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Fighting Crime: An Economists View

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Over the past 40 years, the number of motor vehicle fatalities per mile driven in the United States has dropped an astounding 70 percent. While some of the gains can be attributed to improvements in technology, public policy has made a big difference. The government followed the advice of researchers who had studied auto accidents, improving highway design and instituting a variety of regulations, including mandatory seat belt use and harsher penalties for drunken driving. By contrast, most types of street crime are still above the levels of 40 years ago, despite the impressive drops in the 1990s. A major reason for the difference, I would argue, is that the crime issue has been hijacked by ideologues and special interests, preventing the emergence of a policy consensus driven by research.

Why listen to an economist pontificate on what most people would call criminology? Economists bring a unique perspective to the table – a utilitarian view in which one assumes that behavior can be changed by altering incentives, that the costs of crime can be measured in terms of money and that public policy is best evaluated by comparing costs and benefits. It's hardly the only view, but I would argue that it is a view that

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An Economist's View

By John J. Donohue

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provides exceptional insight into limiting the adverse consequences of antisocial behavior.

We know more today than ever how to reduce crime. If we could get past the barriers of ideology and special pleading, we could see reductions in crime rivaling the magnitude of the gains in automobile safety. What follows are a host of measures that would sharply reduce the \$400 billion annual toll from street crime in the United States.

STOP THE BUILDING BOOM IN PRISONS

Virtually everyone agrees that incarceration must remain a core element of any strategy to fight crime. Locking up more people reduces crime because more criminals are kept off the streets and/or the prospect of time behind bars deters criminal behavior. But you can have too much of a “good” thing. Between 1933 and 1973, incarceration in the United States varied within a narrow band of roughly 100 to 120 prisoners per 100,000 population. Since then, this rate has been increasing by an average of 5 percent annually. As of June 2003, some two million individuals were imprisoned – a rate of almost 500 per 100,000.

To determine whether the current level of incarceration makes sense, one must ask whether the benefits at the margin in terms of less crime exceed the costs to society. On the benefit side, the research suggests that the “elasticity” of crime with respect to incarceration is somewhere between 0.1 and 0.4 – that is, increasing the prison population by 10 percent reduces crime by 1 to 4 percent. On the other side of the equation, estimates of the cost of locking up another individual run between \$32,000 and \$57,000 annually.

The most rigorous study on the relevant

elasticity was conducted by William Spelman of the University of Texas. He concluded that “we can be 90 percent confident that the true value is between 0.12 and 0.20, with a best single guess of 0.16.” Since Spelman’s estimates accounted for the incapacitation effect, but ignore any deterrence effect, I rely conservatively on somewhat larger elasticity of 0.2.

The most carefully constructed and comprehensive study on the costs of incarcerating a criminal was a 1990 report prepared for the National Institute of Justice, which produced the high-end estimate (\$57,000 annually, in 2003 dollars). I adjust this figure downward (in part because the study probably overstates prison construction costs and exaggerates the social cost of welfare payments to the dependents of the incarcerated) to arrive at a figure of \$46,000 per prisoner per year.

With an elasticity of crime with respect to incarceration of 0.2 and an annual cost of housing a prisoner of \$46,000, the “optimal” level of incarceration would require imprisoning 300,000 fewer individuals. This is just a ballpark estimate, of course. But, at the very least, it implies that we cannot expect to get much more crime reduction at reasonable cost by increasing the numbers behind bars. It is time to stop making prison construction the major public works project of our day.

ABOLISH THE DEATH PENALTY

In recent years, the death penalty has been meted out an average of 80 times annually. These executions come at a high tangible cost. For while executing an individual does save the money that would have been used for a lifetime in prison, these savings are dwarfed by the costs of death-penalty trials and appeals. The most scholarly research on the topic, by Philip Cook and Donna Slawson Kuniholm of Duke, found that the State of North Carolina spent \$2.16 million per exe-

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cution more than what would be spent if the maximum penalty were life in prison.

Proponents of the death penalty usually justify these costs by invoking its deterrence effect. But Steve Levitt of the University of Chicago has noted that the risk of execution for those who commit murder is typically small compared with the risk of death that violence-prone criminals willingly face in daily life – and this certainly raises questions about the efficacy of threatening them with the death penalty. Currently, the likelihood of a murderer being executed is less than 1 in 200. By way of comparison, Levitt and his colleague Sudhir Venkatesh find 7 percent of

street-level drug sellers die each year. Levitt concludes that “it is hard to believe the fear of execution would be a driving force in a rational criminal’s calculus in modern America.”

Nor is there direct evidence that the death penalty generates gains for society in terms of murders deterred. In an often-cited paper written in the early 1970s, Isaac Ehrlich (then a graduate student at the University of Chicago) estimated that one execution could save eight lives. But research since has showed that minor changes in the way the figure is estimated eliminate the deterrence effect. Indeed, Levitt, working with Lawrence Katz of Harvard and Ellen Shustorovich of the City Uni-

versity of New York, found that the death penalty might even add to the total number of murders. Thus, abolishing the death penalty would save American taxpayers more than \$150 million a year at no apparent cost to society.

EXPAND THE POLICE FORCE

In the 1990s, a variety of new policing strategies were introduced in New York City and other localities. New York increased enforcement of statutes on petty crimes like graffiti and marijuana possession and made better use of technology and statistics in identifying crime “hot spots.” Boston adopted an innovative multi-agency collaboration that took aim at gang violence. And numerous cities, notably San Diego, introduced “community policing,” in which police attempted to work as allies with communities, rather than just antagonists to criminals. The results seem impressive: from 1991 to 1998, the cities that experienced the



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largest decline in murder rates were San Diego (a 76 percent drop), New York City (71 percent) and Boston (69 percent).

Were better policing strategies responsible for these results, and would cities be wise to adopt or expand such programs? A study of Cincinnati found that a “community service model” of policing, in which cops become more familiar with the neighborhoods they served, did not significantly lower crime. Furthermore, community policing did not seem to affect attitudes toward police.

Note, too, that New York’s experiments are inconclusive – cities without tough policies on minor crime experienced significant crime drops, too. Moreover, New York’s substantial crime declines began before 1993, the year in which Mayor Giuliani took office and initiated the policing changes. Indeed, two other factors seem to explain all of the crime drop in New York City: increases in the total number of police officers and its high abortion rate many years earlier, which Levitt and I found to correlate with subsequent declines in crime because of the reduction in unwanted births of children most at risk of becoming criminals.

Another change in the 1990s – one that received far less press attention than changing policing strategies – was the substantial increase in the size of police forces. From 1994 through 1999, the number of police per capita in the United States grew by almost 10 percent. The expansion was even more pronounced in big cities with high crime rates. Much of this increase can be attributed to the Community Oriented Policing Services (COPS) program, which was signed into law by President Clinton in 1994 and is now in the process of being phased out by President Bush. A report commissioned by the Justice Department credits this program with adding



more than 80,000 officers to the streets.

The effects of increases in police, as opposed to changes in policing strategies, have been widely studied, with most studies showing that the benefits have exceeded the costs. The most rigorous studies have found elasticities of crime with respect to police of between 0.30 and 0.79 – that is, a 10 percent increase in police reduces crime between 3.0 and 7.9 percent. Using a conservative estimate for this elasticity (0.4) and a rather high estimate of the total annual cost of maintaining an extra police officer (\$90,000) while assuming that crime costs \$400 billion a year, the United States would have to hire 500,000 additional police officers to reach the optimal policing level. According to the FBI, there are some 665,000 police in the United States. So the optimal level is almost double the num-



ber we have today. Thus while adding hundreds of thousands of police officers is hardly a political priority these days, simply restoring financing for the COPS program would be a start.

ADOPT SENSIBLE GUN CONTROL

In 2002, there were some 11,000 homicide deaths by firearms. The United States' per capita firearm homicide rate is more than eight times that of Canada, France, Germany, Japan, Spain and Britain. Much could be done to reduce gun-related crime. Most such initiatives are off the table, however, because conservatives have garnered enormous electoral benefits from fighting gun control.

What's more, the highly publicized work of the researcher John Lott has confirmed the views of many conservatives that gun control

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is already excessive – that allowing citizens to carry concealed handguns would drastically *reduce* violent crime. Lott reasons that the threat of these concealed weapons serves as a deterrent to crime. And his research has been cited by many politicians supporting laws allowing concealed weapons, which have been passed by some 30 states.

There are, however, serious flaws in Lott's research. The best guess based on all the empirical evidence is that these "shall issue" laws actually increase crime, albeit by a relatively modest amount. There are a number of possible explanations for this: the guns being carried are easier to steal (more than a million guns are stolen each year, which is a major source of supply to criminals), for one, while the threat of being shot in a confrontation may inspire criminals to shoot first. It is worth noting, moreover, that laws allowing for easier access to guns increase the threats of both accidental death and suicide.

One alternative to "shall issue" laws is "may issue" laws, which allow discretion in handing out permits, with an applicant having to prove a need for protection. These laws, which have been passed in 11 states, could have some of the deterrent benefits Lott speaks of without as many of the harmful effects that plague "shall issue" laws if the licensing discretion is used wisely.

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Another much-debated gun law was President Clinton's 1994 assault-weapons ban, which was recently allowed to expire. This law prohibited a specific list of semiautomatic guns deemed useful for criminal purposes but unnecessary for sport or self-defense, and banned ammunition feeding devices that accept more than 10 rounds. According to plausible guesstimates, assault weapons were used in about 2 percent of pre-ban murders, and large-capacity magazines were used in about 20 percent. The secondary goal of the assault weapons ban was to reduce the harm from crime by forcing criminals to employ less dangerous weapons. Jeffrey Roth and Christopher Koper of the Urban Institute in Washington found that those murdered by assault weapons had, on average, more wounds than those killed with other guns. They also found that, in mass murders, those involving assault weapons included more victims.

Was the ban effective? Probably not very. The law was rife with loopholes. For one thing, the law grandfathered assault weapons produced before the ban, which led gun manufacturers to increase production before the law took effect. In addition, gun companies could – and did – produce potent legal guns with little change in performance. Admittedly, a true ban on assault weapons would not have a huge effect on homicide since most criminals would simply use less powerful guns if the desired weapons were unavailable. A strong ban on large capacity magazines, however, which are estimated to be used in 20 percent of homicides, could be very helpful.

David Hemenway, an economist and director of the Harvard Injury Control Research Center, has examined the evidence on the potential impact of other gun-related measures and identifies six that have shown some success in lowering crime:

- preventing police from selling confiscated guns.
- instituting one-gun-purchase-per-month laws.
- plugging secondary-market loopholes.
- tracing all guns used in crime.
- producing guns that can be fired only by their owners.
- registering all handguns.

None of these, alas, is an easy political sell in today's America.

LEGALIZE DRUGS

The most effective federal crime-fighting public initiative in American history was the lifting of alcohol prohibition in the early 1930s. Homicides fell by 14 percent in the two years after prohibition ended. In all likelihood, similar benefits would emerge if we ended drug prohibition, although obviously other steps would need to be taken to reduce the societal costs associated with drug use.

The logic behind drug legalization as a crime reducer is two-fold. First, a significant number of homicides are caused by drug-related disputes. The FBI has classified about 5 percent of homicides as drug-related. And this number is very conservative since the FBI attributes only one cause to each murder. A fatal dispute about a drug deal may be characterized as an "argument over money" or a "gangland killing" rather than a drug homicide. Paul Goldstein of the University of Illinois at Chicago found that about 9 percent of homicides in New York City were caused by broader "systemic" drug issues.

The major reason so many drug disputes end in violence is the lack of institutional mechanisms to resolve them – buyers and sellers cannot seek redress in court, or complain to the Better Business Bureau. Legalization could also lower crime by freeing crime-fighters for other purposes. About \$40 billion

is spent annually on the war on drugs.

Decriminalizing drugs would also free space in prisons. Levitt found a substantial “crowding out” effect, meaning that increased incarceration of drug-related criminals decreases incarceration of other criminals. Currently, more than 400,000 individuals are in prison for nonviolent drug crimes, with about 50,000 of them imprisoned for violations involving only marijuana.

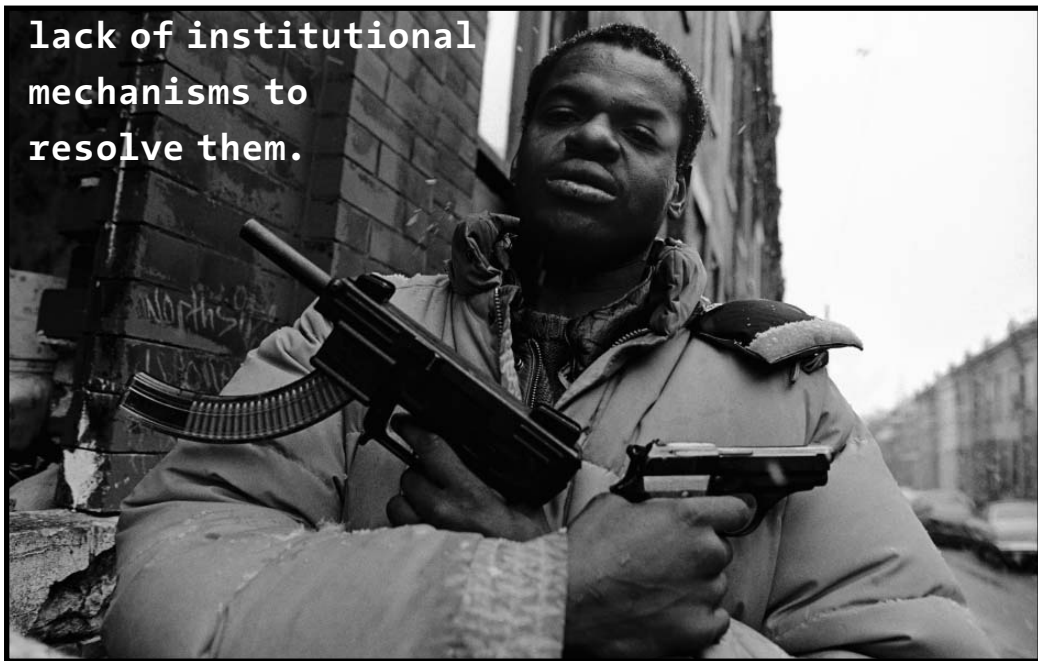
Of course, drug legalization is not without risks. Legalization would tend to increase drug consumption, lowering economic productivity and perhaps increasing behavior that is dangerous to nondrug users.

One simple way to restrain drug consumption after legalization would be through taxation. Gary Becker and Kevin Murphy of

the University of Chicago along with Michael Grossman of the City University of New York construct a model in which the optimal equilibrium with legalization and taxation can actually lead to higher retail prices – and lower consumption – than the optimal system under prohibition. Such a policy would also raise additional money for the government, which could be used for any number of purposes. It would be substantially easier to enforce a tax on drugs than it is to enforce the current ban on drugs, since most individuals would pay a premium to purchase their drugs legally. Instead of turning the hundreds of thousands of workers in the illegal drug markets (and their customers) into criminals, we could focus law enforcement on the much smaller set of tax evaders to keep consumption no higher than the levels of today.

Given the highly controversial nature of this proposal, a prudent first step might be to adopt this legalization/taxation/demand control scheme for marijuana to illustrate the

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benefits of shrinking the size of illegal markets while establishing that an increase in drug usage can be avoided. A number of other measures should be adopted to limit demand. Strict age limits could be enforced, advertising could be banned, and some of the money raised by taxes on drugs could be used to market abstinence and treatment of addicts.

EXPAND SUCCESSFUL SOCIAL PROGRAMS

In accepting his party's nomination, John Kerry said, "I am determined that we stop being a nation content to spend \$50,000 a year to keep a young person in prison for the rest of their life – when we could invest \$10,000 to give them Head Start, Early Start, Smart Start, the best possible start in life." He was expressing a belief common on the center-left that early childhood intervention can make children less likely to commit crime and actually save money down the road.

Is this view correct? Studies on Head Start have shown it to have lamentably little effect on participants' outcomes later in life, including their likelihood of committing crimes. Other programs, however, have shown tremendous potential in reducing crime (and enhancing other positive life outcomes), and resources should be shifted away from the unproductive programs toward the few that seem to work.

One of the most notable, the experimental Perry Preschool program, provided preschool classes to a sample of children in Michigan when they were 3 and 4 years old. This program attempted to involve the whole family by having the preschool teacher conduct weekly home visits. By age 19, Perry Preschool graduates were 40 percent less likely to be arrested than a control group, 50 percent less likely to be arrested more than twice, and far less likely to be arrested for major crimes.

While I would not expect a scaled-up program to perform as well as one implemented with a small group, even half the reduction in crime would be cost-effective. Estimates from studies of the program indicate that financial benefits to government, which came in the form of higher taxes from employment, lower welfare utilization and reduced crime, exceeded program costs by as much as seven to one.

Another cost-effective crime-fighting program is the Job Corps, which provides educational and vocational-skills training and counseling to at-risk youths. Each year, Job Corps enrolls some 60,000 kids at a cost of more than \$1 billion. Unlike some similar teenage intervention programs, the Job Corps is residential. Like the Perry Preschool Program, Job Corps has proved to pay for itself, generating more revenue in the form of taxes and avoided welfare payments than the costs of training the at-risk teens. Job Corps has also proved effective in lowering crime: a randomized experiment conducted by the research corporation Mathematica estimates that Job Corps participants are 16 percent less likely to be arrested than their peers.

For programs like the Perry Preschool and Job Corps to be successful in lowering crime, they must be targeted at those most likely to commit crimes. Six percent of the population commits more than 50 percent of crimes.

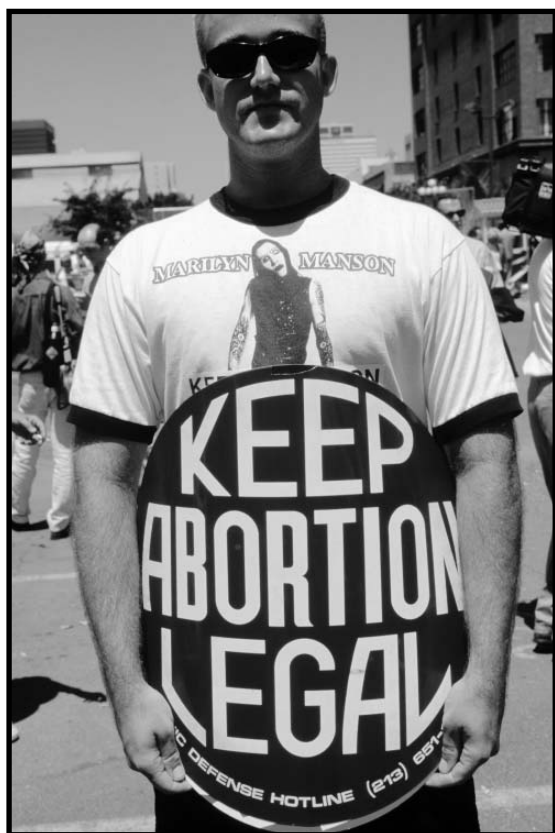
While there are moral and legal issues in targeting groups based on race, it should be possible to use such information to expand successful programs so that they cover more high-risk individuals.

DEFEND ROE V. WADE

One often overlooked variable in crime is the legal status of abortion. Levitt and I found that as much as half of the drop in crime in the 1990s can be explained by the legalization of abortion in the early 1970s. There are two reasons that legalized abortion lowers the crime rate. The first is obvious: more abortions mean fewer children, which in turn can mean fewer criminals when those who would have been born would have reached their high-crime years. The second is more important: abortion reduces the number of unwanted births, and unwanted children are at much greater risk of becoming criminals later on. The five states that legalized abortion before the rest of the country experienced significant drops in crime before other states did. What's more, the higher the rate of abortion in a state in the mid 1970s, the greater the drop in crime in the 1990s.

What would be the impact on crime if *Roe v. Wade* were overturned? If the Supreme Court restored the pre-1973 law allowing states to decide for themselves whether to legalize abortion, I suspect most of the blue states would keep abortion legal. Even in the red states, abortion would not disappear entirely because residents could still find safe, out-of-state abortions. But the number of abortions would fall sharply, particularly for poor women.

Suppose that abortion were outlawed in every state that voted for Bush in 2004 and that the abortion rate dropped by 75 percent in these states but remained the same in blue states. Our research suggests that violent



crime would eventually increase by about 12 percent and property crime by about 10 percent over the baseline figure.

REDUCE TEEN PREGNANCY

Keeping abortion legal would prevent crime increases, but we can use the insight from the casual link between abortion and crime reduction to achieve the same ends in a better way: reduce the number of unwanted and teen pregnancies. Take the Children's Aid Society-Carrera program, which aims to reduce births to teenagers by changing their incentives. The three-year after-school program for 13-year-olds includes a work component designed to assist participants to find decent jobs, an academic component including tutoring and homework help, an arts component, an individual sports component, and comprehensive family life and sexual education. Program participants have been 70 per-

Abortion reduces the number of unwanted births, and unwanted children are at much greater risk of becoming criminals later on.

cent less likely to give birth in the three years after the program ended than members of a control group.

Again, the success of any social program designed to reduce crime requires targeting, in this case at those most likely to give birth in their teens. The groups with the highest rates of teen births are Hispanics, with a rate of 83 births per 1,000 women 15 to 19 years old, and non-Hispanic blacks, with a rate of 68 per thousand – both well above the national rate of 43. Suppose the program was expanded so that it covered half of all Hispanic and black females ages 13 to 15 – some two million girls. With a per-person cost of \$4,000, the annual outlay would be roughly \$4 billion.

Again, one would not expect a large program to be able to replicate the substantial reductions seen in the smaller program. But an initiative only half as effective in reducing teen births would still lower the birth rates of the 15- to 19-year-old participants by 35 percent. Under these assumptions, the expanded program would lead to about 40,000 fewer teen births a year – a 9 percent reduction.

Recent work by Anindya Sen enables us to quantify the expected reduction in crime from this potential drop in teen births. Sen finds that a 1 percent drop in teen births is associated with a 0.589 percent drop in violent crime years later, when the individuals born to teenagers would have reached their high-crime ages. Thus, the 9 percent reduction

in teen births would eventually cut violent crime by 5 percent. Assuming two-thirds of crime costs are attributable to violent crime, this 5 percent reduction would eventually save society more than \$14 billion per year. In other words, the benefits would be three times greater than the cost.

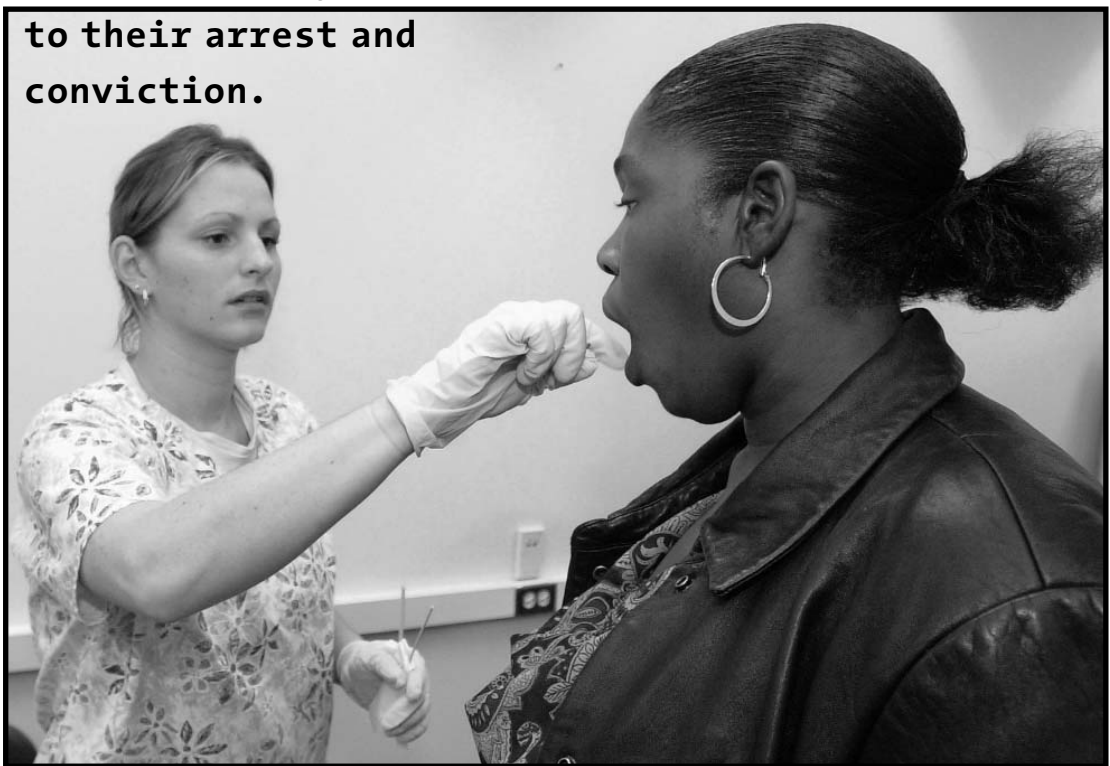
EXPAND THE DNA DATABASE

While much of the attention on the use of

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DNA in criminal justice has focused on its potential for establishing the innocence of the wrongly accused, we have not yet tapped the potential of DNA testing to deter crime. Individuals whose DNA is on file with the government know that leaving even a single hair at the scene of a crime is likely to lead to their arrest and conviction, so a major expansion in the DNA database should generate substantial crime reduction benefits. While some are concerned that the government would get information about a person's medical history, the privacy problem can be minimized. It is possible to take someone's DNA and discard all information except for the unique identifying genetic marker.

Currently, every state requires violent criminals and sex offenders to submit to DNA testing. Most states require testing for all felons and juvenile convicts. If a person is



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found innocent, his or her DNA sample must be discarded. But the United States' DNA crime-fighting system can be expanded and improved. England tests anyone suspected of a "recordable" offense, with the profile remaining on file even if the person is cleared of the crime. This has allowed Britain to build a DNA database with some two million profiles. England's Forensic Science Service estimates that, in a typical year, matches are found linking suspects to 180 murders, 500 rapes and other sexual offenses, and 30,000 motor vehicle, property and drug crimes. In other words, DNA is used to solve fully 20 percent of murders and a significant fraction of other crimes.

A more drastic – and potentially effective – approach was endorsed by Rudolph Giuliani: recording the DNA of every newborn. One way to lower the costs of the project without eliminating much of the gains would be to test only males, who are far more likely to commit crimes.

To improve the effectiveness of the policy, however, it would be necessary to test every male – not just male babies. This would increase the start-up costs to \$15 billion (although thought should be given to the appropriate age cutoff – say age 50 – as a plausible cost-reduction measure). In every year thereafter, however, it would be necessary to test only newborns. In 2002, there were a little more than 2 million male births in the United States. So testing every male infant would cost about \$200 million annually.

One particular crime-deterrent benefit of having the DNA of every male on file is it would be likely to drastically reduce rapes by strangers. Let's assume (conservatively) that half of all such rapes – half of 56,000 a year – would be deterred by the existence of a complete DNA database. Ted Miller, Mark Cohen

and Shelli Rossman added the costs of medical bills, lost productivity, mental health trauma and quality of life changes, to estimate that the average rape costs \$90,000. Hence, 28,000 of the rapes by strangers in 2002 cost society about \$2.5 billion. While the costs of testing every male – \$15 billion in the first year – would exceed the \$2.5 billion in benefits in reduced rapes from such a plan, the total benefits from rape reduction alone would exceed the costs in roughly seven years (and perhaps less if the initial testing were limited with a judicious age cutoff). Note, moreover, that stranger rapes are only one of many classes of crimes that would see sharp declines with such expansive DNA testing.

WHAT WE ARE LOSING

Few of these proposals seem likely to be adopted any time soon. Former attorney general John Ashcroft stressed incarceration and the death penalty as principal crime-fighting tools, and President Bush's new attorney general, Alberto Gonzalez, appears wed to an even tougher line. Bush seems intent on shrinking the budget for police and early-intervention social programs. The NRA continues to have success in fighting even the most sensible gun control policies. And few in either political party are willing to discuss the legalization of drugs or a major expansion in the DNA database. The politicians in power thus seem stuck on anti-crime policies that guarantee that crime levels will be far higher than can be justified by any reasonable comparison of costs and benefits – let alone respect for life and property.

Adopting the policies set out above would reduce crime in the neighborhood of 50 percent, saving thousands of lives annually and avoiding crime victimization for millions more. Is anybody in Washington, or the state capitals, listening? **M**