to 59 percent for the late 1960s cohorts and around 70 percent in the late 1970s cohorts (figure I.5). Both the levels and changes over time in lifetime imprisonment risk are much lower for whites.

The vastly disproportionate racial impact of the incarceration surge is one of its most problematic features, but leaves open the question of the overall balance between costs and benefits. How much of the crime drop (which disproportionately benefits minority neighborhoods) is due to the surge in imprisonment?

The evidence on which to reach a conclusion on this vital issue is not as strong as we would like. Widespread skepticism about the benefits of

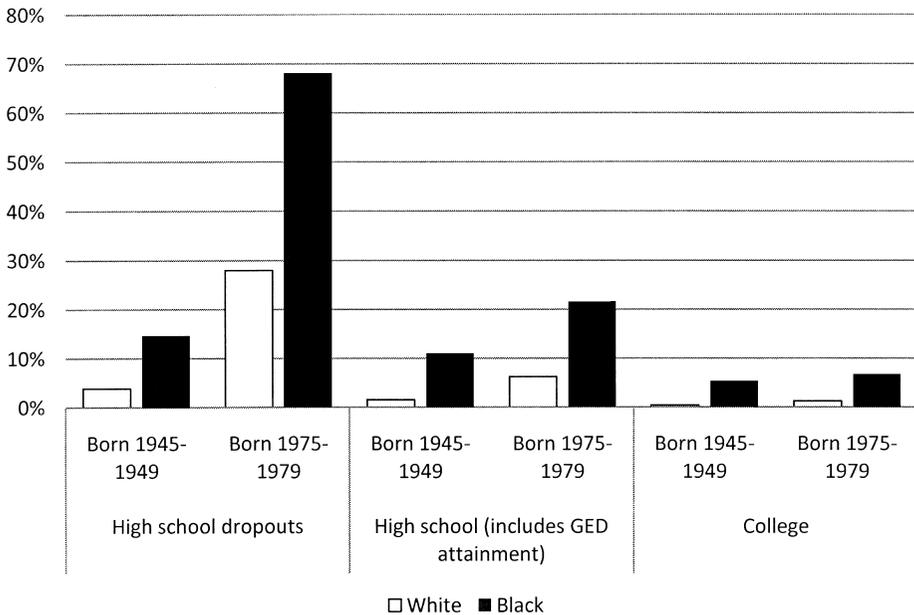


Fig. 1.5 Risk of Imprisonment by Education Level and Race

Source: Western (2006, 27).

mass incarceration stems from the fact that the growth in imprisonment has spanned both periods when crime rates were increasing and declining. But this sort of simple time-series association is a weak basis for drawing inferences about policy impacts. Imagine the plight of governors or mayors who had the misfortune of being in office in the late 1980s, subject to criticism as violence surged in their particular jurisdictions—even though crime rates were increasing almost everywhere in the United States, probably due to the epidemic of crack cocaine.⁴ On the other hand any governor or mayor lucky enough to be in office during the 1990s, when crime rates were dropping almost everywhere across the country, looked like a genius (and indeed many have developed lucrative consulting practices dispensing their own magic potion for crime control).

A more scientific approach to the study of imprisonment and crime still leaves us short of a confident conclusion. There is some persuasive evidence, summarized in the chapter in this volume by Steven Durlauf and Daniel Nagin, that crime choices are sensitive to the probability of punishment. Since the fraction of crimes that resulted in a prison term increased

4. The dominant view among scholars is that the massive surge in youthful homicide and robbery rates that began in the United States in the mid-1980s was due to the invention and spread of crack cocaine (Blumstein 1995; Levitt 2004).

between 1984 and 2002, it is reasonable to conclude that the increased use of imprisonment does get part of the credit for the crime drop—a conclusion supported by the assumption that imprisonment also prevents crime through the incapacitation effect. But what is the counterfactual? If the vast increase in prison expenditures came at the cost of better educational programs, treatment for mental illness or drug abuse, and improvements in policing, then the net effect of the imprisonment boom is not so clear, even qualitatively.

Conceptualizing Crime and Crime Control

Our vision for this volume begins with the view that crime is a complex, multifaceted phenomenon for which the most productive portfolio of responses is likely to be quite diverse. Guidance in imagining that portfolio comes from thinking of observed crime rates as the outcomes of an interaction between potential criminals (which is to say, most everyone), and the environment of opportunities, licit and illicit, for achieving individual goals (Cook 1986). In this account the promising crime-reducing interventions include both those that focus on changing the structure of opportunities, and those that invest in individuals to improve their access to licit opportunities while strengthening their resistance to criminal enticements.

Much of the public conversation about crime often focuses on just one aspect of this framework, the character of the youths. In the simplistic version, the population consists of good guys and bad guys. The bad guys commit crimes and the good guys do not. The crime rate is proportional to the number of bad guys who are at large. Crime control then is a matter of locking up as many bad guys as possible (or, when the bad guys are immigrants, deporting them). Public opinion polls suggest that much of the public believes that offenders are made, not born, and so the number of bad guys can also be reduced through better parenting. In any event, the natural tendency is to seek explanations for crime increases in the character of the youths, and some version of the old refrain of “What’s the matter with kids today?” (Cook 1985; Cook and Laub 1998). This sort of explanation, in more nuanced form, has also been prominent in analyzing the crime drop, where the legalization of abortion in the early 1970s (Donohue and Levitt 2001; Joyce 2009) and the reduction in lead ingestion since it was removed from gasoline (Reyes 2007) are offered as mechanisms that helped produce cohorts of children with lower criminal propensity.

An extreme version of this view had considerable influence during the great epidemic of youth violence that began in 1984 and crested in the early 1990s. The most prominent commentators at the time were William Bennett, John DiIulio, and John Walters (1996), who attributed the extraordinary surge of youth violence to the increase in the number of “superpredators”—youths who had grown up in chaotic neighborhoods with little adult guid-

ance (“moral poverty”) and became remorselessly violent and incorrigible criminals. The Bennett-DiIulio-Walters explanation for the tripling of youth homicide rates was simply that there were that many more killers in our midst: more criminals, more crime. That account helped persuade legislatures in most states to facilitate waiver of juveniles to adult court, and provided support for tougher sentencing across the board.

The superpredator explanation was plausible, but wrong. A careful study of homicide patterns during that period has documented that a ten-year span of birth cohorts were caught up in the epidemic simultaneously, and that their involvement also subsided together—demonstrating that the dominant effect of the era was not the deteriorating character of the youths who were coming of age during that period, but rather the changing circumstances in which at-risk youths found themselves (Cook and Laub 1998, 2002).

A number of commentators have since documented the likely source of those changing circumstances—the advent of the crack cocaine era, which engendered gang violence in contests for control of street markets, and recruited many minority teens into drug dealing while arming them with guns. The resulting violence may have overwhelmed the resources of the police and courts in many cities, further aggravating the problem. Crime rates among groups who were on the front lines of the epidemic were extraordinarily volatile—young black men in the District of Columbia experienced a ten-fold increase in their homicide victimization rate during the epidemic increase, and a few years after the peak the rate was back near the pre-epidemic level (Cook and Laub 1998). We can only conclude that the particular mix of youths in a community does not come close to determining the crime rate.

What is missing from the “good guys, bad guys” account of crime is that crime is a choice, and as such is influenced by incentives as well as character. Indeed, the theory of crime developed by economists begins where the character analysis leaves off, and focuses on how incentives influence crime-related choices for someone of given character (or, as economists would say, preferences). The simplistic notion that crime is proportional to the number of criminals provides no more illumination than asserting that farm output is proportional to the number of farmers. Just how many farmers are active, and how much they produce, depends on incentives mediated by the relevant input and product markets. Similarly, the incentives to engage in crime relate to the perceived payoff to crime, the opportunity cost of time spent doing crime, and the risks associated with crime—including inherent risks (gang warfare, victim retaliation) and the risk of punishment. Those incentives depend on individual circumstances and are subject to change with changes in criminal and licit opportunities.

The idea that potential criminals respond to incentives has been met with some skepticism by criminologists, who point out that potential criminals

are rarely well informed about the prevailing penalties for different crimes, and that many crimes are committed by people who are not thinking clearly because they are (for example) surrounded by their peers, drunk, high, or sexually aroused. But the fact that a large number of individual crimes are committed without much regard for the consequences does not invalidate the idea that the total number of criminal acts varies with respect to the benefits and costs of crime. Many people seem to pay little attention or have limited information about the sales tax on consumer goods (for example, see Chetty, Looney, and Kroft 2009), yet typically an increase in the tax rate for some good tends to depress the quantity of the good that is purchased. In order for a change in incentives to change the aggregate level of some behavior, it is enough for just a subset of the population to pay attention and adapt their behavior.

In short, by focusing on crimes as choices made in response to the available options and individual circumstances, the economists' framework provides guidance in understanding trends and patterns, and also in identifying some of the interventions that are likely to be effective in reducing crime. The relevant interventions go well beyond expanding enforcement efforts, although law enforcement is a vital part of the mix. The proximate goal can be loosely expressed as taking the profit out of crime, which invites discussions on such topics as how to incentivize installation and use of better locks and alarms, how to shrink illicit markets for drugs or stolen property, and how best to provide at-risk youths with attractive licit opportunities. A variety of actors play a role in influencing opportunities for crime. Indeed, much of the relevant action is private, as exemplified by the story of motor vehicle theft, as told in the chapter by Philip Cook and John MacDonald. The fact that fewer vehicles were stolen in 2008 than 1980, despite the doubling in the number of vehicles on the road, is at least partly the result of the great improvement in locking devices built into modern vehicles—a car equipped with an electronic immobilizer, which most new cars are, is essentially impossible to steal without either the key or a tow truck. And owners who choose to equip their vehicles with an electronic tracking device like LoJack or OnStar greatly enhance the ability of the police to track them if stolen and arrest the thief or a chop shop owner.

For violent crime it is useful to understand that criminal opportunity is influenced by social context. Youths typically commit their crimes in groups, and organized criminal gangs are contributors to crime and violence in some cities. Addressing the interactions and social consequences that induce criminal violence provides a richer menu of possible interventions. For example, Boston's Operation Ceasefire of the 1990s sought to create a group deterrent to gun misuse by threatening the entire gang with negative consequences for gun misuse by any member (Kennedy, Piehl, and Braga 1996; Kennedy 2009). Street mediation of violent conflicts has been an important element of a number of interventions, including the Crisis Intervention Network

implemented in Philadelphia in the 1970s, the Chicago Crisis Intervention Services Project that Irving Spergel implemented in the 1980s, and the more recent Chicago Ceasefire project developed by Gary Slutkin (Spergel 1986; Skogan et al. 2009).

Curtailling criminal opportunity is an important goal for much of the crime-control portfolio of interventions, but not the whole story. The choice to commit crimes also reflects the opportunity cost of crime involvement, which is to say the quality of licit opportunities, as well as personal qualities encapsulated in the term “personality.” The notion that some youths enter adolescence with a greater propensity to crime than others takes us back to the focus on character, but with this proviso—in the economists’ account, character is not destiny, and does not in itself determine crime involvement. In any event, making well-directed investments in child development, and in skill building at all ages, can shape character and be part of the crime-control portfolio. There are a variety of interventions that may help direct individuals away from a crime trajectory, starting at birth or even before. A common feature of these efforts is that to a greater or lesser extent, these programs supplement and support the traditional role of the family in providing for children and instilling human and social capital. And the possibility of preempting or derailing criminal careers through investing in individuals at risk does not end with childhood. Intervention opportunities continue for adults who are deemed likely to be attracted to crime due to mental illness, drug dependence, lack of marketable skills, criminal associates, or other reasons.

In sum, given our understanding of crime as a choice that reflects both individual propensities and incentives—both of which are malleable—there is a broad spectrum of policies and programs that can contribute to the goal of reducing crime rates without expanding the prison population. The list of alternatives begins with more effective allocation of prison (as both a threat and an incapacitation device), and goes on to include alternative punishments; situational crime prevention and better mobilization of private inputs; stronger regulation of criminogenic commodities, especially alcohol and guns; more investment in treatment for drug addiction, mental illness, and conduct disordered youths; programs intended to improve job opportunities for released offenders; family, education, housing, and income maintenance programs intended to assist parents in the task of raising children who are productive members of the community. This rich menu of possibilities needs to be evaluated carefully. Viewed from the perspective of cost-effective crime control, some of these options are more promising than others.

Changing the Offending Environment

The most obvious way policymakers can change the incentives people face for criminal behavior is by changing the way that the criminal justice system

works. But this is not the only way. Policymakers can also change the social environment, for example, by changing the opportunities that people have to get income by legal means or the control of illicit drugs.

Efficient Sanctioning

From the crime-control viewpoint, the most important role of the criminal justice system (CJS) is to deter criminal activity by generating a credible threat of punishment contingent on crime commission. Since for serious crimes the punishment usually takes the form of incarceration (jail or prison time), the CJS also reduces crime through incapacitation of those who have a relatively high criminal propensity.

As described previously, there has been considerable growth in the resources allocated to police, courts, and corrections at the local, state, and federal levels. There is good reason to believe that the CJS is effective in reducing crime, and also that it is inefficient, in the sense that the same crime-reduction effect could be accomplished with fewer resources if appropriate reforms were adopted. Of particular interest here is the possibility of economizing on the use of prison and jail.

The usual economic model of criminal choice, such as the one proposed by Steven Durlauf and Daniel Nagin in their chapter, concludes that the crime rate is inversely related both to the probability and the severity of punishment. Various refinements of the theory, in addition to a good deal of empirical evidence, suggest that the deterrent effect with respect to a unit increase in severity declines as severity increases, but not so with respect to probability. Moreover, if there is a fixed cost to arrest and conviction (possibly including pretrial jail time or bail payments, legal costs, as well as damage to reputation), then the formal sentence following conviction is only one component of the overall negative consequence of arrest. For that reason we would expect some deterrent even if the formal punishment were zero.

The threat of a prison term deters crime, but time served in prison further reduces crime through the incapacitation effect. The simple notion here is that offenders who are locked up or otherwise incapacitated are unable to commit crimes—at least crimes against victims on the “outside.” The size of the incapacitation effect depends on how criminally active the offender would have been if left at large. Here too there is reason to believe that the marginal effect declines with longer prison terms, since criminal careers tend to be quite short. It is likely that many prisoners serving long terms have reached what Alfred Blumstein has called the point of redemption, when their crime rate if free would be no higher than age peers who had never been convicted (Blumstein and Nakamura 2009).

While the incapacitation effect is easy to grasp, it is not the same as the net reduction in crime stemming from locking up a particular individual. If the offender is a drug dealer, it is quite possible that another will step in

to take his place, with little net effect on drug related crime. Replacement may also be found in other gang- and group-oriented crimes. It is also true that most prisoners are released eventually, and the net effect of the prison term on the crime rate depends on the effect of the prison experience and its consequences for the postrelease behavior of the offender. The evidence on this issue is mixed at best.

These ideas suggest a number of ways in which the criminal justice system might be made more efficient.

Focus on Punishment Certainty, Not Severity

The relevance of the declining returns to punishment severity to the use of prison and jail is clear. Consider two sentencing regimes. In regime A, there is a 1 percent chance of a ten-year sentence for robbery, while in regime B there is a 10 percent chance of a one-year sentence. If there are the same number of robberies in the two regimes, then in a steady state there will end up being the same number of robbers in prison. But the theory and evidence both suggest that regime B will have a greater deterrent than regime A. The result: more robberies in regime A, and paradoxically, a larger prison population.

A confirmation of this view in one arena comes from the evidence on coerced abstinence. A randomized field trial in Honolulu, Hawaii's Opportunity Probation with Enforcement (HOPE), reported very strong results from subjecting felony probationers to frequent random drug tests with an immediate (but brief) jail term in the case of failure (Kleiman 2009; Hawken and Kleiman 2009). This experimental group had a far lower arrest rate and revocation rate than the control group, who were less likely to be caught using drugs, but with the possibility of a more severe penalty (probation revocation). The experimental group ended up committing less crime and receiving less total days of incarceration.

Much of the increase in the prison population since 1980 has come from longer sentences, including life sentences with no possibility of parole. For offenders with short time horizons, the deterrent effect from extending prison sentences into old age is likely to be very small, but the cost to the state or federal government is substantial. Durlauf and Nagin suggest the payoff from CJS activities that increase the probability of punishment are likely to have a greater benefit-cost ratio than lengthening already long prison sentences.

The Value of Stepped-Up Policing

Criminologists have long been skeptical about the value of simply putting more police on the street to carry out standard reactive policing practices like random preventative patrol and responding to 911 calls for service. To support this view, criminologists point to the fact that places with relatively more police do not reliably have lower rates of crime (Sherman 2002). Yet

the challenge to drawing valid inferences from this sort of correlational evidence was noted earlier—more crime may lead to more police on the street, potentially masking any crime-reducing benefits from increased police resources.

While the 2004 report of a National Research Council committee on policing was agnostic about whether there is a link between police strength and crime (Skogan and Frydl 2004, 224–5), in our view more recent research provides stronger evidence for a causal connection. Evans and Owens (2007) examine what happened to crime when the US Department of Justice under the Clinton Administration distributed Community Oriented Policing Services (COPS) hiring grants to local police departments, a convincing “natural experiment” that helps overcome the omitted variables concerns that plague most previous studies.⁵ Their results suggest that each additional dollar devoted to police hiring may generate from four dollars to eight dollars in benefits to society (Donohue and Ludwig 2007). *Why* police reduce crime is not entirely clear—whether police deter crime by reducing the availability of attractive criminal opportunities, or simply incapacitate more criminals by making more arrests. Regardless of the underlying mechanism, these findings are important in part because of the feasibility of implementation—it is relatively easy to increase police department budgets and hire more officers. An increased role for federal support for police hiring may be particularly valuable. The federal government (unlike state or local governments) can engage in countercyclical deficit spending to help increase police resources during recessions, when robberies and burglaries tend to increase.

The efficiency of police spending could be enhanced further by changing what police do. Despite the widely perceived success of New York City’s “broken windows” policing efforts, there is no evidence that having police spend more of their time issuing citations or making misdemeanor arrests for minor offenses is an effective way to reduce the prevalence of more serious offenses (Levitt 2004; Harcourt and Ludwig 2006, 2007). On the other hand, a variety of high-quality randomized experiments find that crime can be reduced in targeted areas by explicitly shifting police time and attention from reactive to proactive policing strategies focused on identifying and solving the local crime problems that are of primary policy concern. Focusing police resources on high-crime “hot spots” also has a firm basis in

5. The size of these COPS hiring grants varied across areas in a way that was systematically related to the level of crime in each jurisdiction, but was apparently unrelated to preexisting crime trends. A difference-in-difference comparison finds that increased police hiring (even absent any changes in police practices) causes sizable reductions in crime, with an elasticity of crime with respect to police officers per capita of $-.26$ for property crimes and $-.99$ for violent crimes (see also Levitt 2002). What police actually do to reduce crime remains something of a mystery, since the elasticity of crime with respect to the clearance rate (the ratio of arrests to crimes committed) seems to be relatively low. Thanks to Steve Levitt for helpful conversations on this point.

the evidence (Skogan and Frydl 2004; Braga and Weisburd 2010). Whether these strategies simply displace crime to other areas is more difficult to determine, because policing experiments usually have better statistical power to detect effects on the targeted areas than on the much larger set of areas to which crime might be displaced.⁶ Still, it appears that positive spillovers from focused policing are as likely as negative. But there is also a relevant implementation challenge associated with getting police to change what they do—after all, there is presumably a reason why more police departments are not implementing these strategies more widely or intensively.

Changing law enforcement practices appears to be a particularly promising avenue for reducing one of the most socially costly aspects of America's crime problem—gun violence. Guns greatly increase the lethality of violent crime (Zimring 1968; Cook 1991). The prevalence of guns in the US helps explain why our homicide rate is a multiple of other developed countries, even those that have similar levels of overall violent crime (Zimring and Hawkins 1997). For better or worse, the US Supreme Court has recently struck down local handgun bans and may be moving in the direction of preempting other sorts of local gun regulations, and the national political scene is such that any change in federal gun laws seems unlikely for the foreseeable future.

Against this backdrop, it is encouraging that stepped-up police efforts to get guns off the street seems to generate sizable declines in different measures of illegal gun use (Cohen and Ludwig 2003), although the challenge is to implement these types of “stop-and-frisk” activities in ways that do not exacerbate police-community tensions. Other research has found that the underground gun market seems to have more frictions than commonly thought (Cook et al. 2007). These findings indicate the potential value of enforcement activities like buy-and-bust operations, efforts to debrief arrestees about where they obtained their guns, and rewards for information about illegal gun possession, although good evaluation evidence confirming the value of such strategies is currently lacking (Cook and Ludwig 2006).

Encouraging Private Cooperation with the Criminal Justice System

In their chapter, Cook and MacDonald point out that the effectiveness of police depends very much on the voluntary cooperation of citizens, and encouraging productive cooperation is a key part of the portfolio of crime control. Voluntary cooperation starts with reporting crimes to the police and includes the provision of useful reports and tips during the investigation and, in some cases, testimony at trial. Since these private inputs are typically costly and uncompensated, they are likely to be undersupplied. Cooperation can be encouraged through more generous victim compensation payments (which are contingent on cooperation) and stepped-up efforts to protect

6. Thanks to Justin McCrary for highlighting this point.

witnesses. Also of fundamental importance is to establish a trusting relationship between the police and the community.

Two specific mechanisms to improve cooperation have been carefully evaluated. Ayres and Levitt (1998) found that jurisdictions that were organized to take advantage of LoJack (transmitting devices installed in vehicles that could be switched on remotely if the vehicle was stolen) enjoyed a substantially lower vehicle-theft rate as a result, with a benefit-cost ratio of about twenty. The authors suggest since thieves cannot tell which vehicles have LoJack installed, it has a general deterrent effect—and it helps identify and shut down the chop shops. The second example is Cook and MacDonald's evaluation of crime prevention efforts organized by business improvement districts in Los Angeles. There too the benefit-cost ratio is about twenty. These districts hired private security guards and enjoyed reduced crime rates, presumably because offenders perceived an increased probability of arrest and less attractive criminal opportunities. The crime reduction was coupled with a reduction in the number of arrests, so there were savings to the CJS.

Alternatives to Incarceration

Reducing crime through incapacitation does not require prison and can be accomplished to some extent by restrictions on behavior, perhaps enforced through electronic monitoring and regular check-ins with an agent. Such approaches are far less costly than prison itself and can be coupled with a fine if deterrence is the issue.

The chapter by Anne Piehl and Geoffrey Williams explores the mystery of why courts in fact make so little use of financial penalties for crimes more serious than traffic violations. One problem is that it is difficult to collect a fine from a defendant who has little or no assets. Garnishing their wages may weaken whatever incentive they have to work. More importantly, perhaps, is that courts are typically not well organized to serve as collection agencies, and have been reluctant to do what is necessary in this area. The high costs of collection documented in several studies may reflect inefficient practice or lack of commitment on the part of the courts. A robust program of fine collection requires a real threat of a jail term for failure to pay. It remains an open question whether there is an opportunity to replace some jail terms with fines (as in the traditional sentence of “30 days or 30 dollars”) so as to reduce social costs while preserving the deterrent. In his comment, David Sklansky endorses the Piehl-Williams conclusion that fines should be evaluated relative to the alternative means of punishment, rather than on the basis of whether the revenues exceed the costs of collection. He encourages a broader discussion that brings in other intermediate sanctions, such as those conveyed by the term “restorative justice.”

Jobs and Income Supports

A long-established belief is that crime rates are exacerbated by declines in economic conditions, such as the deindustrialization that occurred in cities

like Chicago starting in the mid-1980s, or more recently the Great Recession that has increased unemployment rates nationwide. The best available empirical evidence suggests that recessions do result in modest increases in burglary and robbery, but homicide appears immune to the business cycle and motor vehicle theft is actually procyclical, presumably because stolen vehicles are worth more during good times than bad (Cook and Zarkin 1985; Raphael and Winter-Ebmer 2001; Bushway, Cook, and Phillips 2010).⁷ In any event, other things being equal (which they are decidedly not during the business cycle) our theory predicts that an improvement in licit opportunities will make crime a less attractive choice.

In practice, efforts to improve the employment prospects of released offenders have met with limited success. Prisoners typically have little work experience or education, and many employers refuse to hire ex-cons or are actually barred from doing so for sensitive positions. A number of programs intended to improve employment opportunities have been evaluated. According to Steven Raphael's review, the results have not been particularly encouraging, either in improving employment over the long term, or in reducing criminal involvement. There have been a few highlights, including the residential program for high-risk youths called Job Corps, but a number of programs delivering training or other employment services have failed to reduce recidivism over the long run (Redcross et al. 2009, 2010).

Raphael argues in his chapter that the least encouraging evidence is with respect to the value of straight income supports. In their chapter, Sara Heller, Brian Jacob, and Jens Ludwig find that while there is some evidence that changes in family poverty status may reduce rates of criminal involvement by disadvantaged youth, the effects appear to be small. Of course, these programs may be justified by other goals. If the public supports funding programs to, say, improve the housing conditions of poor families without consideration of the potential effects on delinquency, evidence of crime reduction is a bonus that supports an already desirable program.

Heller, Jacob, and Ludwig note that social policies designed to reduce the concentration of poverty by helping poor families move to lower-poverty areas may also help reduce their criminal involvement, but the scope for achieving large-scale reductions in crime through that sort of strategy is limited by the great difficulty of getting families to move to different types of

7. We note that the treatment induced by changes in economic conditions operates through mechanisms other than the proportion of the population out of work—for example, the income that people have available to spend on criminogenic commodities like alcohol, or government revenues available for crime prevention activities such as corrections or police. Grogger (2000) argues for a focus on the relationship between wages and crime, rather than unemployment and crime, noting that individual decisions about both legal employment and criminal behavior will be driven by market wages. Grogger shows that in the National Longitudinal Survey of Youth, employment rates were quite similar for the 24 percent of youth who reported receiving some income from crime during the past year compared to the 76 percent who did not engage in crime, while wages and annual hours of work were quite different for the two groups (\$4.34 vs. \$497, and 1,500 vs. 1,755 hours per year of work).

neighborhoods. While families living in public housing (a small fraction of the total poverty population) can be induced to move to less distressed areas by offering them a housing voucher, providing housing-voucher subsidies to families already living in private-market housing rarely leads to relocation to a more prosperous neighborhood. Furthermore, if substantial numbers of poor households did relocate, their new neighborhoods might experience some increase in crime as a result of the actions or the influence of the teenage children of these households. That outcome has not been measured in the experimental studies. There is some suggestive evidence from studies of court-ordered school desegregation that the net system-wide effect of resorting disadvantaged youth across social settings is to reduce violent crime (Weiner, Lutz, and Ludwig 2009). Deconcentrating poverty is a long-term project that has much to recommend it, but the potential effects on crime are not well understood.

Drug Policy

The government's influence on crime rates is not confined to the criminal justice system. The uses of government authority to regulate, tax, and prohibit various commodities and activities may influence crime rates by creating or curtailing criminal opportunities. Most notable is the prohibition of transactions in and possession of cocaine, heroin, methamphetamine, and various other recreational drugs that are much in demand. The prohibition reduces use, which may in turn curtail some criminal activity associated with the intoxicating effects of these drugs. But it also creates crime, by defining as criminal anyone who uses or supplies them, and, more importantly, by creating underground markets that engender violence. (Another potential mechanism is that the high prices of illicit drugs may induce users to commit crime to support their habits.) Of course, crime and the costs of crime control are not the only considerations in regulating alluring and potentially damaging intoxicants. In an earlier era the United States repealed alcohol prohibition in part because of the crime and corruption it induced (Cook 2007).

The chapter by John J. Donohue III, Ben Ewing, and David Peloquin provides a thorough analysis of the dilemmas associated with regulating illicit drugs, focusing on marijuana and cocaine. The stakes are very high—currently 500,000 people are incarcerated for drug offenses, including over half of federal prisoners and one-fifth of state prisoners. The enormous growth in the prison population since 1980 is costly and its effectiveness remains unclear—most of the drug-crime prisoners are there for selling, yet during this period the average street price of illicit drugs has actually declined (Reuter 2001; Caulkins et al. 2004; Fries et al. 2008).⁸ Prohibition has also

8. As noted earlier, one challenge with drawing inferences about policy impacts from simple time-series evidence is the possibility of changes in other factors over time—which in the

induced a high level of systemic violence, with notable surges of murder and robbery associated with the growth in heroin markets during the Vietnam era, and then with the subsequent epidemics of powder cocaine, crack, and methamphetamine.⁹ The market for drugs in the United States has also had devastating effects in inducing violence and corruption in source and transshipment countries, notably Mexico and Colombia, which also attempt to prohibit commerce in these drugs.

The high costs of prohibition motivate a close look at the alternatives. In Europe and Latin America there has been a recent trend to “depenalize” drug possession while preserving the criminal prohibition on manufacture and sale. The more radical alternative is to repeal one or more of the drug prohibitions and replace them with a system of taxes and regulations. It is possible that high taxes could have the effect of preempting a surge in use while still shutting down much of the underground market. But Donohue and coauthors emphasize that the actual consequences are unknown, given the lack of experience with legalization. They offer reason to believe that if legalization does result in increased use, it would be more criminogenic in the case of cocaine than marijuana.

In his comment, Robert MacCoun applauds the authors’ recognition that there is great uncertainty about the long-term effects of a major regime change in drug regulation, and provides as an example the differing judgments by experts concerning the potential of marijuana legalization in California. MacCoun suggests that an intermediate policy of legalizing home cultivation would be less risky.

Reducing Criminal Opportunity

While underground markets create lucrative opportunities for crime, most property crime is an effort to steal legal commodities or money from their owners. The chapter by Cook and MacDonald observes that property crime rates and patterns are influenced by the availability of attractive opportunities, and that owners respond by investing in protection against theft.

present case could include changes over time in the nature of drug production or distribution. Kuziemko and Levitt (2004) try to overcome this problem by comparing trends in drug prices over time across states that have different trends in incarceration of drug offenders over time, which allows them to control for common period effects. They find some evidence that locking up drug offenders does reduce crime and increase cocaine prices, although as the authors note, this analysis is also primarily correlational.

9. The minimum drinking age provides an interesting counter example about the link between prohibition and crime. Those under twenty-one are prohibited from purchasing and possessing alcohol, and while this partial prohibition does have some effect on consumption and abuse, it is very widely violated. For example, about 80 percent of college-aged youths drink. However, unlike the prohibition of cocaine or heroin, or of alcohol in the 1920s, this partial prohibition causes few systemic problems. Most underage drinkers get their beverages from social connections—family or friends—or patronize a legal outlet that is willing to serve them. The result is that there is no profitable niche for illicit suppliers, and no bloody contests between underground dealers.

That investment is influenced by law and policy. For example, motor vehicle theft has been combated through manufacturer-installed locks of increasing sophistication, and the current immobilizers are so effective that stealing a new car requires a thief to have either the key or a tow truck. Motor vehicle theft prevention has been promoted through federal regulation and in some cases through the structure of insurance premiums, although there may still be a moral hazard problem given theft insurance and the fact that the police do not charge for their service of recovering stolen vehicles. In any event, the fact that there are fewer thefts now than in 1980 despite doubling the number of vehicles on the road—as well as the sharp reduction in joyriding—has much to do with improved locking devices. Private action enhanced by significant technological change has also been paramount in defending against credit card theft, shoplifting, and a variety of other potentially lucrative crimes.

Thus the first line of defense in property crime is private protection efforts, which do a great deal of the work in taking the profit out of crime. For various reasons the private incentive may be out of line with the public interest, in either direction. Cook and MacDonald discuss circumstances in which private incentives may induce an inefficiently high level of private action, for example, in the case of buying handguns for self-protection, or of avoiding public places that are deemed dangerous and become more so when abandoned by the public.

Finally, we note that juvenile curfew laws provide yet another avenue to limiting criminal opportunities. In effect they seek to incapacitate large numbers of underage youth during late evening hours, when the temptations for criminal activity (often fueled by intoxication) are high. Kline (2010) finds that juvenile curfew laws reduce violent and property crimes by around 8 percent the first year, with sustained declines in violent crimes that may be as large as 30 percent of previous levels. The overall scope for juvenile curfew laws to reduce crime is more limited than these large effects would suggest, since they apply to youth just below the curfew age, a group that accounts for an important but relatively modest share of all criminal behavior.

Changing Individual Propensities Toward Crime

The hope that social policy might be able to improve people's life chances, and reduce their propensity toward crime, was dimmed during the 1960s and 1970s. First, the distinguished sociologist James Coleman issued a landmark report in 1966, *Equality of Educational Opportunity*, which led many people to conclude that there was little that schools could do to improve children's schooling outcomes. Eight years later Robert Martinson published an essay in the *Public Interest* that reviewed the research on rehabilitation programs and came to the memorable (and influential) conclusion that "nothing works." The legacy of these gloomy reports is still in evidence. For

example, a 2002 poll by Peter D. Hart Associates asking the public about the most promising ways to prevent crime found that just 15 percent of respondents endorsed “improving public education for poor children.”¹⁰

More recent research, however, has identified interventions that do work. For example, schooling attainment has a powerful protective effect against criminal involvement, and a number of educational interventions can improve schooling attainment and related outcomes. While most of the educational interventions that have been targeted at disadvantaged adolescents or young adults have had disappointing results, there is at least one exception that is remarkable for its conceptual simplicity—extending mandatory school attendance to age eighteen. Other interventions that address social-cognitive skill deficits are promising—even (or perhaps, especially) for the highest-risk teens and adults. An important feature of programs to reduce criminal propensities is that they are also likely to have positive effects in a number of other domains. That is clearly true for education and early childhood programs, which influence prospects for success as a parent, a worker, and a citizen.

Schooling

In the standard Becker (1968) model of criminal behavior, schooling interventions may reduce crime by improving labor market prospects, thereby increasing the opportunity costs of crime or incarceration, or by changing “tastes” for the outcomes offered by criminal opportunities.

The ability of education policy to improve children’s schooling outcomes was called into question by the Coleman Report in 1966. Among its findings, the Coleman report noted that disparities across schools in measurable inputs were less pronounced than many people had believed, that most of the variation in children’s achievement test scores was within rather than between schools, that measurable school inputs were only weakly correlated with children’s test scores, and that actually the strongest predictors of children’s test scores were family background and the social composition of the child’s school (Coleman 1968). Decades of subsequent nonexperimental studies seemed to confirm this general picture (Hanushek and Lindseth 2009). The Coleman Report also showed that disparities in children’s school performance were already apparent during the preschool years, suggesting another possible target for educational interventions. But the possibility of “fade out” in the benefits of Head Start, the federal government’s main early childhood program became evident within a year of the program’s launch as part of the War on Poverty.

More recent studies that use stronger research designs show that selected interventions can improve children’s achievement test scores, although this is an outcome that is somewhat remote from either high school graduation or

10. Peter D. Hart Research Associates (2002).

criminal involvement.¹¹ One common denominator for many of these interventions is that they seek to increase the time that children spend interacting in developmentally enriching ways with teachers. Examples of interventions that seem to improve achievement test scores include early childhood education (which substitutes time with teachers for time with parents or other caregivers); reductions in class size in the early elementary grades (which may reduce classroom disruptions and so increase time-on-task, and also facilitate more individualized teacher instruction); selected comprehensive school reform models like Success for All (which includes increased instructional time and an emphasis on reading); Accelerated Middle Schools (which allow students behind in grade level to advance more than one grade during an academic year), and to some extent school accountability reforms as well, which increase time on academic subject areas and are also intended to improve the quality of instruction (and sometimes student effort) (see Jacob and Ludwig 2009). Another common denominator is that most of the interventions that have been found to be successful so far tend to target relatively young children.

In terms of the implications for criminal behavior, there is both bad news and good. The bad news is that in many cases, short-term gains in achievement test scores are not sustained; the good news is that some programs nonetheless seem to have positive effects on graduation or other outcomes many years later. These possibilities are illustrated by research on early childhood educational interventions. Most of these programs have test score gains that disappear after a few years, yet some interventions—including Head Start—appear to increase long-term schooling attainment (Garces, Thomas, and Currie 2002; Ludwig and Miller 2007; Deming 2009). As Lance Lochner notes in his chapter, direct evidence for impacts on crime is mixed across different early childhood programs. But given the generally encouraging impacts on schooling attainment, and evidence that schooling attainment has a causal effect on crime (Lochner and Moretti 2004),¹² our best guess is that later criminal involvement is likely reduced by preschool

11. Using test scores as a short-term outcome measure is akin to what medical researchers call a “surrogate clinical endpoint,” such as blood pressure. The real interest is in the longer-term outcomes we care about (schooling attainment and crime, as well as lifetime earnings), which may or may not be predicted by the near-term effect on test scores.

12. The chapter by Lance Lochner argues that raising the compulsory schooling age reduces criminal involvement by increasing schooling attainment, and in particular the likelihood of graduation from high school. Less certain is whether *any* intervention that raises graduation rates would reduce criminal behavior. If there are heterogeneous effects of school attainment on crime, it is possible that different educational interventions may act on different subpopulations and so differ in their impacts on crime. Some indirect evidence on this point comes from Oreopoulos (2004), who finds that the effect on earnings from compulsory schooling laws in the United States, which affect a relatively modest share of the population, are not so different from the effect of such laws in the United Kingdom that increased schooling for nearly half the population. Put differently, the local average treatment effect (LATE) does not appear to differ substantially from the average treatment effect (ATE), at least for earnings—an outcome not entirely unrelated to criminal behavior.

programs that are effective in improving education outcomes. Impacts on criminal behavior can lead early childhood programs to have very large benefit-cost ratios—for example, up to 13:1 for the Perry Preschool model program, with nearly 70 percent of the program’s benefits coming from reduced criminal behavior (Belfield et al. 2006).

Lochner’s chapter notes that one of the few educational interventions that has been shown to improve schooling outcomes for adolescents (as opposed to young children) is increasing the compulsory schooling age. This finding speaks to the possibility of motivation as being a key factor in the success of educational interventions, an idea that receives some additional support from considering the short list of other programs that the US Department of Education’s What Works Clearinghouse¹³ considers at least promising in this regard: High School Redirection, which emphasizes basic skills development and small school environments to improve connections between students and staff, and encouragement to teachers to also act as mentors; Check & Connect, which involves mentoring relationships and ongoing monitoring and supports for school attendance; and financial incentives for teen parents to stay in school, including Wisconsin’s Learnfare program (Dee 2009).¹⁴ In his chapter, Steven Raphael notes that the interventions shown to improve schooling attainment for at-risk youth, such as the Job Training Partnership Act (JTPA), Job Corps, and JOB START, all have a vocational orientation, which further speaks to the possible importance of attending to motivation for educational programs for older youth.

Social-Cognitive Skill Interventions

The evidence that early childhood interventions increase schooling attainment despite test score fadeout highlights the potential importance of socio-emotional and behavioral skills—what economists like to call “noncognitive outcomes”—as key mediating mechanisms for long-term behavioral impacts (Heckman et al. 2010). The chapters by Patrick Hill, Brent Roberts, and colleagues, by Seth Sanders, and by Richard Frank and Thomas McGuire highlight the evidence on psychological interventions that directly seek to build what Ken Dodge calls social-cognitive skills. The underlying logic of these interventions is fairly compelling, given descriptive evidence that many disadvantaged children have social-cognitive skill deficits that may stem in part from harsh and inconsistent parenting, as well as a large body of evidence that a variety of social-cognitive skill measures are strongly

13. See <http://ies.ed.gov/ncee/wwc>.

14. MDRC’s randomized experimental evaluation of Career Academies, which use small-school environments, vocationally oriented curricular materials and internships to help increase the relevance of school for high school-age students, seems to improve earnings prospects even without affecting schooling attainment. The intervention does not have any detectable effect on self-reported criminal behavior, although whether that is simply an artifact of respondent unwillingness to report criminal involvement is unclear. See Kemple (2008).

correlated with future risk of criminality, schooling attainment, earnings, and other key outcomes (Heckman 2008; Heckman, Stixrud, and Urzua 2006; Heckman and Rubinstein 2001). Terrie Moffitt and Stephen Ross, in their comment for this volume, provide a striking demonstration of the importance of one such skill—self-control. Based on their analysis of two large extended cohort studies, they demonstrate that self-control measured in childhood strongly predicts subsequent criminal activity as well as a variety of other problem behaviors.

The review by Brent Hill and colleagues notes that encouraging evidence is available from randomized controlled trials for interventions that try to work with youth and their families, such as Functional Family Therapy, Multisystemic Therapy, and Multidimensional Foster Care. The goal is to change the social-cognitive skills of youth and to modify the social systems that may contribute to or reinforce the youth's delinquency. For interventions that try to work just with the at-risk youth themselves, such as cognitive behavioral therapy, the quality of evaluations is more mixed, with few randomized experiments. But those experiments and the larger set of observational studies point in the same general encouraging direction.

The existing evaluation evidence on skill-building interventions, if taken at face value, suggests benefit-cost ratios of up to 15:1 or 20:1, at least as large as those for the most promising early childhood interventions (Greenwood 2008; Drake, Aos, and Miller 2009). One possible reason these programs have such high benefit-cost ratios is that they focus on working with justice system-involved populations whose baseline crime rates are high. If the effects of these skill-building interventions fade out (decline in magnitude) over time, then there may be value in targeting these interventions toward the highest-risk people during the highest-risk life stages (adolescence and early adulthood) rather than at younger children who have many years to go before their key high-risk period.

How do we reconcile this cautiously optimistic take on the efficacy of social-cognitive skill development in reducing crime, including among justice-involved populations, with the gloomy assessment of rehabilitation programs from Martinson back in 1974? We do not question his judgments about the evidence available to him.¹⁵ The more optimistic conclusion stems

15. Martinson's (1974) original conclusion was: "With few and isolated exceptions, the rehabilitative efforts that have been reported so far have had no appreciable effect on recidivism" (25). In his 1979 essay he notes that on the basis of including nonexperimental studies in his review, "I withdraw this conclusion . . . treatments will be found to be 'impotent' under certain conditions, beneficial under others, and detrimental under still others." The new evidence "warns against confining juvenile offenders without some kind of treatment. The pattern of effects does not indicate that any treatment will work (for example, job placement and benign custody are questionable). But most treatments for incarcerated juveniles have negative effect sizes and one suspects that a common process may be at work" (Martinson 1979, 252, 256–7). It is possible that Martinson recanted for the wrong reasons, since the large number of nonexperimental studies that he added to his literature review were plagued by selection bias (Miller 1989).

from evidence on efficacy of new developments in the field, and new evidence on long-standing programs (such as compulsory school attendance).

Mental Illness and Drug Abuse

Drug Courts

Harold Pollack, Peter Reuter, and Eric Sevigny analyze the capacity of drug courts to address the problem of drug-involved offenders. A casual look at the data suggests that drug courts, with their focus on diversion and treatment, should be well positioned to make a large dent in both incarceration and crime. The authors note that there were upward of half a million inmates convicted of drug-related offenses in 2002, and that something like half of all adult arrestees test positive for some drug other than marijuana. The HOPE experiment described earlier, along with other evidence, demonstrates that interventions that reduce offenders' drug use also reduce their rate of crime commission. Yet, conclude Pollack and his coauthors, the fact is that the typical scope of drug courts is so narrow that they have little effect on the rate of prison admissions. The aging cohorts of drug-involved offenders left behind by the heroin and cocaine epidemics have long criminal records and are not eligible for diversion—even though their risk of committing a violent crime may be lower than that of younger offenders with shorter records. In fact, the authors find that even if drug courts were available in every jurisdiction, it would make very little difference in the rate of new prison sentences, given the stringent eligibility criteria for diversion to drug court. Younger defendants picked up for possession, who are eligible for diversion to a drug court, would not be sentenced to prison in any case.

In his comment on Pollack, Reuter, and Sevigny, Jonathan Caulkins expands on the notion of an epidemic cycle in drug initiation and abuse. He documents the remarkable similarity in the temporal pattern across ten types of drugs, and concludes that the appropriate response requires an understanding of how the characteristics of the typical user changes over time for each type of drug.

Alcohol Control

Alcohol is the main intoxicant that has not been subject to prohibition in recent history. Alcohol use and abuse is widespread, and an important ingredient in domestic violence, violent crime (both perpetration and victimization), reckless driving, and a variety of problems in noncriminal domains. Since repeal in 1933, alcohol has been subject to a variety of taxes and regulations—these days much laxer than a generation or two ago, but still somewhat effective in limiting abuse. The chapter by Christopher Carpenter and Carlos Dobkin reviews the evidence on the causal role of alcohol in crime, and then provides an assessment of the various regulatory approaches. The most compelling evidence is in support of the crime prevention effects of raising prices through higher excise taxes. The minimum legal drinking age

also is effective in this respect, but in that case there is nowhere to go—every state sets twenty-one as the minimum age and has no appetite for raising it to, say, twenty-five. There is some evidence that outlet density (which can be controlled through licensing) has an effect on abuse and its consequences. In terms of a cost-benefit analysis, raising excise taxes scores well since it is readily justified as a Pigovian correction for the negative externalities of drinking—and surprisingly well targeted (Cook 2008).

Mental Health Treatment

Richard Frank and Thomas McGuire provide an analysis of mental health courts. They note that about one-quarter of inmates of both jails and state prisons have had a diagnosis of mental illness other than drug dependence, and that the rates are still higher for adjudicated delinquents. A clear causal link between psychosis and violence exists, a link that is exacerbated by substance abuse, which often co-occurs. Yet there is scant evidence that getting mentally ill offenders into treatment rather than prison will reduce their subsequent criminal behavior. One problem that Frank and McGuire mention is that mental health disorders contribute to a constellation of other life problems that create a legacy of elevated risk for criminal involvement, even if the mental health disorder itself is eventually treated. With some exceptions, the authors conclude that the treatment-oriented approaches offered by the 150 mental health courts currently operating would have to be justified by goals other than crime reduction.

In his comment, Jeffrey Swanson extends the discussion of the causal pathways that link mental illness and crime, noting that both constructs are complex and that they interact and overlap in a variety of ways. The inherent complexity in these domains should be considered in developing worthwhile interventions.

Conclusion

The chapters in this volume provide assessments of a variety of approaches to controlling crime. All of these approaches can be understood within a simple framework, which specifies that observed crime rates are the result of individual choices of whether to exploit available opportunities for crime. The characteristics of criminal opportunities available to any one individual—characteristics such as the likelihood of success and payoff if successful, likelihood of arrest and severity of punishment—are determined by private actions (including the general level of precaution and expenditures on private security) as well as public law enforcement. How individuals evaluate a criminal opportunity will depend in part on their preferences, their ability to achieve their goals by alternative licit means, and their self-management skills.

In this introductory chapter, we organized our summary of findings into

two large and somewhat overlapping bins, which we labeled “changing the offending environment” and “changing individual propensities toward crime.” Each bin includes promising, well-documented approaches to controlling crime, and also includes examples of what might be termed negative knowledge—negative assessments of common practices. Unfortunately, we usually do not have enough information about a promising intervention to do a complete assessment, which would include, at a minimum, good information on the benefits and costs, the potential scope (that is, what portion of the crime problem does it address), and the ease of implementation. The information needed for a complete assessment is especially great in the case of programs that do not have crime control as the primary goal, such as schooling, income maintenance, and alcohol taxation. Also relevant to judging which types of interventions should be the focus of policymaker attention is ease of implementation. For example, proactive and antigun policing strategies have the potential to exacerbate police-community tensions if not implemented well. The dramatic success of Hawaii’s HOPE program, which provides swift, certain sanctions to drug-involved probationers, has been possible in part because of a truly exceptional local judge (and perhaps a general Aloha spirit), and may prove difficult to export.

Here we recap the list of topics and identify some of the programs that appear particularly promising based on current assessments of costs and benefits, together with a few cases where assessments are negative or indeterminate. We conclude with a back-of-the-envelope exercise that helps highlight the potential magnitude of the inefficiency within our current policy approach—that is, how much extra crime prevention could be achieved by simply reallocating resources from less efficient to more efficient uses.

Changing the Offending Environment

Efficient Sanctioning of Crime

Coerced abstinence for convicted criminals. The experimental evaluation of HOPE in Honolulu provides strong evidence that criminal activity by felony probationers is closely linked to their drug use, and that the drug use can be controlled through a regime of frequent drug tests and sure but mild penalties for failure. Benefits greatly exceed costs (which on balance are negligible or even negative), and the potential scope is broad. The key challenge is implementation within the existing system of courts and corrections.

Police resources. Evaluation of the federal COPS program indicates that providing police departments with more funding has benefits (in terms of crime control) that are a multiple of costs. In some departments, still further gains may be possible through focusing on the most socially costly aspects of the crime problem—such as gun violence.

Private coproduction. State and local governments can encourage private action that makes law enforcement more productive. Two examples for which

the benefits exceed costs by an order of magnitude are creation of the police-tracking infrastructure for LoJack, and creation of the legal framework that facilitates successful business improvement districts.

Jobs and Income Supports

Jobs. There is an oft-repeated saying in Chicago and many cities around the country: “Nothing stops a bullet like a job.” Yet the evidence on job training and placement for offenders is mixed at best.

Transfer programs to alleviate poverty. The evidence on crime-reducing effects is even more discouraging for income support programs for ex-offenders than for job programs. On the other hand, income support programs for poor families, which are not usually justified by their effects on crime, have some beneficial side effects in reducing criminal behavior by youth in participating families.

Regulation of Drugs and Alcohol

Drug policy reform. While underground markets for some prohibited drugs engender crime and violence, the United States has no contemporary experience with a more liberal regime and there remains considerable uncertainty about the potential effects of liberalization on crime, arrests, and imprisonment.

Reducing Criminal Opportunity

Regulations to reduce motor vehicle theft. Immobilizers are installed in 85 percent of new vehicles in the United States. It is plausible that an increase in that prevalence would be cost-beneficial, and could be achieved either through direct regulation or a requirement for an insurance premium surcharge on new vehicles that lack this protection.

Changing Individual Propensities Toward Crime

Schooling Interventions

Intensive preschool programs. Current funding levels for Head Start are sufficient to enroll only around half of the nation’s three- and four-year-old children in poverty (Haskins and Barnett 2010). Moreover, even those children who do get to participate in Head Start receive services that are much less intensive than those provided through model programs like the widely cited Perry Preschool intervention. While the evidence for the effects of early childhood interventions on criminal behavior itself is mixed, the strong evidence for beneficial effects on schooling attainment leads us to conclude that effects on crime are quite likely even if they are difficult to measure directly.

Compulsory schooling age. There is strong quasi-experimental evidence from both the United States and Great Britain that cohorts exposed to an

increased compulsory schooling age have reduced crime involvement. That benefit augments the usual list of benefits associated with more schooling.

Social-Cognitive Skill Interventions

Skill-building interventions with adolescents and their families. A cluster of programs that take this approach seek to change the social-cognitive skills of youths and to modify the social systems that may contribute to or reinforce delinquency. Included here are Functional Family Therapy, Multisystemic Therapy, and Multidimensional Foster Care. Strong evidence suggests benefits are a multiple of costs for high-quality programs in this area.

Mental Illness and Drug Abuse

Mental health and drug treatment. Crime has considerable overlap with both drug abuse and mental illness. Specialized courts designed to get defendants into treatment have value, but their domain is quite limited in practice to lesser offenders.

Alcohol excise tax rates. The federal and state excise tax rates on beer and liquor have declined markedly (in real terms) during the post–World War II period. These rates are considerably below the marginal external social cost, even if effects on crime are not considered. The evidence that raising taxes and prices would reduce some types of crime is very strong.

Note that the previous list is far from exhaustive, but sufficient to provide a sense of the diverse menu of possibly effective interventions, drawing on a wide variety of domains. And it bears repeating that the goal is not to identify the best option, but rather the best portfolio of options.

Potential Efficiency Gains From Reallocating Resources

Our review of the chapters in this volume suggests that America's current approach to crime control is inefficient—more crime control could be accomplished with the same level of resources. To help illustrate the potential gains from improving the efficiency of the current system, consider the following hypothetical policy experiment.

Imagine that we changed sentencing policies and practices in the United States so that average prison sentence lengths reverted back to the levels of 1984—that is, midway through the Reagan presidency. We estimate that this policy change would reduce the size of our current prison population by around 400,000 people and reduce total prison spending (currently equal to \$70 billion annually)¹⁶ by about \$12 billion per year.¹⁷

16. <http://www.albany.edu/sourcebook/pdf/t122006.pdf>.

17. Our \$12 billion estimate is derived as follows. Raphael and Stoll (2009) present results suggesting that 35 percent of the increase in state prison populations from 1984 to 2002 was the result of increased prison sentence length. We extend this estimate and assume that 35 percent of the total increase in federal plus prison populations from 1984 through 2009 is due to increased sentence lengths (but that changes in sentence lengths over time have no effect on the

What would we give up by reducing average sentence lengths back to 1984 levels? In terms of crime control, the chapter by Steve Durlauf and Daniel Nagin in this volume suggests the answer may be: not all that much. The \$12 billion we spend per year to have average sentence lengths at 2009 rather than 1984 levels must presumably produce some crime reduction, although Durlauf and Nagin's chapter suggests the impact might be fairly modest. For the sake of argument, we assume that society breaks even on that expenditure, although more pessimistic assumptions are also warranted.

What could we do instead with this \$12 billion in freed-up prison spending? One possibility would be to put more police on the streets. Currently, the United States spends around \$100 billion per year on police protection,¹⁸ so this hypothetical policy switch would increase the police budget by 12 percent and put perhaps as many as 100,000 more police officers on the streets.¹⁹ The estimated elasticity of crime with respect to police is far larger (in absolute value) than even the most optimistic assessment of what the elasticity of crime would be with respect to increased sentence lengths. This resource reallocation would lead to a decline of hundreds of thousands of violent and property crime victimizations each year.²⁰ A different way to

size of the jail population, which may or may not be true). Data from the Bureau of Justice Statistics indicate there were 462,000 people in state and federal prisons in 1984, and 1,613,656 people in 2009 (see <http://bjs.ojp.usdoj.gov/content/dtdata.cfm#corrections> and <http://bjs.ojp.usdoj.gov/index.cfm?ty=pbdetail&iid=2272>). Scaling back average sentence lengths to 1984 levels under our assumptions would have reduced the size of this increase by 35 percent, so that current prison populations would be 403,000 lower than actual levels. We assume that the costs to the government per prisoner are on the order of \$30,000 per year, which is consistent with the figures reported in Donohue (2009). Reducing average sentence lengths to 1984 levels would then free up $403,000 \times \$30,000 \sim \12 billion in government resources, ignoring for the moment any secondary effects on other government activities.

18. <http://www.albany.edu/sourcebook/pdf/t122006.pdf>.

19. The total number of police employees in the United States is currently around 1 million, about 70 percent of which are sworn police officers. <http://www.albany.edu/sourcebook/pdf/t1682009.pdf>.

20. John Donohue (2009) provides a best guess for the elasticity of crime with respect to imprisonment (at present incarceration levels) of between -1 and -1.5 (283), although this estimate mixes together the effects of punishment certainty with punishment severity and so is almost surely an upper bound for the elasticity of crime with respect to extended sentence lengths. If we conservatively assume an elasticity of -1 (which is probably too large in absolute value), and assume that our hypothetical change in sentence lengths reduces the size of the prison population by around 20 percent, and if we focus just on Uniform Crime Reports (UCR) part 1 index offenses known to the police, the result of the smaller prison population absent any other policy change would be around 26,000 more part 1 violent crimes and 186,000 more part 1 property offenses (see www.albany.edu/sourcebook/pdf/t31062009.pdf for 2009 FBI figures for part 1 crimes). Evans and Owens (2007) estimate that the elasticity of crime with respect to police is around -0.26 for property crimes and -0.99 for violent crimes. So all else equal, the 12 percent increase in police spending would lead to around 290,000 fewer UCR part 1 property crimes and around 156,000 fewer part 1 violent crimes. Our estimated net change in UCR part 1 offenses from switching \$12 billion from the prison system to police hiring would then be $(156,000 - 26,000) = 130,000$ fewer part 1 violent crimes, and $(290,000 - 186,000) = 104,000$ fewer part 1 property crimes. This calculation is subject to two sources of potential error that work in opposite directions. On the one hand, if increased policing reduces crime through incapacitation as well as deterrence, then putting more police on the streets will lead to more

think about the potential size of the efficiency gain here is to note that the benefit-cost ratio for increased spending on police may be on the order of 4:1 or 8:1 (Donohue and Ludwig 2007). If the benefit-cost ratio for marginal spending on long prison sentences is no more than 1:1, then reducing average sentence lengths to 1984 levels in order to increase spending on police could generate net benefits to society on the order of \$36 billion to \$90 billion per year.

Suppose instead that we devoted the resources freed up from a \$12 billion cut in prison spending toward Head Start. This 17 percent cut in the prison budget would support a 150 percent increase in the annual Head Start budget (currently around \$8 billion per year). Current Head Start funding levels are enough to enroll only around one-half of poor three- and four-year-olds in the United States, and provide them with early childhood education services that are far less intensive than widely cited and well-regarded model programs like Perry Preschool and Abecedarian in terms of the number of years of program participation (usually one for Head Start versus two to five for the others) and the quality (schooling attainment) of teachers. A 150 percent increase in Head Start's budget could dramatically expand the program on both the extensive and intensive margins. No one really knows what would be accomplished by an increase in Head Start funding that is so much larger than anything in our historical experience, but our best guess is that the benefit-cost ratio might be from 2:1 to 6:1.²¹ A defensible guess is that reallocating resources from long prison sentences to early childhood education might generate from \$12 billion to \$60 billion in net benefits to society.

If crime reduction is a key goal then we might do even better still by focusing on human capital investments in the highest-risk subset of the pop-

arrests and prison spells, which will offset part of the gains from reducing average sentence lengths. On the other hand, our calculation focuses just on crimes reported to the police, while data from the National Crime Victimization Survey suggests that only around half of violent crimes and 40 percent of property crimes are reported to the police.

21. Ludwig and Miller's (2007) study of the launch of Head Start suggests that a 50 to 100 percent increase in Head Start funding at the county level increases a county's high school completion rate by 3 to 4 percentage points (about 5 percent of the control mean). Suppose that a 150 percent increase in Head Start funding to expand enrollments and make the program look more like, say, Perry Preschool increased the overall high school graduation rate by 4 to 9 percentage points. The US statistical abstracts show that in recent years, birth cohorts have averaged around four million people. The estimates from Belfield and Levin (2007) (http://www.bcsc.org/media/download_gallery/AGGREGATE_REPORT_v7.pdf) suggest that the benefits to society for each extra high school graduate are (conservatively) around \$250,000 from increased present value of lifetime earnings, \$40,000 in present value from health improvements, and \$27,000 in reductions in criminal behavior, for a total of around \$317,000. If we discount this back to age four from age eighteen using a 3.5 percent rate, the present value would be around \$196,000. We can then think of a \$12 billion per cohort increase in early childhood spending to expand and intensify Head Start as leading to an aggregate benefit per cohort in present value terms ranging from $(.04) \times 4,000,000 \times \$196,000 = \$31$ billion up to $(.09) \times 4,000,000 \times \$196,000 = \$70$ billion, for a B/C ratio ranging from $(31/12) = 2.6$ up to $(70/12) = 5.8$.

ulation—namely, trying to address social-cognitive skill deficits of young people already involved in the criminal justice system. Research going back to Marvin Wolfgang’s seminal study of a Philadelphia birth cohort from the 1950s has found that a small fraction of each cohort commits the bulk of all crime. While early childhood interventions have the benefit of targeting people during the time of life in which they may be most developmentally “plastic” (see Shonkoff and Phillips 2000; Knudsen et al. 2006), interventions directed at adolescents and young adults enables us to more tightly target those who have emerged as the most likely members of that high-offending subset through their arrest histories. Another relative benefit of targeting criminally active teens and adults is the immediate (rather than long-delayed) payoff from reductions in crime.

What sort of social-cognitive skill development could we provide to high-risk young people with \$12 billion per year? With around \$1 billion annually, we could provide functional family therapy (FFT) to each of the roughly 300,000 youths on juvenile probation each year.²² Drake, Aos, and Miller (2009, 186) report that FFT costs something on the order of \$2,500 per youth, with a benefit-cost ratio that may be as high as 25:1 from crime reductions alone. With the remaining \$11 billion we could provide multi-systemic therapy (MST) to almost every person aged nineteen and under who is arrested each year.²³ Drake and colleagues estimate the cost of MST is around \$4,500 per year, with a benefit-cost ratio of around 5:1. These estimates, if taken at face value, indicate that diverting \$12 billion from long prison sentences to addressing social-cognitive skill deficits among high-risk youth could generate net social benefits on the order of \$70 billion per year. Even if FFT and MST were only half as effective as previous experiments suggest when implemented at large scale, this resource switch would still generate perhaps on the order of \$30 billion in net benefits to society.

Our calculations are intended to be illustrative rather than comprehensive benefit-cost analyses. The estimates are self-evidently subject to a great deal of uncertainty. But they provide a suggestion of the efficiency gains that could result from reallocating resources from prison to other uses that will, among other outcomes, reduce crime.

Efficiency is by no means the sole criterion by which government programs are (or should be) evaluated. But we tend to doubt that apparently large deviations from efficient policy reflect other normative standards. More likely it reflects the intrinsic difficulty of rationalizing policies across domains, agencies, and levels of government. The result is that in the quest for effective crime control, it appears possible that we could have more for less.

22. See <http://www.ojjdp.gov/ojstatbb/probation/qa07104.asp?qaDate=2007>.

23. FBI data suggest that around 2.6 million people aged nineteen and under were arrested; <http://www.albany.edu/sourcebook/pdf/t442009.pdf>. There will be a smaller number of unique individuals who are arrested in this age range because a given adolescent could be arrested more than once per year.

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