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National Institute of Justice



Perspectives on Crime and Justice: 2000–2001 Lecture Series



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National Institute of Justice



**Perspectives on
Crime and Justice:
2000–2001 Lecture Series**

*Alfred Blumstein
Laurence Steinberg
Carl C. Bell
Margaret A. Berger*

March 2002

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National Institute of Justice

Sarah V. Hart

Director

The National Institute of Justice is the research and development branch of the Department of Justice. NIJ's *Perspectives on Crime and Justice Lecture Series* is part of its Professional Conference Series, which supports exchanges between researchers and practitioners through conferences, workshops, planning and development meetings, and other support to the criminal justice field.

The *Perspectives* series features speakers from a broad cross-section of the criminal justice field who are invited to speak on topics of interest to them. The lecture series was developed to foster dialogue among criminal justice professionals and to promote further research in the field. The Research Forum publication series, of which this publication is a part, was designed to share information about the *Perspectives* series and other forms with a larger audience.

The opinions expressed in this publication are those of the presenters and other persons attending the *Perspectives* lecture forums. As such, they do not represent the official positions of the U.S. Department of Justice.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime.

Preface

The National Institute of Justice (NIJ) is the research and development arm of the U.S. Department of Justice. NIJ's *Perspectives on Crime and Justice Lecture Series* is an opportunity for policymakers and researchers to pause, reflect, and engage in discourse on the best research about crime and justice issues. Through this series, NIJ continues to present discussions by some of the Nation's most distinguished scholars representing criminology and related disciplines.

In 2001, Alfred Blumstein discussed the perceived drop in our violent crime rate, which he noted may be the beginning of a continuing decline, the start of a new increase, or a plateau. Laurence Steinberg discussed concerns about the way the criminal justice system identifies and treats adolescent serious offenders. Carl Bell pointed out the varieties and types of violence and discussed basic strategies for violence prevention. Margaret Berger's lecture underscored the tremendous and far-reaching impact of DNA evidence.

The lectures in this volume follow a rich tradition of inquiry and enlightenment on crime and justice issues. They are intended to raise the level of discourse and promote dialogue and interest in new areas of research. I hope you enjoy these thoughtful and thought-provoking discussions.

Sarah V. Hart
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Why Is Crime Falling—Or Is It?

Presentation by

Alfred Blumstein

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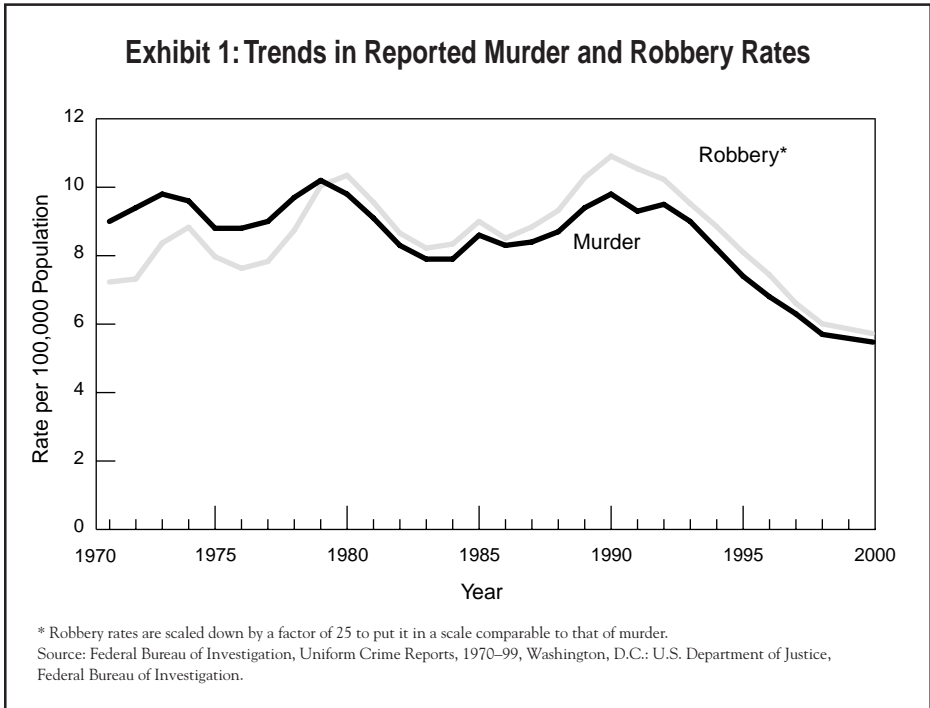
February 14, 2001

Washington, D.C.

The Recent Crime Drop

To those who worry about crime in the United States, the period from 1993 through 1999 was a welcome relief. We witnessed a steady drop in crime rates to a level lower than we have seen for more than 30 years. My presentation focuses on violent crime, primarily homicide, because it is so serious. It also is the most reliable and consistently measured crime and is highly correlated with many other aspects of crime. Between 1993 and 1999, the U.S. homicide rate dropped by an impressive 40 percent to a level of 5.7 per 100,000 population, a rate not seen since 1966. This almost brings the United States into the range of some of the countries in Western Europe.

Exhibit 1 presents homicide and robbery rates from 1972 through 1999. These two types of violent crime track each other closely. Both homicide and robbery declined between 1993 and 1999.



These current favorable trends, however, cannot continue indefinitely. We should try to identify the factors that contribute to the downward trend and, as those effects are saturated, determine whether the downward trend will flatten or, because of other factors, reverse.

Whenever crime rates decrease, there are usually claims of both credit (e.g., “it’s a result of my administration’s policy of . . .”) and explanation (e.g., “demographic shift”). Television newscasters always look for a single explanation and are particularly troubled when more than two mutually supportive factors come together. I recently co-edited with Joel Wallman *The Crime Drop in America*,¹ which addresses the multiple factors that together contributed to the crime drop, including the waning of crack markets, the strong economy, efforts to control guns, intensified policing (particularly in efforts to control guns in the community), and increased incarceration.

Aggregate Trends

Exhibit 1 shows that from the 1970s to the mid-1990s, the homicide rate oscillated in the fairly narrow range of 8 to 10 per 100,000 population. Only recently has this rate declined below 8. The peak in 1980 probably was a demographic peak because baby boomers reached the high-crime ages of the late teens and early 20s in the 1970s and moved beyond those high-crime ages in the 1980s.

There was a trough in 1985, followed by the homicide epidemic in the late 1980s and early 1990s. Then, following a peak in 1991 and a slightly lower peak in 1993, the homicide rate declined to its lowest point in 1999, the latest year for which the Federal Bureau of Investigation (FBI) published data in the Uniform Crime Reports (UCR).

Age Differences

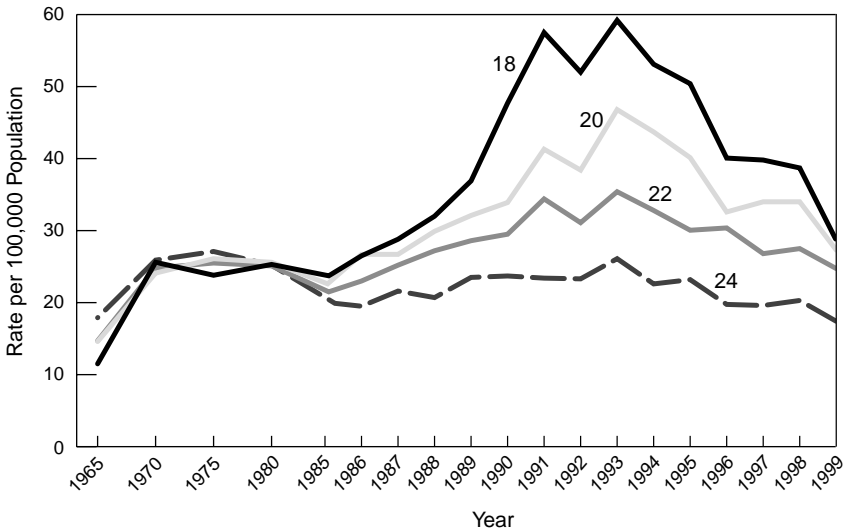
This aggregate picture requires various types of disaggregation if we are to isolate the important factor differences that are masked when looking at only the aggregate. For demographic factors, arrest information is studied because only the demographics of those who get arrested are known. Exhibit 2 is the first step in that disaggregation, where we begin to examine the homicide arrest rate trends for individual ages in the traditional peak range of 18 through 24. There was a clear rise among all ages between 1965 and 1970, followed by a period of reasonable stability from 1970 through 1985; the flatness of the 18 to 24 peak is reflected in the fact that the lines for the individual ages are mixed together and cross one another. That flat period runs through the 1980 peak in the aggregate rate shown in exhibit 1, again suggesting that the 1980 peak was primarily a consequence of changing demographic composition rather than changes within any particular age groups.

Beginning in 1985, we start to see a major divergence across ages, even in this narrow age range of 18 through 24. By 1993, the 18-year-olds had more

than doubled their rates, and 24-year-olds showed no growth at all. Those younger than 18 showed a growth pattern similar to that of the 18-year-olds, more than doubling their rates between 1985 and 1993. These annual growth rates were impressively high, in the range of 10 to 20 percent per year for all ages under 21. After the 1993 peak, we saw a comparably impressive decline in these ages; by 1999, they were roughly back to their 1985 levels.

In contrast to this remarkable growth and decline in homicide arrest rates among the younger ages, the rates for people older than 24 showed no growth; in fact, their rates have steadily declined since 1975.

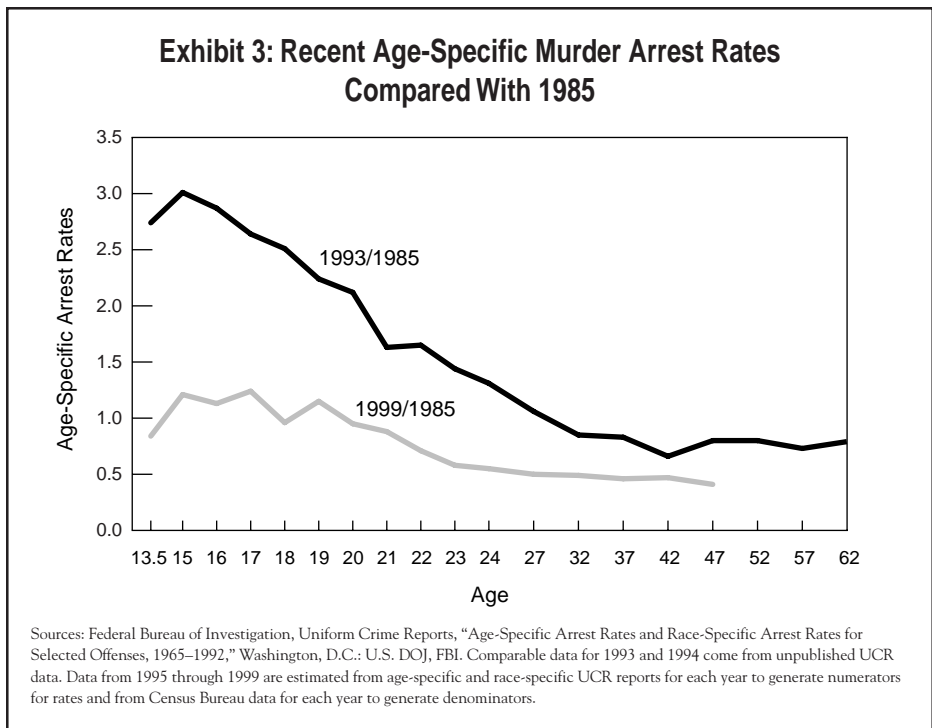
Exhibit 2: Trends in Murder Arrest Rates for the Peak Ages of 18–24



Sources: Federal Bureau of Investigation, Uniform Crime Reports, "Age-Specific Arrest Rates and Race-Specific Arrest Rates for Selected Offenses, 1965–1992," Washington, D.C.: U.S. DOJ, FBI. Comparable data for 1993 and 1994 come from unpublished UCR data. Data from 1995 through 1999 are estimated from age-specific and race-specific UCR arrest reports for each year to generate numerators for rates and from Census Bureau estimates for each year to generate denominators.

These trends are summarized in exhibit 3, which shows two important lines. The upper line reflects the growth period of 1985 to 1993; the lower line reflects the decline or recovery period, which was from 1993 to 1999. Each line depicts for each age the ratio of the age-specific arrest rate for murder in 1993 (the upper line) and in 1999 (the lower line) to the rates that prevailed in 1985. Ratio values greater than 1.0 (denoted by the thick black line) represent an increase in the rates; points below 1.0 represent a decrease. The upper line portrays the ratio reached in the peak year, 1993, and the lower line portrays the degree to which the ratio had declined by 1999.

The arrest rate for 15-year-olds in 1993 was triple the rate in 1985. The growth rate was less for older teens, but it was still more than double the



1985 rate for all those age 20 and younger. In contrast, for those age 30 and older, 1993 rates were actually about 20 percent lower than 1985 rates.

The trend line depicting the 1999:1985 ratio is well below that for 1993, and the greatest decline occurred among younger people. For the first time since 1993, young people's rates in 1999 were roughly back to their 1985 levels—about 20 percent below for the 14- to 17-year-olds and about 20 percent above for the 18- to 22-year-olds. To the extent that the 1985 rates, which are those that prevailed from 1970 through 1985, represent a stable level that is not easily penetrated, that finding may suggest that the current approaches—having finally undone the effects of the 1985 to 1993 rise—may have reached their limits, and we may need to consider different approaches if we are to move significantly below that level for these young people. The positive effects of current approaches—including expanded afterschool programs, conflict resolution, and job skill training—on young people may have reached their limit, and we may have to consider other prevention strategies.

The homicide rates for older people have seen a continuing decline since the mid-1970s. By 1993, rates for people older than 30 had declined about 20 percent from 1985 levels, and by 1999 they had declined another 20 percent to a level that is about 40 to 60 percent of their 1985 level.

The differing patterns for younger and older groups underscore the importance of examining each age group's role in explaining the trends in the aggregate homicide rate since 1985. The aggregate rates shown in exhibit 1 grew to their 1991 peak solely because the rates of the younger people were increasing faster than the rates for the older people were declining. Between 1991 and 1993, the rise for younger people had generally flattened out (as reflected in the pattern for the 18-year-olds in exhibit 2), and so the rate of decline seen in the older ages began to dominate the aggregate rates. Since the rates of both young and old were decreasing after 1993, the aggregate rate continued to fall.

In sum, the increase in the level of homicide in the United States during the growth period of the late 1980s and early 1990s was due entirely to the trends in the younger age groups; homicide rates for those age 25 and older did not increase. However, the decrease since 1993 is due to both the recent sharp drop in offending among young people and the continuing decline in offending among older persons. Even though they commit homicide at lower rates, the contribution of the older age groups to the recent decline in the aggregate homicide rate may be appreciable because of their large numbers. For example, in 1980 and 1985, people older than 30 accounted for about 30 percent of the homicides, but by 1993, their contribution declined to only 22 percent, partly because of the growth in the contribution of the younger offenders and partly because older people were committing fewer homicides. By 1999, their contribution increased to 24 percent, driven largely by the sharp decline in the rates for younger offenders after 1993.

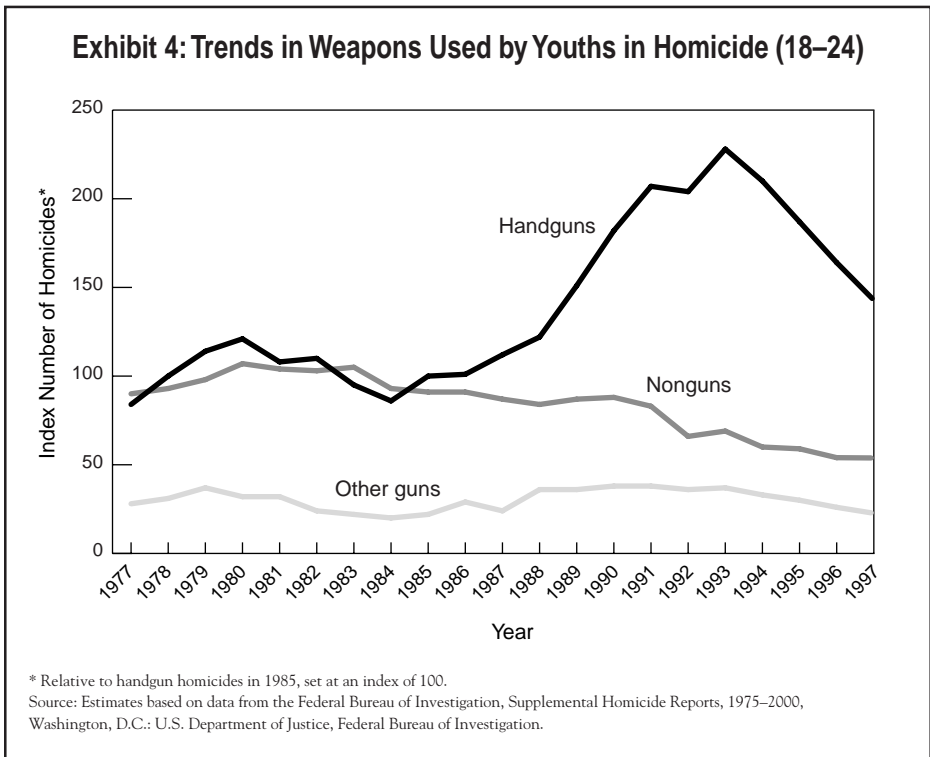
Explanations of the homicide decline must differentiate between the factors that are responsible for the long-term fall in homicide rates among the older adults and the ones causing the post-1985 rise and the more recent drop in homicide offending by the younger groups. Those two explanations are likely to be different.

The Role of Weapons

Young people experienced a major growth in the use of handguns in homicide after 1985. Exhibit 4 displays the number of homicides—relative to the number of handgun homicides in 1985, which is set to an index of 100—in each year with three types of weapons: handguns, other guns, and weapons other than guns. The exhibit focuses on the weaponry used in homicides by youths between the ages of 18 and 24, using data from the Supplementary Homicide Reports (SHR), compiled by the FBI, of factors associated with individual homicide events. Before 1985, there was some oscillation, but no clear trend. But between

1985 and 1993, there was an increase of more than 130 percent in homicides committed with handguns, with no marked change in the number of homicides committed with long guns and about a 50-percent decrease with nonguns. This suggests that handguns were partly a substitute for nongun weapons (e.g., knives) and caused more homicides that, if handguns had not been used, may have been merely assaults. The decline started in 1994 and, by 1997, had decreased to about only a 50-percent increase over 1985.

Handgun homicides committed by juveniles younger than 18 *quadrupled* between 1985 and 1993, with a doubling in the number of long-gun homicides and about a 20-percent decrease in the number of nongun homicides. By 1997, the number of handgun homicides had decreased sharply to about



80 percent below the 1993 rate. There was no such increase in the number of handgun homicides committed by 25- to 45-year-old adults; that age group displays a downward trend that accelerates after 1991 and reaches a level about 60 percent of the 1985 level in 1997.

A major change occurred after 1985; young people were acquiring handguns in alarming numbers. Older people may have had more handguns during this period, but they appear to have exercised greater restraint in their use.

It is widely recognized that teenage males are poor dispute resolvers; they have always fought to settle their disputes. When they fight with fists, the conflict evolves relatively slowly; the loser will eventually find a way to withdraw or a third party, observing the incident, has time to intervene. The dynamics are extremely different when a handgun is present; the conflict escalates well before anyone can retreat or intervene. Once handguns become prevalent in a neighborhood, each person who carries one has an incentive to make a preemptive strike before his adversary does.

Between 1985 and 1993, the weapons involved in settling young people's disputes changed from fists and knives to handguns—and more recently, to semiautomatic pistols, which have much greater firepower and lethality. The growth in lethal weaponry is reflected in the changes in the weapons used in homicides committed by different race and age groups. Beginning in 1985, there was a sharp growth in the firearm homicide death rate among young people (those in their early 20s and younger; youths [ages 18–24], especially juveniles [under 18 years old]; but not among adults [ages 25–45]) that changed a flat trend to a sharply rising one, with the rise sharpest for young ages. At the same time, the shift was much smaller for the number of homicide deaths due to means other than handguns.

The decline in the number of handgun homicides almost mirrors the rise. Following the peak in 1993, the rate of decline was steepest for juveniles; it

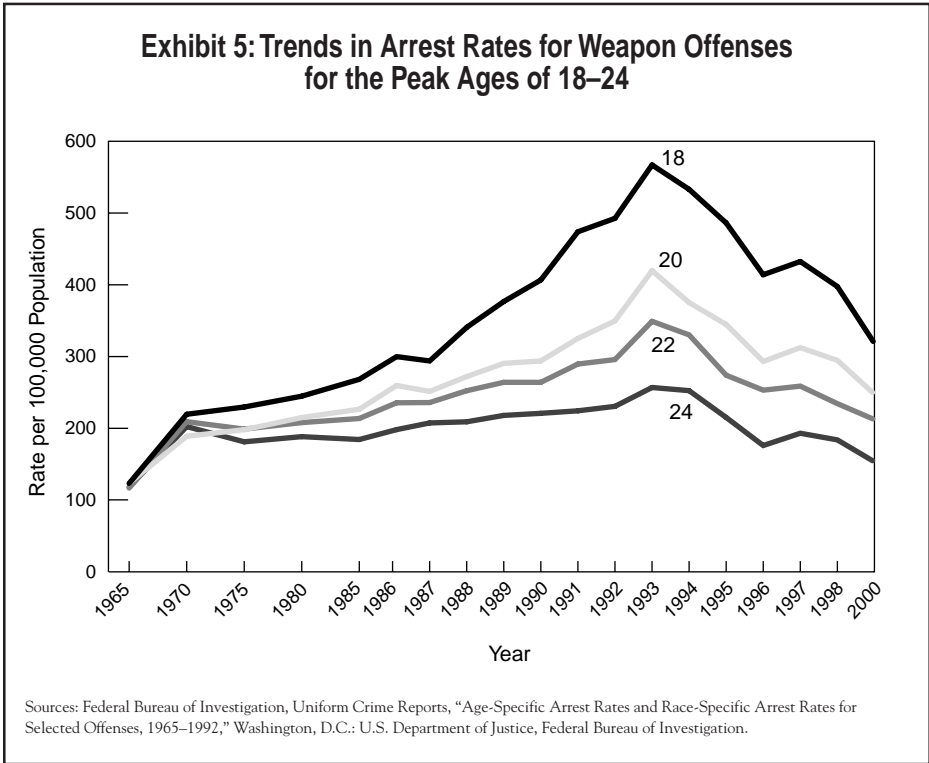
was less steep for youths. Adults, whose rate displayed no peaking, nevertheless showed a steady decline of almost 40 percent after 1993. These data end in 1997, two years before the age-specific homicide arrest rates reached the 1985 level, and one can speculate that their decline continued until at least 1999.

The increase in suicide weapons-specific death rates before 1993 was similar to that of homicide death rates. Following a period of generally flat rates, the rate of suicide by firearms increased sharply after 1985, but the rate of suicide by other means did not change. This shift was especially marked in suicides of black youth and juveniles, whose suicide rate had previously been markedly lower than that of whites.²

These observations suggest that the growth in homicide committed by young people was more attributable to the weapons they used than to the emergence of inadequately socialized cohorts of “superpredators,” as some observers claimed during the period that saw such an increase in the number of homicides. If the cohorts were indeed more vicious, then one would expect to see a growth in homicides by all forms of weaponry rather than by only handguns. The findings strongly suggest that teenagers had disputes as they always had, but that the availability and lethality of handguns, and later semiautomatic pistols, resulted in an increase in homicides.

The steady decline in handgun homicide rates after 1993 is consistent with the decline in youth-perpetrated homicide rates shown in exhibit 2. The pattern in handgun use is also reflected in exhibit 5, which depicts the time trend in the rates of arrests for weapon possession at various ages. This pattern is also similar to the homicide patterns depicted in exhibit 2. Weapon arrest trends show a distinct peaking in 1993, followed by a clear decline.

Changes in the rates of weapon arrests result from a combination of changes in the illegal carrying of weapons and changes in police aggressiveness in pursuing illegal weapons. Exhibit 5 shows a considerable growth in weapon possession



among young people during the late 1980s. Police also became more concerned about weapons, especially in the hands of young people. That combination is reflected in the rise in weapon arrests, which peaked in 1993. There is no indication of any diminution in police aggressiveness in pursuing young people with guns after 1993, so the decline after 1993 is likely due more to a reduction in the carrying of guns than to a slackening of police efforts to capture the guns. This reduction in carrying seems to have been an important factor contributing to the decrease in homicides after 1993.

Thus, we have clear indications from SHR data on weapons used in homicides and weapon arrests that there was a significant decline in the use of handguns by young people after 1993. It is difficult to sort out all the factors

that contributed to that. One important contributor was the aggressive stop-and-frisk tactics used by local police, especially in many large cities. Community groups in many cities also took an active role in negotiating truces among gangs and seeking to establish norms that precluded the carrying of guns.

Important Federal initiatives also are likely to have contributed to the decline. The Brady Handgun Violence Prevention Act (P.L. 103–159), which requires a 5-day waiting period for a background check for any person who wants to buy a gun from a licensed dealer, became effective in 1994, the first year of the decline. The denial rate under the Brady Act has been reported at 2.4 percent of those who apply to purchase a gun.³ Uncertain is the degree to which these individuals simply accepted the denials or resorted to one of the many loopholes left open by the Brady Act: purchasing a gun at a gun show, buying one from a private individual, hiring a straw purchaser to buy it, stealing it, or using any of the other means left open to a determined illegal purchaser.

There are also approaches by the Bureau of Alcohol, Tobacco and Firearms (ATF) to identify dealers and individuals disproportionately involved in the sale or purchase of “crime guns.” ATF tries to trace back to the original dealers guns seized by law enforcement. Such efforts may lead not only to deterring inappropriate handgun transactions but to making guns harder to obtain.

All these efforts have a mutually reinforcing effect. A reduction in the carrying of handguns, because of either the threat of confiscation or the difficulty in acquiring them, would lead to a reduced incentive for others to carry, thereby reducing the likelihood of handgun homicides, especially among the young people for whom it was so deadly.

The Role of Drug Markets

One important factor that has affected criminality throughout the 1980s and 1990s has been the problem of drug abuse and drug markets. In a survey conducted in 1991, 32 percent of prisoners reported using cocaine or crack regularly and 15 percent used heroin or opiates regularly. At the time of the offense that led to their imprisonment, 14 percent were using cocaine or crack. These numbers were appreciably higher than those reported in a similar survey conducted 5 years earlier.⁴ These are much higher rates than one finds in general population samples (e.g., the National Institute on Drug Abuse household surveys), which strengthens the importance of a connection between drug use and crime rates.

Paul Goldstein developed a useful taxonomy of the drug-crime connection composed of three components other than the sale or possession of the drugs themselves:

- Pharmacological/psychological consequences. The drug itself causes criminal activity (most notably, the connection between alcohol and violence).
- Economic/compulsive crimes. Drug users commit crimes to get money to support their habit.
- Systemic crime. Crimes are committed as part of the regular means of doing business in the drug industry (including violence as the accepted way to solve disputes between competing sellers or as retribution between a seller and a buyer as a result of renegeing on a drug deal).⁵

There is a fourth, more broad connection that should be considered: the community disorganization caused by the drug industry and its operations, including the manner by which the norms and behaviors in the drug industry, which can pervade some communities, influences the behavior of others

who have no direct connection to that industry. For example, the widespread prevalence of guns among drug sellers can impel others in the community to arm themselves to similarly defend themselves, to settle their own disputes even if they do not involve drugs, or to gain respect.

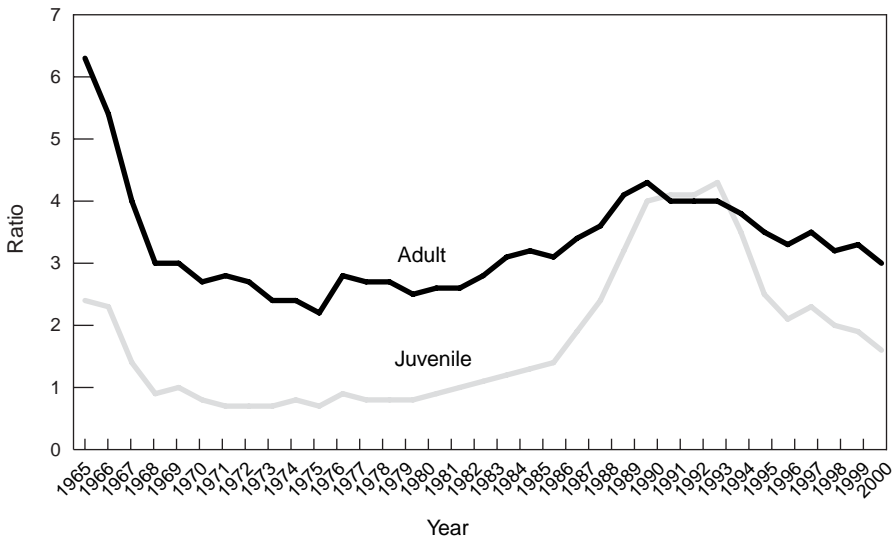
The problem of crack cocaine emerged in the early 1980s and accelerated significantly in the late 1980s. One indication of this growth lies in the rate of arrests of adults for drug offenses, which, especially for nonwhites (primarily blacks) started to increase in the early 1980s and accelerated appreciably after 1985 with the wide distribution of crack, especially in low-income urban neighborhoods. The steady growth in drug arrests of nonwhite adults compared with those of white adults is reflected in exhibit 6, which depicts the ratio of nonwhite-to-white drug arrests for both juveniles and adults.

The trend for juveniles is strikingly different. Throughout the 1970s, the arrest rate for nonwhite juveniles was below that of whites (the ratio is less than 1:1). Starting in 1986, however, their rate grew rapidly, reaching a rate four times that of whites during 1989–92, then began a steep decline to about 50 percent above the white juvenile rate in 1999. This pattern shows that the major recruitment of nonwhite juveniles into the drug markets did not begin until the distribution of crack became widespread in about 1985.

Exhibit 6 provides important information linking some earlier observations about the rise in homicides committed by young people and the role of guns in that rise. Three major increases—more than a doubling—occurred in the short period between 1985 (the beginning of the involvement of young people in drug markets) and 1993 (the peak year of youth violence):

- Rates of homicides committed by youths age 20 and younger, with no growth for adults 25 and older (exhibit 3).

Exhibit 6: Trends in the Ratio of Nonwhite Juvenile and Adult Drug Arrests to White Juvenile and Adult Drug Arrests



Note: The values are the ratio of nonwhite arrest rate to white arrest rate for drug offenses. A ratio above 1:1 indicates that nonwhites have a higher arrest rate than whites, and a value less than 1 indicates that whites have the higher arrest rate.

- The number of homicides those younger than 25 commit with guns, with no growth in nongun homicides (exhibit 4).
- The quadrupling of the arrest rate of nonwhite juveniles on drug charges compared with white juveniles (exhibit 6).

One explanation for this dramatic combination of changes involves a process that is driven by illegal drug markets, which appear to operate in conjunction with the demand for drugs despite massive efforts during the past two decades to attack the supply side. In the late 1980s, the illegal drug trade recruited juveniles because they were willing to work more cheaply than adults, were

less vulnerable to the punishments imposed by the increasingly punitive adult criminal justice system, and were willing to take more risks than adults. The rapid growth in the demand for crack required more sellers—many new users used crack because they could buy one hit at a time, unlike powder cocaine, which was not sold in small quantities—and encouraged the market to find its labor supply wherever it could. Furthermore, recruiting juveniles was the market's means of replacing the large number of adult drug sellers who were being incarcerated during the 1980s. The economic plight of young urban black juveniles, many of whom saw no other comparable route to economic sustenance at the time, made them particularly responsive to the lure of employment in the crack markets.

Because crack markets were run as street markets, especially those operating in inner-city areas, the participants were especially vulnerable to attack by robbers who targeted their sizable assets, either the drugs or the money from the sale of drugs. Calling the police for protection was not an option, so participants in those markets, including recruited juveniles, were likely to carry guns to protect themselves and solve disputes. Once these juveniles started carrying guns, other teenagers who were not involved in the drug markets but went to the same schools or walked the same streets also were more likely to arm themselves. These teenagers felt they needed guns for their own protection, but they also may have believed that weapon possession was a status symbol in the community. This initiated an escalating arms race: As more guns appeared in the street, there was an increased incentive for individuals to arm themselves. In light of the much tighter networking of teenagers than of older people, that diffusion process could proceed quickly. The emergence of teenage gangs—some involved in drug markets—in many cities at about this time contributed to that diffusion.

In view of the recklessness and bravado that often characterize male teenagers and their low skill level in settling disputes other than through the use of physical force, many of the fistfights that would otherwise have taken place

escalated into shootings as a result of the presence of guns. This escalation in violence can be exacerbated by the problems of socialization associated with high levels of poverty, high rates of single-parent households, educational failures, and a widespread sense of economic hopelessness. Not until they reach their mid-20s do they develop some prudence, become more cautious even if they are armed, and display greater restraint.

This hypothesized diffusion process⁶ has been tested further with city-level data on juvenile arrests for drugs and homicides, taking advantage of the fact that drug markets flourished at different times in different cities, such as in the mid-1980s in New York and Los Angeles and later in smaller cities. Daniel Cork⁷ has shown the connection between the rise in handgun homicides and the recruitment of juveniles into crack markets. Using an epidemic model originally developed for marketing literature, Cork identified—in individual cities—the time when juvenile arrests for drugs began to accelerate and the corresponding time when juvenile homicide arrests increased. He found most typically a 1- to 3-year lag between the two, with homicides following involvement in drug markets. These results are consistent with the hypothesis that the rise in juvenile homicides was attributable to the diffusion of guns from young people recruited into drug markets to their friends and beyond. His analysis of individual cities also showed that crack markets generally emerged first in the largest coastal cities, especially in New York and Los Angeles, and then appeared in Middle America and smaller cities. Thus, the observed patterns in the rise of homicide committed by young people with handguns are highly consistent with explanations that assign central importance to the rise and decline of crack markets in the United States.

The fall-off in the nonwhite/white drug-arrest ratio (exhibit 6) in the 1990s is a reflection of the changing tastes for crack, especially in urban neighborhoods. As recognition of its deleterious effects became widespread, word spread through the streets that crack was an undesirable drug, and this

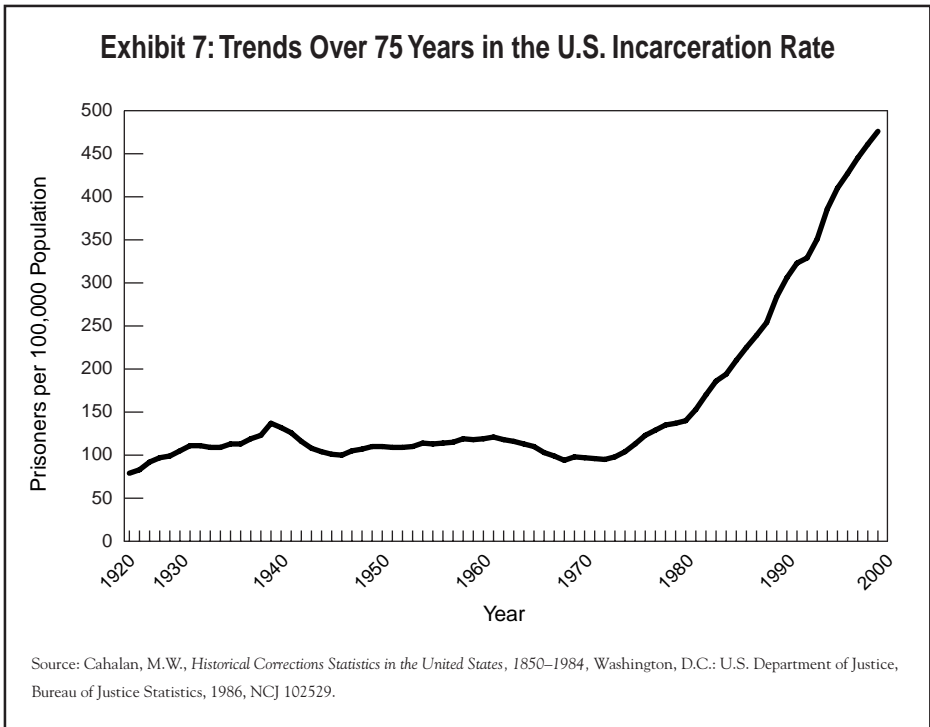
wisdom had a major effect on diminishing the number of new users.⁸ This contributed to a major reduction in the need for street sellers. As a result, the nonwhite juvenile sellers, who had been important participants in those street markets, were no longer needed. Older users continued to be major crack consumers, but their demand could be served more readily by individual delivery, thereby diminishing the need for street markets. All these changes contributed to a decline in street markets, the recruitment of juveniles, and handgun possession by young people following the 1993 peak.

One important contributing factor to the decline in violence as crack demand ebbed has been the strength of the U.S. economy during the past decade. If there were no legitimate jobs for young people, it is reasonable to anticipate that they would have found other criminal activity to provide economic sustenance. But the abundance of job opportunities, including those not requiring high skill levels, provided legitimate alternatives. Individuals in legitimate jobs have a strong incentive to conform and avoid criminal activity. This should indicate the desirability of finding approaches that bring young people into the legitimate economy through appropriate training to develop legitimate employment opportunities.

Incarceration

The United States has gone through a dramatic transformation in its sentencing policies and practices in the past 25 years. As shown in exhibit 7, the United States maintained an impressively stable incarceration rate (prisoners per capita) of about 110 per 100,000 population during the 50-year period from the early 1920s to the mid-1970s,⁹ when it suddenly grew exponentially at a rate of about 6 to 7 percent per year. The rate is currently more than four times the previously stable rate.

Various attempts have been made to correlate the rising incarceration rate with the crime rate. The most aggressive of those analyses use the period after

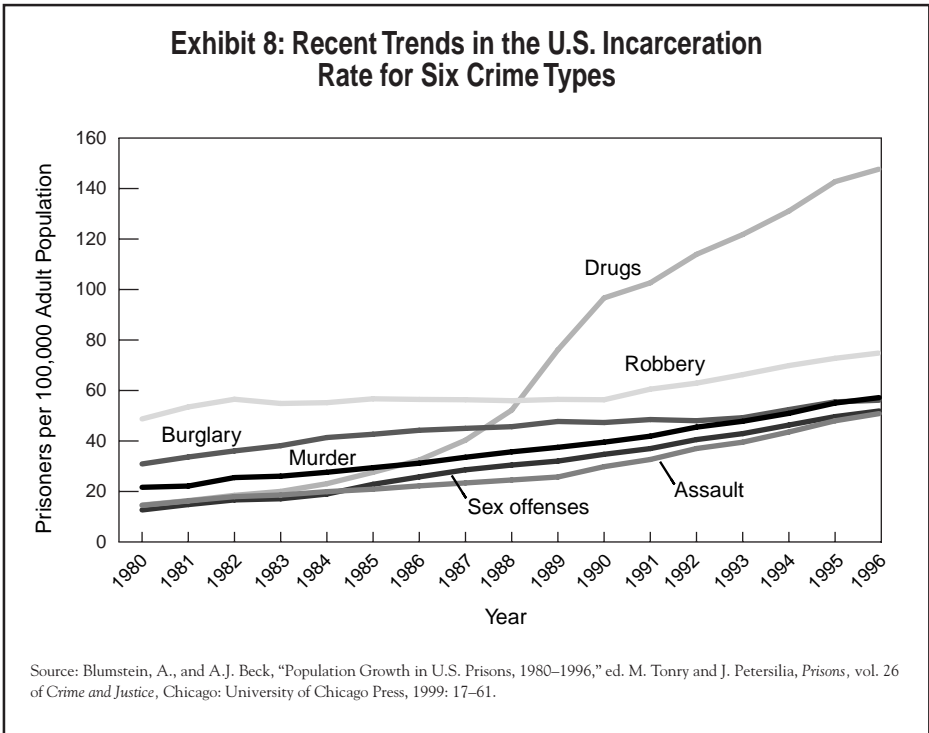


1991—they argue that the crime rate has been steadily decreasing because the incarceration rate is increasing. But such simplistic attempts to estimate the incarceration effects on crime are likely to be misleading. For example, the analysis must also account for the period in the late 1980s when crime was increasing at the same time the prison population was growing.

Attributing the decline to incarceration is far more tenable if one focuses on older offenders, whose homicide rates have declined steadily since the mid-1970s. This group is the appropriate focus for estimating the incapacitative effect of incarceration (i.e., crime is reduced because offenders are removed from the streets). One can appreciate that the incapacitation effects were an important contributor to the continuing decline of violent crime rates among

older people, especially for those over 30, who displayed about a 40- to 60-percent drop in homicide rates between 1985 and 1999 (exhibit 3). This connection is particularly appropriate because 32 is about the median age of State prisoners.

One of the contributors to the growth in incapacitation is the large number of drug sellers who have been sentenced to prison in the past two decades. Exhibit 8 shows the growth in incarceration from 1980 through 1996 by crime type. The greatest growth—by a factor of more than 10—was among drug offenders. Ironically, their incarceration did not have a major impact on the drug trade because others, particularly younger sellers, replaced them. But if they would have engaged in violence on the outside, their incarceration



could have contributed to the decline in violent crime rates. The incapacitation effect, however, is at least partially negated by violence committed by the replacements. Indeed, because many replacements were young people, who have a greater propensity for violence, the net effect may have been an increase in violent crime, undoubtedly a factor that must be considered when discussing the rise in violence of the late 1980s.

Even if drug offenders' incarceration contributed to the reduction in homicide, it is not clear whether imprisoning them was an efficient use of fiscal or prison resources. As the prison population grows, marginal offenders are likely to have a lower offending frequency (λ) than those who were already incarcerated.¹⁰ A sizable but unknown fraction of drug offenders who are incarcerated (comprising more than 20 percent of State prisoners and more than 60 percent of Federal prisoners) are predominantly entrepreneurs rather than generic criminals, and they are not likely to be violent.

Incarceration effects are far less likely to have been a significant factor in the more recent decline in violent crime rates among teenagers and youths, and most likely were limited to older youths, whose risk of incarceration is greatest. In addition, levels of violence have fallen in the younger age groups in recent years even as their risk of incarceration has increased. The decline might have been less steep in the absence of the "get tough on juveniles" sentencing policies enacted in recent years. But it seems more likely that the other factors considered in this paper—the reduction in the use of guns, changes in the drug markets, and the growing number of legitimate job opportunities—have had more dominant effects.

In *The Crime Drop in America*, William Spelman and Richard Rosenfeld derived estimates of the contribution of incarceration to the crime drop of the 1990s. Spelman¹¹ used general elasticity estimates (percentage reduction of crime resulting from a 1-percent increase in the prison population) from the literature and estimated that the crime reduction is associated with steady

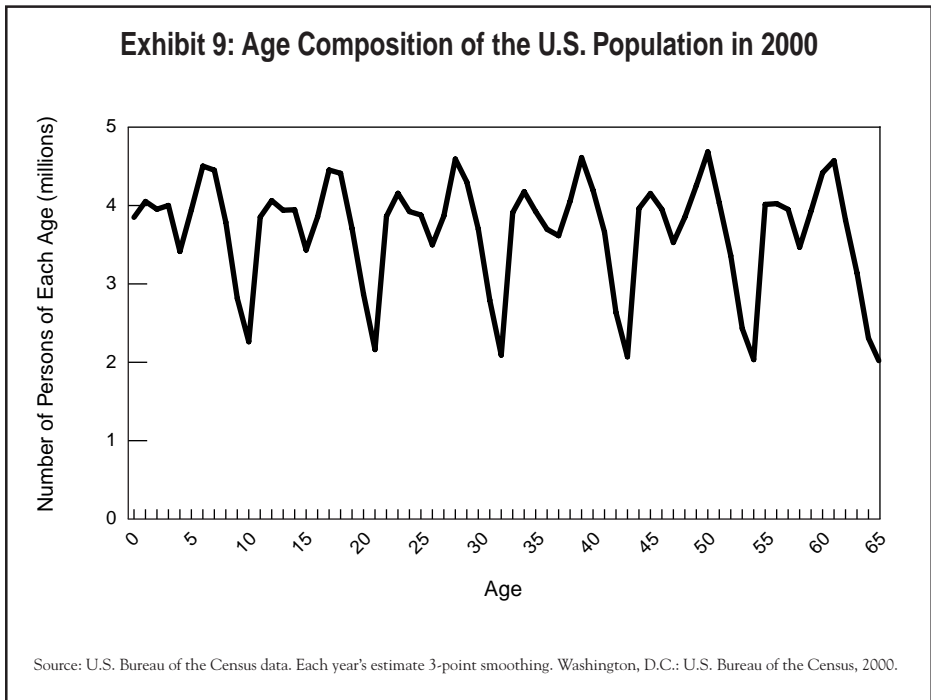
growth in the prison population. Rosenfeld¹² used estimates of prisoners' offending frequency (λ) based on homicide rates in the most disadvantaged neighborhoods of St. Louis and Chicago and estimated that prisoners would commit 150 homicides per 100,000 prison population. Both were crude estimates, and they used very different approaches, but both estimated that incarceration contributed about 25 percent of the crime drop, leaving 75 percent to other explanations.

Changing Demographic Composition

Much of the speculation about the recent decline in homicide rates attributes it to changing demographics. This may be a holdover from the realization that much of the decline that began in 1980 was attributable to a demographic shift as the baby-boom generation outgrew the high-crime ages.¹³ Those same demographic effects were not at work in the early 1990s, since demographic effects do not always move in the same direction.

The decline after 1980 was significantly affected by the shrinking size of the cohorts in the high-crime ages—late teens and early 20s. In the late 1990s and currently in the United States, those cohort sizes are growing. Exhibit 9 depicts the age distribution of the U.S. population in 2000. It is evident that the smallest age cohort under 40 is about 24 (those born in 1976). Each of the youngest cohorts is larger than its predecessor until the peak at age 9. Thus, if age-specific crime rates are to remain constant for teenagers, the aggregate crime rate should be increasing as a result of the larger cohort sizes.

These age-composition changes are relatively small, with cohort sizes growing at a rate of about 1 percent per year. Even disaggregating the composition by race reveals a similar pattern: Both whites and blacks have their smallest cohort at about age 24 in 2000, but the rate of growth of the younger black population is about 2 percent per year. These demographic trends are small compared with the much larger annual swings in the age-specific crime rates,



as much as 10 to 20 percent per year growth in the 1980s (16 percent per year for 18-year-olds from 1985 to 1991) as well as decreases in the 1990s (6 percent per year for 18-year-olds from 1991 to 1998).

Some Observations

The sharp rise in violence by young people during the late 1980s and the correspondingly sharp decline in the 1990s are striking. The increase in the aggregate homicide rate was due to escalating rates among juveniles and youths, predominantly (although not exclusively) by and against black males, particularly in larger cities and exclusively involving handguns. By 1999, the rate of homicide perpetrated by youths finally returned to the stable rate that prevailed from 1970 through 1985.

Although the causes of the rise in violent crime are reasonably clear—homicides by young people with handguns, mostly as a result of diffusion out of drug markets—the factors contributing to the decline are more complex. Various forces are involved, some more salient in certain places. They include efforts by local police, communities, and Federal agencies to separate young people from their guns. Those efforts have been helped considerably by the waning of crack markets, especially the diminished participation of young people in those markets. As an alternative, the robust economy has provided legitimate job opportunities for them, which has created incentives to avoid illegal activities.

The changes in drug markets also help account for the variation in the timing of the peaks and declines in rates of violence across cities. Large coastal cities such as New York and Los Angeles, where crack took hold earlier and violent crime rates peaked sooner than in other cities, were expected to—and did—experience a drop in homicide rates sooner than other cities. The effects of drug markets also directs attention to the population groups in which the changes in homicide were concentrated: youth, particularly black youth who did not have more attractive economic opportunities and became drug sellers at disproportionately high rates in inner-city crack markets.

For older offenders, the growth in incarceration is an important component of the explanation, although other considerations seem to be relevant. These include the widespread availability of domestic violence services, which seem to have contributed significantly to the reduction in male victimization in homicide.¹⁴

One final observation is somewhat provocative. The UCR reports for the first half of 2000 were released by the FBI in mid-December 2000. They are strikingly different from the previous 6 years in which annual decreases in crime rates of 6 to 8 percent were common. The new report estimates both crime and homicide drops of merely 0.3 percent. This could be an indication that the decrease in crime, which could not continue indefinitely, has finally

flattened out. A precursor to this estimate occurred in 1998, when homicides dropped by only 2 percent in the large cities (populations of 500,000 to 1 million and more than 1 million) when the national aggregate drop was about 6 to 8 percent. Large cities have led the rise and decline in crime rates. We cannot be certain whether this flattening is an indication of one small disruption to a continuing decline, the start of a next increase, or a plateau from which changes will require particularly innovative approaches that are quite different from the actions that have taken us to this point. Regardless, we should take advantage of the current opportunity to better understand these processes and to pursue criminal justice and community-based policies to forestall the next increase as long as possible. As we look to the future, we should be concerned both about the possibility of a resurgence of active drug markets and any violence they may bring with them and about a downturn in the economy and the impact it would have in communities in which violence is most likely to reignite.

Question-and-Answer Session

Patrick W. Murphy, American Police Association, Alexandria, Virginia: Remember what the Crime Commission said about the police? How can you forget—about [being] ineffective, inefficient, fragmented, insular, unprofessional, and not dedicated to research? Community policing has brought a small revolution in policing. In a quick-and-dirty survey, the *L.A. Times* found that the chiefs of about a dozen major cities that had experienced significant declines in murder, credited community policing. Although the debate continues about New York, there are those who say community policing has had a significant impact there, even if it has not been given the same credit by city hall or police headquarters. Police have a long way to go, but I'm encouraged that some kind of a corner has been turned, with police

focusing more on prevention and working more with the community. Would you comment on that?

A.B.: Policing has been most notable in its development and its openness. Police chiefs are remarkably astute and policing has been impressive in its readiness to try new ideas. Community policing makes so much sense at an abstract level, but when you examine its implementation at the city level, it is difficult to evaluate just what is going on. Programs vary enormously. When the COPS program began, community policing became the byword for whatever police departments wanted to do so they could take advantage of new sources of funding.

A 1999 paper coauthored with Allen Beck¹⁵ examined arrests per crime over time; for all crime categories we looked at, except for drugs—for which we did not know the number of crimes—the arrest rate per crime was flat. So, at least it casts some question about the degree to which innovation in policing has contributed to significant improvements in solving crimes. The extent that it helps solve a variety of other problems, the extent that it contributes to much better relations between the police and more highly mobilized communities, is all to the good. I've been to visit the Compstat operations in the New York Police Department. Much has been made of the technology there, but I think it is secondary to the chiefs and “wise old hands” who put precinct captains on the spot and say, “What are you doing about all this?” and get them to address the emerging crime problems with a variety of challenges and ideas. These are the places where we can see a lot of innovation.

I think police departments are ready to add operations research units, groups that will analyze the data that are now streaming in from 911 calls (which are not easily manipulated), with the data that stream in from other sources, figuring out improved tactics and improved approaches. I would hope that

funding is available to provide this kind of link between the police, who are now anxious for interesting sophisticated analysis leading to better operations, and the resources to do it.

Joanne Wiggins, U.S. Department of Education, Washington, D.C.: You talked about murder, you talked about robbery, you talked about drug arrests; you did not talk about rape, sexual assault, or domestic violence. I would issue a challenge that when we talk about “crime dropping,” it is not true to say that crime is down unless you can also say that crimes against women are down. I think we need to be careful how we make these statements because the realities of women’s lives may not be exactly like the charts you have been showing and research needs to take these disparities into account.

A.B.: I think that is an important issue. Unfortunately, our data sources, on rape particularly, are not terribly reliable in the sense that in the victimization survey, the number or rape victim sample is too low to get reliable estimates, and in police records there is too much “un-founding” (i.e., the alleged incident did not occur) going on. The category of reported rapes is subject to significant shifts in women’s willingness to report over the past couple of decades. One interesting study that came out of the work of the National Consortium on Violence Research was a dissertation by Laura Dugan that compared the association of intimate-partner homicide across cities with the degree of services (e.g., legal services, counseling services). Dugan found that the more services a city provided for domestic violence, the more good it did to reduce intimate-partner homicide, but only of one gender. And the gender that benefited from the reduction was not women, but men. The interpretation has been that increased victim services provided alternatives for women who might otherwise have killed their victimizers. So the major drop in intimate-partner homicide victimization has been for men. Dugan is revisiting the issue of domestic violence itself to gain a better understanding of the situation.

Devon Brown, Office of the Corrections Trustee, Washington, D.C.: I was delighted recently to learn that your colleague, the esteemed John DiIulio, has recently “found religion,” inasmuch as he has changed his view on the prediction that so-called “superpredators” would take over our cities. Could you share with us your view on that?

A.B.: When we saw this rise in juvenile violence, rhetoric started to flow. The “superpredator” theory argued that we are now seeing a breed of kids that is far worse in socialization, conceivably in genetics, than previously seen. A major thrust of everything I said about that rise in violent crime was that it was not different kids, it was the same kids doing what they had always done, with more lethal weaponry. The handgun became the major source of the problem when it got into the hands of irresponsible people. Violent crime was reduced not because we had changes in socialization after 1993, but because the nucleating role of the drug markets diminished. It declined because kids no longer had to carry guns and we saw a general disarmament. Another reason for disarmament was that the police were posing larger threats—taking the guns away and imposing other punishment. As we saw fewer guns in the street, the incentive to carry them was diminished. So we saw this gradual dropping away. John DiIulio has acknowledged that “superpredator” was really an inappropriate characterization. I think the essence of the data I presented today shows that it wasn’t different kids; it was the weapons those kids were carrying. These factors should stimulate everybody to work to prevent handguns from getting into the hands of irresponsible people. There are many ways we can do that without significantly inconveniencing the large number of responsible people who have every right to have handguns legally. These include tracing guns, as ATF does to see where those guns are coming from; identifying dealers who are major sources of guns used in crimes; and restricting gun purchases to one gun per month to inhibit aggressive marketers. Federal laws will be necessary to ensure that one State is not vulnerable to neighboring States that do not enforce gun laws. As long as we see a clearly interstate commerce in guns,

Federal intervention will be needed to identify the source of the problem and identify minimally intrusive methods to ensure that guns don't get in the hands of statutorily defined irresponsible people (youth, felons, and individuals who have been involuntarily committed to mental institutions). A number of States' mental health departments, for example, have set up registries of people who have been committed to mental hospitals who should not have access to guns. A gun dealer can query that registry to determine whether a particular customer is prohibited from purchasing a gun. The response gives no detail on the person's mental illness, but merely provides a yes/no answer on prohibition.

Stephen Rickman, Executive Office for Weed and Seed, U.S. Department of Justice, Washington, D.C.: As a consequence of this increase in incarceration rate over the past 20 years, you have also had an increase in the number of people who are coming out of prison. And I think there was a study done over at the Bureau of Justice Statistics (BJS) estimating more than 500,000 people released. Given the fact that you have had this diminution in postrelease supervision and services with this population, how do you factor this into your trends and how it may affect crime in the future?

A.B.: That's a good question, because it really pulls together a number of important issues. Number one, we are keeping people incarcerated longer. We are keeping people longer partly because our sentences are increasing, partly because of mandatory minimums, and, most important, because of parole violations (increasingly for technical violations). We are increasing the probability that these people coming out are coming out well past their criminal careers—and we must think seriously about criminal careers. There was a period when NIJ sponsored some very important research on criminal careers, looking at the duration of a criminal career, how long people stay active. Research found that the duration of the residual criminal career goes up through the 20s, is fairly flat through the 30s, and then falls off in the 40s. So people in their 30s are the ones most likely to continue—if they are active in their 30s.

The issue of postrelease management is a complex one. It involves a mixture of providing services and exercising control by sending the person back to prison. The trends lately have emphasized the control aspect, often at the expense of services. Indeed, many States are finding that more of their admissions are now composed of parole violators than new court commitments. Service needs are complex, and perhaps the most essential is drug treatment, which everyone acknowledges is important. In addition, there has to be help in finding and keeping a job, treating mental illness, and various other forms of counseling.

The whole notion of parole has become politicized because parole officials rather than prison officials were the ones who made release decisions: “We will stop the release decisions by moving to determinate sentences” without attention to the handholding and the guidance and the counseling needed and without attention to the rate of reincarceration. Parole officials took the political heat for being “soft on crime” at the time when everyone else was being “tough,” so they began sending violators back to prison on the least provocation without dealing with the issue of the optimum policy for dealing with somebody who now is drug positive. The parole issue very much needs rethinking. Parole recommitments have been a major factor in the growing incarceration rate over the past 5 years or so.

Obviously crime rates are declining. We are not doing a lot more on drug enforcement because the drug markets have thinned out and have become more surreptitious. They now look more like powder cocaine markets—more like pizza delivery rather than street markets.

Ted Gest, University of Pennsylvania, Criminal Justice Journalists (based in Washington, D.C.): While your presentation related to government responses to crime, you concentrated almost totally on what you would call enforcement or incarceration remedies. Could you describe the field of so-called crime prevention in the past 10 years or so? I think it’s fair to say there

has been an increase in programs dealing with juveniles and drug treatment—certainly not so much as was contemplated in the 1994 crime law,¹⁶ but a lot of programs. Does the absence of crime prevention from your comments indicate that either we don't know what any of these programs contributed or that you think they have had a marginal or insignificant effect on the phenomenon?

A.B.: I think that's an important question. There is so much I didn't talk about but I certainly didn't mean to slight prevention. I still think the efforts that governments, particularly the Federal Government, put into issues of prevention are quite minimal and the issue is compounded by the fact that we have so little research, between the Office of Juvenile Justice and Delinquency Prevention (OJJDP), National Institute of Justice, and BJS, to have any accurate assessment of what works best. The programs we get data on and that have been a major cornerstone of both Federal and State policies have been in the incarceration area. Prevention efforts are still strikingly minuscule in comparison to what is needed, particularly the need to combine those efforts with evaluations targeted at what looks like the most promising opportunities. OJJDP has been a major leader in, for example, the longitudinal research in tracking kids through emerging and eventually terminating criminal careers—and the factors associated with getting involved in crime—because that fundamental research helps to identify what kind of interventions are best for whom.

We went through this horrible period in the late 1970s and early 1980s when Bob Martinson's "nothing works" theme emerged out of a variety of evaluation studies that tried to find the "silver bullet" and tested individual technologies to estimate their effectiveness in reducing recidivism. Any such treatment cannot be universally applicable. Treatments have to link the individual offender or potential offender and his or her needs, the treatment provider and his or her skills in delivering various kinds of treatment, and the environment in terms of what kinds of crime that person might be getting involved in.

We have to experiment with many approaches and evaluate them, but budgets in the order of tens of millions of dollars are inadequate to deal with this problem. We continue to be impressively ignorant about the effects of any of our interventions within the justice system. And cutting that back would be the height of folly at a time when the establishment is ready to be open and interested in getting research findings. But we need much more research and evaluation to track the changes that are going on in this phenomenon—because they are changing.

Clinton G. Turner III, U.S. Capitol Police, Washington, D.C.: My primary interest is victims of crime, especially those victimized at night. What about the enhancement of victim/witness support nationwide? At the U.S. Capitol Police, we are very good at dealing with victims of crime, primarily crime that occurs around 6:00 p.m. and later. Youths commit a high percentage of these crimes. If we enhanced victim programs in the various police departments, I believe we would have even fewer. Is there anything being done nationwide to enhance the victim-witness programs in police departments?

A.B.: I believe there are; I just haven't looked very carefully at that. I'm sure there is someone here who could answer that much more fully than I. I'm sure there are many here who might want to comment. Pat Murphy, do you have a sense of the degree to which police departments are developing victim service programs?

Patrick W. Murphy: From what I read in the newsletters and other sources, more departments are getting into victim services. But, you are so right about how chintzy we are about research. It's crazy that we are not spending 10 times as much on research as we are, especially on policing. Earlier, I was too polite. The basic problem about crime in this country is that we do not have a national police system, and we do not have democratic policing in the inner cities where we need it. You know from your murder rates how much higher the murder rates are in cities with populations over 100,000 than they are in

the rest of the country. Fifty percent of the murders in the United States are in cities with populations over 250,000. Within those cities, crime is concentrated in the inner cities, just as 100 or 150 years ago it was in the ghetto neighborhoods. On one block in 1870, 365 murders were committed at “Five Corners” in New York. Both the perpetrators and the victims were “nice people.” But we do not have democratic policing. Democratic policing is self-policing. The people are supposed to be policing themselves with police assistance. Well, for 100 years the police have been telling the people that they can protect them, and the good people don’t even know that they are supposed to be policing themselves with police assistance. Now, that is happening in some cities, which will lead to more drug treatment and more victim programs. About 30 percent of the police officers in the country today have college degrees; this is an encouraging sign, moving toward professionalization of the major departments. And I think as we see more of that, we will see more social programs being supported and actively involved with the urban police.

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The Juvenile Psychopath: Fads, Fictions, and Facts

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Research Network on Adolescent Development and Juvenile Justice

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This morning, I'd like to talk about a worrisome practice that I believe is becoming increasingly common in prosecutions of serious juvenile offenders: the characterization of the juvenile offender as a "psychopath," a "budding psychopath," or an individual with "psychopathic tendencies."¹ I do not have hard data to validate my suspicion that this practice has in fact become more common in recent years,² but my work on adolescent development and juvenile justice brings me into regular contact with prosecutors, defense attorneys, and judges, and the frequency with which I am asked questions about psychopathy and its diagnosis among juveniles has undoubtedly increased. Whether this reflects a genuine trend may depend as much on one's definition of psychopathy as it does on one's definition of what constitutes a trend. As some of you know, to a social scientist, one case constitutes an anecdote; two cases, data; three, a pattern; and four, a trend. At least four practitioners have asked me about this issue in the past year, so we may be talking about a trend.

Regardless of whether labeling some youngsters as true or incipient psychopaths affects 4, 40, or 4,000 juveniles a year, there is, nevertheless, good reason to worry about the practice, and there are many reasons to sound a note of caution within the juvenile and criminal justice systems about the potential overuse of psychopathy as a diagnostic label when applied to juveniles. Juveniles who are branded as psychopaths are more likely to be viewed as incorrigible, less likely to receive rehabilitative dispositions, and, if it is an option, more likely to be transferred to the criminal justice system to be tried as adults and face the possibility of adult sanctions, including incarceration in adult jails and prisons. We are not sure if the construct of psychopathy makes sense when applied to adolescents and children, we are not sure that measures of psychopathy are stable over the course of adolescence or between adolescence and adulthood, and we have no data on the predictive utility of the diagnosis when applied to juveniles. We are not ready—if indeed we ever will be—to base transfer or other dispositional decisions on diagnoses of psychopathy among juveniles.

Understanding Psychopathy

Let me begin with a brief introduction to the construct of psychopathy and its uses and misuses in clinical and forensic practice.

First, I want to distinguish between two similar words with different meanings for those who do not have a background in psychology or psychiatry. “Psychopathology” refers to any sort of psychological disorder that causes distress either for the individual or for those in the individual’s life. Depression, schizophrenia, attention deficit hyperactivity disorder, alcohol dependency, conduct disorder, and bulimia are all forms of psychopathology. Most researchers use the term “psychopathology” loosely to refer to a continuum of problems that range from mild discomfort to full-blown psychosis. Psychopathology can be ascertained through the administration of standardized tests or questionnaires or through some form of diagnostic clinical interview.

“Psychopathy,” in contrast, refers to a very specific and distinctive type of psychopathology. Psychopathy is a type of personality disorder defined chiefly by a combination of antisocial behavior, callousness, and emotional detachment. As one set of writers recently noted—

Psychopaths are typically charismatic individuals who readily manipulate others and engage in risky behaviors designed to satisfy their own personal needs. They are undeterred by pangs of conscience and have little or no concern for the welfare of others. Their relationships tend to be shallow and they often meander from one opportunistic setting to another without much concern for the future.³

Although psychopathy is often treated as a unidimensional construct, current thinking indicates that what we call psychopathy is actually composed of two related, but independent, components. Factor I reflects a cluster of affective and interpersonal features best described as callous emotional detachment (e.g., glibness, egocentricity, superficial charm, and shallow affect), whereas Factor II represents the chronic unstable and antisocial lifestyle (e.g., irresponsibility, impulsivity, criminality, and proneness to boredom) associated with psychopathic individuals. The fact that psychopathy is defined by two factors—one having to do with emotional detachment and the other having to do with antisocial behavior—is very important in understanding why it may or may not be useful in predicting future dangerousness among juveniles.

As it is presently defined, psychopathy is very similar to what psychologists call a personality disorder—indeed, although it is not listed in the *Diagnostic and Statistical Manual–IV* (DSM) as a personality disorder, it has many characteristics in common with antisocial personality disorder, and some have argued that psychopathy should be viewed as a subtype of antisocial personality disorder.⁴ Personality disorders are unlike other forms of psychopathology, which are viewed as potentially treatable (or at least manageable) conditions.

In contrast to such disorders as depression or conduct disorder, psychopathy is presumed to represent a pattern of personality and behavior that is deep seated, originating in early experience and/or biological functioning, relatively stable over time, and resistant, if not absolutely immutable, to change.

Psychopathy is generally assessed via structured interviews. In studies of adults, the gold standard from which most other measures derive is the revised version of the Psychopathy Checklist or PCL, which was developed by Robert Hare, the North American authority on psychopathy and its assessment. A slightly revised version of this measure, the PCL Youth Version, is now available for use with adolescents. The PCL is based on a series of ratings a trained expert makes on the basis of the individual's interview responses and information taken from the respondent's file or official records. The ratings are made on 20 different dimensions (see exhibit 1). The rater assigns a score of 0, 1, or 2 for each of these 20 dimensions. The field generally uses a cutoff score of 30 to designate an individual as a psychopath.

Before turning to questions about the appropriateness of using the psychopathy diagnosis for making dispositional decisions about juvenile offenders, a few words are in order about the use of this construct in making judgments about adults. First, there seems to be little disagreement about the utility of the construct "psychopath" in describing certain adult criminals. There is a substantial literature suggesting that criminals who score high on the PCL can be distinguished from their nonpsychopathic counterparts in theoretically meaningful ways on other personality measures and on measures of information processing and decisionmaking. Studies of neuropsychological functioning suggest that at least some portion of individuals who score high on the PCL may be "wired" in a way that could conceivably contribute to their criminality.

Second, there is near consensus that the PCL is a valid and reliable way with which to measure psychopathy among adults, although several writers have suggested that there is room for improvement⁵ and others have argued that there are three, not two, underlying factors.⁶ Reliability here refers to agreement between raters who are assessing the same individual. Estimates of the reliability of PCL scores over time are more difficult to calculate, because at least some of the score an individual receives is based on facts that are in the individual's record. Because these facts do not change, certain

Exhibit 1: Items From the PCL-R (Youth Version)

| | |
|---|--|
| Glibness/superficial charm | Parasitic lifestyle |
| Grandiose sense of self-worth | Poor anger control |
| Pathological lying | Early behavior problems |
| Conning/manipulative | Lack of goals |
| Lack of remorse or guilt | Impulsivity |
| Shallow affect | Irresponsibility |
| Callous/lack of empathy | Juvenile delinquency |
| Failure to accept responsibility for actions | Serious violation of conditional release |
| Impersonal sexual behavior | Criminal versatility |
| Need for stimulation/ proneness to boredom | Unstable interpersonal relationships |

elements of the individual's PCL score remain fixed and therefore artificially inflate estimates of the reliability of the measure over time. Nonetheless, by conventional social scientific standards, the PCL is a more than acceptable psychological assessment tool.

Third, and most important, the PCL is unrivaled in its ability to predict future antisocial behavior; it is especially good at predicting future violence. For example, a recent meta-analysis of findings from several large-scale followup studies reported modest but significant correlations between scores on the PCL and general recidivism, violent recidivism, and sexual recidivism.⁷ Psychopathic individuals (i.e., those obtaining PCL scores of 30 or more) were approximately four times as likely to commit a future violent crime than were nonpsychopathic offenders. Moreover, the PCL “has been found in many studies to perform as well as (and in some cases better than) statistically derived actuarial measures designed specifically to predict future violence.”⁸ In the MacArthur Violence Risk Assessment Project, the PCL was the single best predictor of future violence out of a set of 134 predictors.⁹ This does not mean that the PCL is fantastically accurate in predicting future criminal behavior, only that the PCL does a better job than other instruments designed for the same purpose.

Whether this level of accuracy is acceptable for making decisions about an individual is a more complicated matter, and one that, as experts in risk assessment like John Monahan¹⁰ have pointed out, is best determined by legal practitioners, not social scientists. One factor that must weigh heavily in any decision regarding the use of an imperfect risk assessment instrument is whether the consequences of a false positive classification—that is, the classification of an individual as high risk when he in fact is not—carry unintended harmful effects. If, for example, the outcome of being classified as

a psychopathic individual is long-term incarceration, it would not be advisable to accept a high false-positive rate. If, on the other hand, a classification of this sort is used simply to hold an individual for a few days pending further evaluation, the same false-positive rate may be acceptable in light of the potential benefits to community safety derived from identifying the small number of genuinely dangerous individuals. My concern is that assessments of juvenile psychopathy are not being used to recommend further evaluation but are instead forming the basis for definitive dispositional decisionmaking. The fact that assessments of juvenile psychopathy are being used to make decisions about the transfer of young offenders into the adult system—decisions that necessarily imply judgments about the likelihood of individual rehabilitation and that effectively determine whether any attempt will be made to rehabilitate the young offender—makes any false-positive problem especially worrisome.

In sum then, at least when speaking about adults, we can say the following:

- It makes sense to characterize some criminals as psychopaths.
- It is possible to do so using the PCL.
- Knowing whether an individual scores high on the PCL is useful information to have when trying to predict an individual's risk for future criminality or violence.

It is against this backdrop that I want to consider the use of the PCL and other instruments designed to assess psychopathy to make decisions about juvenile offenders.

Juvenile Psychopathy Assessment in Historical Perspective

Psychopathy has become in recent years an attractive notion to those interested in serious juvenile offenders. It is instructive to examine the current interest in the juvenile psychopath in historical perspective because there are striking parallels between today's situation and that which existed in the early decades of the 20th century during the beginning years of the juvenile justice system. Historian Michael Willrich has written a marvelous description of what he calls "eugenic jurisprudence" in the early part of the 20th century,¹¹ and it is fascinating to read this while pondering the juvenile psychopathy question before us today.

It is the alignment of four factors today, as was the case 80 years ago, that is driving the contemporary search for the nascent Hannibal Lecter. These four factors are: (1) a problem; (2) a crisis; (3) a theory; and (4) a diagnostic tool.

The Problem

One of the most difficult problems facing practitioners in the juvenile justice system today is differentiating between serious offenders who are at risk of reoffending and those who are not. This is an especially important challenge to those making transfer recommendations, both because we want to protect the community from individuals who have a high risk of reoffending (especially if the risk is for violent reoffending) and because we do not want to expose relatively low-risk young people to the likely iatrogenic effects of adult sanctions. If it were possible to differentiate between juveniles who are at high risk of reoffending and juveniles who are not, we could, in theory, make far better decisions regarding transfer to the adult system, the decertification of juveniles charged as adults, and so forth.

The problem facing legal practitioners in the early 20th century was much the same: how to draw meaningful distinctions among offenders who had

committed similar offenses. As Harvard Law School professor Roscoe Pound noted early in the 20th century, “Criminals must be classified as well as crimes.”¹² In 1909, the first court-affiliated psychiatric clinic was founded in Chicago, attached to the Nation’s first juvenile court, and designed to “assist judges in devising a disposition or ‘treatment’ appropriate for each offender and to conduct policy-shaping clinical research into the ‘root causes’ of crime.”¹³ Coincidentally, and ironically in light of today’s discussion, the clinic was named the Psychopathic Institute; a sister clinic, the Psychopathic Laboratory, served the municipal court. As the chief justice of the municipal court explained—

[T]he idea [of the Psychopathic Laboratory] marks a turning point from the traditional policy of society of treating the delinquents as a single large class ... without consideration of the various individual characteristics which distinguish them, and are now seen to divide them into a number of sharply differentiated classes, each with its separate proclivities, potentialities, and prognostic characteristics.¹⁴

The Crisis

Each problem noted above was made more pressing by either a crisis or the public’s perception of one. Today’s sense of urgency over the need to determine which offenders are genuine psychopaths has its origins in the now infamously wrong prediction about the coming wave of superpredators made by prognosticators like John DiIulio.¹⁵ DiIulio has now softened his views on the inevitability of an epidemic of juvenile violence, but the legacy of the superpredator lives on today in the label of the psychopath.

If DiIulio had a counterpart in the early days of the juvenile court, it may well have been Harry Olson, the chief justice of Chicago’s municipal court. Olson’s speeches about the growing “menace of the feeble-minded”—a term

that was used to refer not only to the mentally retarded, but to individuals characterized by any number of mental deficiencies—sparked the same sort of panic and ill-informed changes in policy and practice as DiIulio’s incendiary op-eds about superpredators¹⁶ would do some 75 years later. Indeed, as Willrich points out, “by the mid-teens, the discourse about ‘the menace of the feeble-minded’ had spilled over from the welfare circles and professional journals into popular culture”¹⁷ in much the same way that the inside-the-Beltway musings of DiIulio and other conservative pundits eventually found their way into *Time* magazine and onto the evening news.

There are parallels in practice between then and now as well. Just as today’s prosecutors propose to use the diagnosis of psychopathy as grounds for the transfer of juveniles into the adult system, their forefathers advocated using feeble-mindedness as grounds for commitment. In neither time period do practitioners pay much attention to the problem of false positives.

The Theory

Although warnings about the wave of superpredators in the 1990s and the epidemic of feeble-mindedness in the 1920s were based more on rhetoric than reality, more on politics than precise evidence, the translation of rhetoric into policy and practice necessitated two other ingredients: a salable theory about the origins of the condition and an available diagnostic test to distinguish those who had the condition from those who did not.

Interestingly enough, during both eras the theoretical perspective that carried the most weight emphasized the organic bases of criminal behavior. During the early part of the 20th century, the work of the neurologist William James Hickson, whom Judge Olson recruited to direct the municipal court’s Psychopathic Laboratory, was especially influential, at least in Chicago, and as juvenile justice practice went in Chicago at the turn of the century, so it went in the

Nation. Hickson, who had studied in Europe with Emil Kraepelin and Eugen Bleuler, two of the most influential thinkers in the history of psychiatry, and in the United States with Herbert Goddard, who popularized the use of the Binet-Simon intelligence test in this country, created “a fascinating synthesis of organic psychiatry and eugenic criminology.”¹⁸ Hickson believed that the central cause of criminality was not low intelligence (the conventional definition of feeble-mindedness and at the time one of the presumed causes of criminal behavior) but an “affective defect” characterized by apathy, lack of remorse, and impulsivity, not unlike notions of “moral insanity” that had been popularized during the mid-19th century,¹⁹ and remarkably similar to the callous emotional detachment that defines one of the core components of psychopathy as it is assessed by the PCL. Hickson believed that this affective defect was inherited in the form of “dementia praecox,” a catchall diagnosis for serious mental disorder popularized by Kraepelin. Hickson also believed that it was possible to pinpoint the anatomical site of the defect: the lower brain.

Although little is written today about the genetic basis of psychopathy, there is no shortage of references in current writing about antisocial behavior, or about psychopathy in particular, to the possible organic bases for the disorder. The notion that a subset of chronic offenders is biologically different from other offenders is central to the dominant theories of the development of antisocial behavior today, such as that put forth by Terrie Moffitt,²⁰ whose widely cited model of juvenile offending distinguishes adolescent-onset criminality (which presumably is environmental in origin) from life course-persistent criminality (which, in addition to its earlier onset and later offset, is presumed to have a strong biological basis). The notion is also prominent in the works of leading writers on the subject of psychopathy, including Joseph Newman,²¹ Paul Frick,²² Adrian Raine,²³ and, of course, Robert Hare.²⁴ Psychopathy has been attributed in recent years to low serotonin levels, low autonomic reactivity, unusual patterns of physiological arousal, and prefrontal cortical dysfunction. It has become increasingly common at professional

meetings to see “pictures” of criminal brains; whether this is genuinely informative or simply high-tech phrenology remains a matter of some controversy.

What’s important, though, is that at both the beginning and the end of the 20th century, a theory or set of theories suggested that there exists a sub-population of serious offenders whose criminality is caused by an affective defect, based in an organic brain deficit, and deserving of special treatment within the justice system. In each historical period, the scientific legitimacy of the theory provided a foundation on which a change in practice and, by extension, policy was fashioned.

The Diagnostic Tool

The confluence of a problem, a crisis, and a theory about serious offenders might influence debate, but to influence day-to-day practice it is necessary to not only lead practitioners to the water but provide them with the cup from which to drink it. Nothing succeeds in this task so well as a test. Indeed, as Thomas Grisso, a member of our MacArthur Network and expert on the forensic assessment of juveniles, has argued, we typically think of practice as being driven by policy, but in many instances, the reverse is true. As new assessment tools become widespread, changes in practice made possible by the introduction of new measures or assessment instruments often lead over time to changes in policy.

In the 1920s, the search to identify criminals with the affective defect of dementia praecox was greatly facilitated by the availability of the Binet-Simon intelligence test, whose use had become increasingly widespread in the years following World War I. One would not think an IQ test would be very helpful in the search for affectively defective individuals, but in this case, necessity was the mother of misuse. Hickson, eager to please the judge who had appointed him (a judge who firmly believed that the menace of

feble-mindedness was epidemic), to build his own reputation as a theorist and diagnostician, and to promote the Psychopathic Laboratory, began using the Binet, which had been designed solely to measure certain aspects of intelligence for purposes of identifying children who needed special educational programs, as a means of identifying individuals with the affective defect presumed to underlie intractable criminality. On the basis of individuals' scores on one subtest of the Binet—a visual memory test—Hickson and his colleagues made diagnoses and recommendations to judges that were used to justify the incarceration of certain offenders. These psychiatric workups were especially important in cases involving juveniles and females because it was in these cases that the courts were most interested in assessing the amenability of the offender to rehabilitative intervention, which was precisely what Hickson believed he could assess.²⁵

All of the elements that led to interest in the diagnosis of dementia praecox among juvenile offenders in the early decades of the 20th century—the problem of prediction, the perceived crisis of epidemic feble-mindedness among inner-city youth, and the theory of organically based criminality—were present in a more contemporary form at the end of the 20th century. And just as the existence of a diagnostic tool (in the 1920s, the Binet-Simon test of intelligence) concretized these elements into a practice that influenced legal decisionmaking early in the 20th century, the growing and, in some senses, well-founded popularity of the PCL as a diagnostic instrument in assessments of adults more recently has made the use of versions of the PCL (or adaptations of it designed for the assessment of juveniles) all but inevitable in the evaluation of juvenile offenders. Whether the use of these youth-friendly PCL instruments—now, there's an oxymoron if there ever was one—for purposes of making transfer decisions today is as problematic as was the use of the Binet-Simon intelligence test for making commitment decisions 80 years ago is the topic I turn to next.

The Utility of Juvenile Psychopathy Assessment

Using a measure based on a well-validated and reliable instrument designed to assess psychopathy among adult offenders to perform a similar task among juveniles is not the same sort of problem as using a test of visual memory to diagnose intractable criminality. I am not suggesting that researchers and practitioners who are using currently available measures of psychopathy with juvenile populations are committing the same sort of egregious mistakes that Hickson was making by using the Binet to make diagnoses of affective defect.

However, the translation of an instrument from one appropriate for use with one age group to one appropriate for use with another is far from worry free. The fact that a problem, a perceived crisis, and a theory about juvenile offending encourage us to grab onto an available diagnostic instrument should not make us ignore some very real dangers in doing so. Until certain fundamental questions about the use of the PCL and instruments derived from it are answered through systematic scientific research, practitioners should not be using such measures in forensic practice. Nonetheless, there is evidence that practitioners are using PCL-derived instruments for making transfer, sentencing, and decertification decisions, despite the cautions (some of them transparently half-hearted) raised by some of the researchers who are heavily invested in the use of these measures.

In my view, there are three questions that we must answer before encouraging courts to consider assessments of juvenile psychopathy in making sentencing, transfer, and decertification decisions:

1. Do measures of psychopathy mean the same thing when used in adolescent populations as they do when used in adult populations? This is the question of construct validity.

2. Are scores on measures of psychopathy derived during adolescence correlated with scores on measures of psychopathy derived during adulthood? This is the question of stability.
3. Do scores on measures of psychopathy derived during adolescence predict antisocial behavior and violence during adulthood? This is the question of predictive utility.

Research by Elizabeth Cauffman and Jennifer Skeem is about to be launched to examine these questions. When or until this work is completed, if the answer to any of these questions is “We don’t know,” the use of psychopathy assessments to make important decisions about juvenile offenders is premature. If the answer to any of these questions is “No,” the use of psychopathy assessments to make important decisions about juvenile offenders is bad—perhaps even unethical—practice.

To look at these questions of construct validity, stability, and predictive utility more closely, first consider the conceptualization and measurement of psychopathy among adults. As noted earlier, the construct of psychopathy is predicated on the notion that psychopathic individuals have a deep-seated, unchanging pattern of personality and behavior that has its roots in early experience and/or biology. The pattern is characterized by two broad factors: callous, emotional detachment, which includes such traits as grandiosity, manipulativeness, shallow affect, and failure to accept responsibility for one’s own actions; and an unstable antisocial lifestyle, which includes such traits as impulsivity, irresponsibility, delinquency, and proneness to boredom. Callous, antisocial individuals are presumed to be at higher risk for continued antisocial behavior and violence.

Construct Validity

Let me begin with the question of construct validity. Do the indicators of psychopathy when assessed in adolescence mean the same thing as they do when assessed in adulthood? A different way of asking this is to ask whether the correlates of psychopathy are the same during different developmental periods.

We know that it is not always the case that traits assessed at one point in development have the same meaning as they do at a different point in development. Consider, for example, an individual who refuses to cooperate with other people. During early childhood, this may indicate healthy independence; during adulthood, this may indicate selfishness or antisocial behavior. Or consider this: Imagine that we separate a mother from her child for 10 minutes and then we reunite them. Clinging behavior in a young child indicates a strong and healthy attachment, which is correlated with a variety of measures of positive functioning; the same clinging behavior in an older child may indicate insecurity and would likely be correlated with indicators of emotional and behavioral problems.

One worry I have about the assessment of psychopathy among adolescents is that many behaviors we associate with normal adolescent development are the same behaviors we associate with psychopathy in adults. To be sure, some of the items used to judge psychopathy likely apply to younger as well as older offenders. These include pathological lying, manipulativeness, shallow affect, and poor anger control. For the most part, I think that these constructs mean similar things when observed in an adolescent as they do when observed in an adult. (The appropriateness of these items in assessments of preadolescent children, where they may in fact be problematic, is not addressed here.)

But many items that are central to the definition of psychopathy among adults may erroneously be viewed as indicators of psychopathy in an adolescent population and confused with normative adolescent development. These items include grandiosity, proneness to boredom, lack of remorse or guilt, impersonal sexual behavior, goallessness, impulsivity, irresponsibility, failure to accept responsibility for one's actions, and unstable interpersonal relationships. I say this both as the parent of a nonpsychopathic 16-year-old and the coinvestigator of a longitudinal study that tracks serious juvenile offenders over time. Because my son does not permit me to discuss our personal life in public (owing to the fact that he is glib, grandiose, egocentric, and impulsive), I will comment only on our experiences in the research.

The MacArthur Foundation Research Network on Adolescent Development and Juvenile Justice, which I direct, is conducting a number of studies aimed at understanding the ways in which information about normal and atypical adolescent development can improve the quality of decisionmaking concerning young offenders in the juvenile and criminal justice systems. Among these projects is a large-scale study of adolescents' competence to stand trial, a comparison of the impact of juvenile versus adult sanctions on serious offenders, several studies of the ways in which adults judge adolescents' criminal culpability and blameworthiness, research on legal socialization (how young people acquire attitudes about the law), and a longitudinal study of "pathways to desistance." (More information about the Network and its projects is available on our Web site, www.mac-adoldev-juvjustice.org.)

In our study of pathways to desistance, we are tracking 1,200 juvenile felons in Philadelphia and Phoenix to understand how they are affected by their experiences in the juvenile and criminal justice systems. Among the measures of individual functioning we use in this study is the Youth Version of the Psychopathy Checklist (PCL-YV), which is considered the state of the art in the assessment of psychopathy among adolescents. At our site in Philadelphia,

we struggle often over how to interpret the behavior of the 14- to 17-year-olds in our sample in light of the items that compose the PCL–YV. Does a 14-year-old who blames his friends for dragging him into a robbery qualify for a rating of failing to accept responsibility for his actions, or is he accurately describing a heightened susceptibility to peer pressure that is characteristic of teenagers at this age? Is a 15-year-old who does not know what he wants to do with his life goalless, or is this indicative of an individual in the midst of an adolescent identity crisis? Is a 16-year-old who has a new girlfriend every other week someone who has unstable interpersonal relationships, or is he merely trying to figure out who he is and what he wants in a romantic partner? Is a 17-year-old who believes that he can drive while high grandiose or suffering from adolescent egocentrism?

Even Cleckley, whose groundbreaking description of the psychopathic personality formed the basis for the PCL worried about this:

Confused manifestations of revolt or self-expression are, as everyone knows, more likely to produce unacceptable behavior during childhood and adolescence than in adult life. Sometimes persistent traits and tendencies of this sort and inadequate emotional responses indicate the picture of the psychopath early in his career. Sometimes, however, the child or the adolescent will for a while behave in a way that would seem scarcely possible to anyone but the true psychopath and later change, becoming a normal and useful member of society. Such cases put a serious responsibility on the psychiatrist.²⁶

In the same way that Moffitt²⁷ argues that we cannot distinguish between adolescence-limited offenders and life-course persistent offenders by observing them only during adolescence, because their observable behavior may be identical, I wonder whether we can distinguish between psychopathic and nonpsychopathic teenagers on the basis of their scores on the PCL. The problem is that some items on the PCL describe characteristics that, while

potentially indicative of problems among adults, may indicate normative development (or at least development within the normative range) among adolescents—transitory characteristics that disappear in most individuals by young adulthood. However, by definition, psychopathy is not something that individuals grow out of. Which brings me to the issue of stability.

Stability

Assertions about the presence of psychopathy among the young are necessarily based on the presumption that scores on measures of psychopathy are stable over time. To my knowledge, we do not really know if this is true among adults, but the fact that we do not have data at all on the stability of PCL scores among juvenile offenders over time is particularly problematic, since adolescence is inherently a time of change. I should note that the DSM does not permit the diagnosis of antisocial personality disorder, the closest diagnosis in the psychiatric lexicon to psychopathy, among individuals under the age of 18. It is not clear why the diagnosis of antisocial personality disorder among adolescents is problematic but the diagnosis of psychopathy is not.

Furthermore, it is not simply that psychopathy is presumed to be stable over time; it is also presumed to be resistant to change. Unfortunately, the stability of traits over time is generally studied under constant contextual conditions. Assertions that aggression or impulsivity or antisocial behavior are stable traits are generally derived from longitudinal studies that do not consider whether the individual's social environment remained unchanged during the same time period. For obvious reasons, indicators of stability under constant conditions may not provide accurate estimates of stability under changing conditions. Therefore, saying something is stable under natural conditions (i.e., if nothing else changes) is not the same as saying it is immutable. To research this, we need more than studies that simply measure psychopathy at two points in time. Before we use assessments of adolescent

psychopathy to draw inferences about the amenability of young offenders to rehabilitation, we need experiments that assign putative juvenile psychopaths to treatment and attempt to change them. We have some evidence that this is difficult to do in adults, but no evidence either way in adolescents.

Predictive Utility

My final worry concerns the predictive utility of the PCL in juvenile populations. The question is whether scores on the PCL that are derived during adolescence are predictive of antisocial or violent behavior in adulthood. At first glance, this appears to be the easiest of the three questions to answer, because it requires only that we assess psychopathy during adolescence and antisocial or violent behavior during adulthood and see if the first predicts the second. Indeed, at least one team of researchers has done this, and the results indicate that adolescents' scores on the PCL are predictive of the number of times they are convicted for violent offenses before age 21.²⁸ It is not quite so simple, however, to judge the predictive utility of the psychopathy assessments.

The reason for this difficulty inheres in the two-factor structure of the PCL. (Factor I refers to the emotional and interpersonal aspects of psychopathy and Factor II refers to the antisocial aspects of psychopathy.) We know from a vast literature on antisocial behavior that the single best predictor of future antisocial behavior is past antisocial behavior and that the single best predictor of future violence is past violence. At issue here, then, is whether psychopathy in adolescence per se is an especially good predictor of future antisocial or violent behavior. Demonstrating that individuals who have offended in the past are at greater risk of offending in the future is not exactly the stuff that Nobel Prizes are made of. To the extent that the predictive utility of the PCL or any other measure of psychopathy inheres solely in the well-established link between past and future antisocial behavior, we might

as well just assess past antisocial behavior and forget about trying to distinguish between psychopathic and nonpsychopathic individuals. And if this is the case, high scores on the PCL tell us nothing about individual amenability, which is the sort of inference that is being drawn from the PCL. Another way of thinking about this is to ask whether there is any “value added” to be gained by assessing the elements of psychopathy that are not indicators of current or prior antisocial behavior, such as those items that make up the factor defined by callous, emotional detachment.

Unfortunately, extant research does not provide a clear-cut answer to this question. Although the connections between current psychopathy and later offending are real, the links are due largely to the predictive significance of the antisocial factor, which demonstrates what we know all too well: that earlier offending is predictive of later offending. In samples of adults, the links between the non-antisocial variables—grandiosity, glibness, shallow affect, and so on—and subsequent offending are statistically significant but very modest in size.²⁹ Before we can recommend the use of psychopathy assessments in dispositional decisionmaking regarding juveniles—especially in dispositional decisionmaking that is based on assumptions about amenability—we need more research that looks specifically within the adolescent population at the predictive utility of those elements of psychopathy that are not themselves indicators of current antisocial behavior. Questions about the stability and predictive utility of the PCL and related measures can be answered with well-designed longitudinal studies. Although we do not have such research yet and, although such studies are time-consuming and expensive to conduct, they are clearly within the realm of scientific possibility.

In closing, I want to return to what I think is the most difficult of the three questions I raised: whether high scores on the PCL during adolescence indicate genuine psychopathy or something that is less worrisome.

Many years ago, Anna Freud, the pre-eminent psychoanalytic theorist interested in adolescence, wrote what now is considered to be a classic article, "Adolescence as a Developmental Disturbance."³⁰ Although few experts in adolescent development continue to hold the view that we should see the period as one of temporary insanity, at least some of what Freud implied in this article is worth heeding. Many behaviors that adolescents engage in are behaviors that, if demonstrated by an adult, would indeed be indicative of psychopathology, if not necessarily psychopathy. Psychopathy is, by definition, not something that individuals grow out of. Adolescence, by definition, is. It is important that we do not confuse one with the other.

Question-and-Answer Session

Jenni Gainsborough, Senior Policy Analyst, The Sentencing Project, Washington, D.C.: I actually have three quick questions about the way the PCL is being used. First of all, is the PCL being widely used to decide whether juveniles should be transferred into the adult system? Second, you talked about a youth version of it; does the youth version take into account the specific characteristics of adolescence that are problematic? And third, we know that a lot of the fear about "superpredators" was racially based, and also we know that an extraordinarily high percentage of juveniles being transferred into the adult system are African-Americans; do these tools look at racial differences in any way?

L.S.: Yes, no, and no. First, the PCL is being very widely used in Canada now. Robert Hare and his associates are Canadian and the popularity of the instrument has always been greater north of the border. It is becoming more widely used in the United States. No one has any data on this; but I receive calls regularly from public defenders asking if, in fact, this is a valid test. As to

the second question, the attributes characteristic of normal adolescent development are identical to the youth version of the PCL (exhibit 1). The translation of the adult version to the youth version simply substituted words like “relationships” for “marriage” or minimized the importance of “work” and substituted “long-term goals.” It is virtually the same instrument.

The third question on race is a very important one. Some studies suggest that the instrument performs differently among African-American and white offenders in adult samples. That is to say that it is somewhat less useful in studies of African-Americans than in studies of white offenders. We do not know the answer to this question for the juvenile version. It has not been studied to my knowledge.

Devon Brown, Deputy Trustee, Office of the Corrections Trustee of the District of Columbia, Washington, D.C.: The PCL is being used here in this country. In fact, just north of our border at the Patuxent Institution, its use is widespread. But my comment has to do with Robert Hare. The strength of his instrument, when applied to adults, is also its weakness when used with juveniles. Hare argues that sociopathy is due to a developmental lag. In both his manual and his research findings, he bases that instrument on this theory—that the characteristics (as you point out) are typical of adolescent behavior. It’s just that they are demonstrated within an adult population. So in terms of your presentation, you need to be aware of that.

L.S.: Thank you. Then I find it very curious that Hare is one of the coauthors of the youth version of the Psychopathy Checklist and is one of the team that is marketing it as a measure that can be used with juveniles. Either he has changed his theory or he is doing something that is inconsistent with what he has written.

Lisa Greenman, Staff Attorney, Mental Health Division, Public Defender Service, Washington, D.C.: I wanted to ask you to comment on two things

that you have mentioned during your talk. One has to do with the extraordinary nature of the marketing of these instruments. And actually the last question reminds me that in addition to the youth version there is now a Hare P-Scan version. I would like to hear more about the very aggressive marketing. My other question has to do with the significance of a very high false positive rate in the use of the PCL-R with adults, which is where it makes its strongest showing. I know some of your colleagues like Ed Mulvey have described it as the strongest in a field of weaklings. I wondered if you could expand on this subject. My first exposure to the construct of psychopathy and the use of the PCL-R for predicting future violence was in death penalty cases, where prosecutors were arguing that high PCL scores should be used by a jury to sentence an individual to death rather than to life without parole. In that context, I learned that the false positive rate (among people who were high scorers on the PCL) was, in many studies, shown to be less effective than a coin toss in predicting future violence. In some studies it was slightly more than 50 percent effective. But the false positive rate was right around 50 percent and sometimes even greater. I would like you to comment on the rate of false positives and how it affects your recommendations on how much courts should rely on this instrument in a forensic context.

L.S.: First, there are, in fact, other measures being marketed for use in identifying juvenile psychopaths, some of which their creators market as usable with people as young as 10. These are sometimes questionnaire versions of a lengthy clinical interview administered to the respondent either directly or through parents or teachers. I think that if you look into this, you would find that the individuals who are developing these measures give—as I noted in my talk—a kind of half-hearted caution that these measures should be used for research purposes only but, at the same time, urge practitioners to “send your check to this company and we will gladly send you the measure.” What happens next is that the measures find their way into the hands of practitioners who may or may not read the fine print that this is a research tool and not a proven clinical instrument. They then use it to make a diagnosis; they

present it in court to a judge who doesn't know, and perhaps shouldn't be expected to know, the difference between a research instrument that is still in development and a diagnostic tool that has clinical validity. I think that if the people who were developing these instruments were in the room they would argue that there is a caution on the cover of their instrument that states it is a research tool. But nevertheless, by selling it to other individuals they are leaving open a very, very wide door for prosecutors and other legal practitioners to walk through.

As to the problem of false positives, as I mentioned before, it depends on what you do when somebody scores positively. Any instrument that measures anything, even forecasting the weather, will have false positives associated with it. If the danger of a wrong forecast is that you carry your umbrella to work when you didn't need to, then that false positive is not especially problematic. If the danger of a false positive in the PCL assessment is that we are going to want to further assess this individual because we think he might be psychopathic, then I can live with a 50 percent false positive rate. If the danger of a false positive assessment is that the person gets a capital sentence, then I can't live with a 50 percent false positive rate. So, I think you can't separate questions about whether the false positive rate is high or low without asking what the consequences of a false positive assessment will be. I have argued the same point about the increasing use of Mosaic and other kinds of profiling programs to identify at-risk kids in schools because these assessments also have tremendously high false positive rates. The issue really is, what are we going to do with a kid who is rated at risk for violence? If the consequence of that assessment is suspension from school, that false positive rate is not acceptable. If the consequence is to talk to this kid a little more and learn a little more about him, then I can live with a false positive rate. So I think that the answer is: Yes, the PCL is the strongest measure in a field of "weak-lings"—we are very bad at predicting violent behavior. But people need and want to make predictions and this is the best tool currently out there.

Robert Stephenson, Director, Division of Workplace Programs, Center for Substance Abuse Prevention, U.S. Department of Health and Human Services, Washington, D.C.: You had not identified substance use or abuse as any one specific measure in your discussion. Could you briefly discuss the relationship of substance use or abuse in the PCL and psychopathy, both in a youth version and an adult perspective? And are there any specific drugs or patterns of use that might be more predictive than others?

L.S.: Drug use, in and of itself, is not an item that is used to predict psychopathy. There is an item on the list, you may recall, for juvenile delinquency (and in the adult version for past criminality) and drug use, particularly criminal drug use. I am not aware of any research that suggests that either drug use in general or the use of specific drugs is indicative of psychopathy. We do know, of course, that individuals who use and abuse drugs and alcohol are more likely to be involved in a range of antisocial activities. But to my knowledge it does not make them at heightened risk for psychopathy.

Joanne Wiggins, Program Analyst, Planning and Evaluation Service, U.S. Department of Education, Washington, D.C.: You mentioned racial differences in the use of the instrument. Can you say something about differences between males and females?

L.S.: There are very, very few females who score high on the PCL. It's not a completely male disorder, but it is not very often found among females and, to my knowledge, I don't know any studies that would allow us to really make a statement about its differential utility in males and females.

I was asked to comment on what judges ought to rely on if they can't rely on this assessment tool. I think that individualized assessments of serious juvenile offenders—assessments done by skilled, developmentally sensitive forensic and clinical evaluators—can be very useful in helping judges formulate appropriate dispositions or sentences for juvenile offenders. But

there is a danger when we begin to rely on standardized instruments that may become widely used in practice by individuals who don't have a great deal of training and who simply will turn over a score to a judge and say, "This person scored a 32; therefore, he is a psychopath." I certainly believe that psychology and psychiatry should play a role in helping courts formulate sentencing and dispositional decisions; I just worry that handing out a test and using people's scores on a test that has unproven validity in this population is not wise practice.

Denise M. Juliano-Bult, Chief, Systems Research Program, Services Research and Clinical Epidemiology Branch, National Institute of Mental Health, Washington, D.C.: Could you say anything briefly about inroads to effective treatment for adolescents who do score high on the PCL?

L.S.: I don't think we know anything about it. You know there have been literally a handful of studies of kids who scored high on the PCL. To my knowledge, there has never been a study done that has looked at interventions designed for kids with high PCL scores to see how that affects their behavior. My point, today, is not to provide definitive answers about this, but to raise cautions and questions about a practice that is just beginning to burgeon, but one that I think we need to be thoughtful about.

Barbara T. Roberts, Senior Policy Analyst, Office of National Drug Control Policy, Washington, D.C.: You mentioned cautioning people against looking at a score and making certain cursory diagnostic determinations. What ethical responsibilities do you think should be imposed on people who may be in the field and still purport to make such recommendations? How do you propose to curb that?

L.S.: Well, I guess for starters, I don't think it's wise to be distributing—in fact selling—unvalidated instruments. Assessing psychopathy in juveniles may or may not turn out to be useful. I am not saying here today that I am

certain it is not useful; I am saying we simply don't know. We need the kind of longitudinal research that I discussed earlier to look at how this tracks over time, to look at what it predicts, to look at how stable it is, before we move from research into practice. The fact that it is being used in practice now indicates to me that the individuals who developed these measures are not being appropriately cautious.

Notes

1. I am grateful to Elizabeth Cauffman, Thomas Grisso, Daniel Seagrave, and Jennifer Skeem for graciously making available to me prepublication drafts of manuscripts on closely related topics. I draw heavily on their insightful analyses here. Thanks as well to Elizabeth Cauffman, John Monahan, and Jennifer Skeem for their comments on an earlier draft of this paper.
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Violence Prevention 101: Implications for Policy Development

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Violence Prevention 101: Implications for Policy Development

Violence prevention rests on some *basic* principles that support systemic changes in health behavior. The discussion focuses on two *basic* premises of violence prevention that can inform public policy. The presentation begins with a broad look at violence within a variety of social sectors and age ranges. It then narrows the discussion to an examination of the school age population, which reflects how early implementation of violence prevention principles among these age groups can have a dramatic effect not only on violence reduction, but also in very real terms on individual outcomes.

The first premise of violence prevention, often overlooked by practitioners when they design violence prevention programs across age and ethnic/racial groups, is that there are different types of violence (see “Types of Violence”), and each type requires different prevention, intervention, and followup strategies.¹

A second premise, similarly neglected, is that different racial/ethnic groups experience different types of violence at different rates, and each calls for different prevention strategies. The following comparisons exemplify these different rates. Most murder cases involve a victim and offender of the same race or ethnicity. Among groups, homicide rates for African-Americans are 6 times and Latino rates are 2.3 times the Native American, Asian-American, and white rates of homicide. Other crime categories also reflect differences. The difference in violence rates between African-Americans and whites reflects the vast differences in poverty and social infrastructure between these two groups.²

In other violence comparisons among groups, interpersonal altercation and domestic homicide are major forms of violence in the African-American community. But because battered women now can rely on support from women’s shelters to escape their batterers, the rate of homicide of African-American men by African-American women no longer exceeds that of African-American women by African-American men.³

Gang-related violence is prevalent in the Latino community. Street violence is also common among Latinos: gun violence predominates, but knifings also are common.⁴ Compared with other groups, however, Latino men are less likely to perpetrate domestic homicide. Interpersonal altercation is also common in the Native American community. Forty percent of Native American murder victims are killed by non-Native American offenders, and in 33 percent of the cases, the offender was white.⁵

Types of Violence

- Group or mob violence.
- Individual violence.
- Systemic violence, such as war, racism, and sexism.
- Institutional violence, such as preventing inmates from getting the benefit of prophylactic medications to prevent hepatitis.
- Hate-crime violence, such as terrorism.
- Multicide (e.g., mass murder, murder sprees, and serial killing).
- Psychopathic violence.
- Predatory violence, also known as instrumental or secondary violence.
- Interpersonal altercation violence, also known as expressive or primary violence (e.g., domestic violence, child abuse, elder abuse, and peer violence).
- Drug-related violence, such as systemic drug-related violence (whereby drug dealers kill to sell drugs), pharmacological drug-related violence (whereby an individual perpetrates violence because of drug intoxication), economic-compulsive drug-related violence (whereby a drug addict uses violence to obtain drugs), and negligent drug-related violence (such as a drunk driver who kills a pedestrian).
- Gang-related violence.
- Violence by mentally ill individuals.
- Lethal violence directed toward self (suicide).
- Lethal violence directed toward others (homicide).
- Violence by organically brain damaged individuals.
- Legitimate/illegitimate violence.
- Nonlethal violence.

Source: Baker, F.M., and C.C. Bell, "African Americans: Treatment Concerns," *Psychiatric Services* 50 (1999): 362–368.

Suicide is a major form of violence in the white community. Whites represent most of the offenders motivated by anger or revenge, and in domestic- or romantic-related mass murders in which the offender also kills himself.⁶ In anger/revenge mass murders in which specific persons were targeted, 66.5 percent of the perpetrators were white and 66.7 percent of these perpetrators attempted suicide. In anger/revenge mass murders in which a specific place was targeted, 76.5 percent of the perpetrators were white and 38.9 percent of perpetrators attempted suicide. In similar mass murders with diffuse targets, 80 percent of perpetrators were white and 30 percent of perpetrators attempted suicide. In domestic/romantic-related mass murder, 57.1 percent of the perpetrators were white and 28.6 percent attempted suicide.

Research shows that among adolescents, suicide is extremely rare for those who lack a major mental disorder.⁷ Research has also shown that mass media coverage of suicide may trigger copycat behavior in vulnerable adolescents who have major mental disorders.⁸

In summary, if we are serious about effecting policy decisions concerned with violence prevention and systemic changes surrounding public health, two premises must be taken into account when designing violence prevention programs: 1) There are different types of violence, and 2) violence rates and prevention vary by ethnic groups. Once we have addressed these fundamental premises, we must cast a sufficiently wide net that incorporates certain principles that are not always closely linked to violence prevention.

Violence Prevention Principles

The basic principles of violence prevention as I see them are—

- Rebuilding the village.
- Providing access to health care.
- Improving bonding, attachment, and connectedness dynamics.

- Improving self-esteem.
- Increasing social skills.
- Reestablishing the adult protective shield.
- Minimizing the residual effects of trauma.

These principles are interdependent and are key guiding principles for effecting large, systemic changes in health behavior.⁹

Rebuilding the Village

Social disorganization theories of deviance suggest that poverty, lack of job opportunities, single-head households, isolation from neighbors, and weakened community networks and institutions lead to reduced informal and formal social control,¹⁰ which, in turn, promotes violence. Research demonstrates that communities need protective factors, such as an infrastructure and social fabric, to deliver effective public health interventions. Unfortunately, communities have varying levels of these protective factors.¹¹ In communities where they are lacking, a facilitator might be needed to help create community partnerships.¹² For example, evidence indicates that school-based interventions that shift how high-risk children are managed—by increasing parental involvement in school and collaboration with school personnel—can reduce risk, particularly for in-school violence.¹³ Another violence prevention strategy for child and adolescent populations might be to pair schools with community-based secular and faith-based organizations to develop activities to reduce violent and disruptive behavior by and against youths in the schools and surrounding communities. By emphasizing a shared vision among cooperating groups, a facilitator can encourage a mission-driven philosophy that transcends the goals of individual agencies in favor of a more overarching vision. This can be accomplished by emphasizing the interdependency among diverse elements in a community, encouraging affiliation among these elements, promoting development of “systems” thinking, and providing leadership to

community organizations—religious, business, social service, health, educational, civic, and social—to enable them to *synergize* their efforts to promote healthy development of youth.

Several examples of the “rebuilding the village” concept are occurring in Chicago. One of these is the Community Mental Health Council/University of Illinois/Juvenile Court Juvenile Delinquent Assessment Program, which provides forensic assessments of youths in juvenile court. It will also provide the foundation for collaboration among three African-American and three Latino community-based organizations so that needed services will be available to youths and their families upon release from court custody. Over a 3-year period, a coalition composed of the Chicago Crime Commission, the University of Illinois, the Chicago Police Department, Chicago Public Schools, the Community Mental Health Council, the Illinois Department of Children and Family Services, Allstate Insurance Company, and community leaders led to development of the Chicago Crime Commission Community Youth Program. Additionally, there are plans for a behavior disorders clinic at the University of Illinois that will share a child psychiatrist with the Community Mental Health Council and address clinical needs of children identified by the previous collaboration. Through collaborations to assess the nature and size of the violence problem, these institutions are better able to facilitate “rebuild the village” efforts. These initial accomplishments convinced involved organizations that to effect positive change, they needed to work together to maximize their pooled resources.

Providing Access to Health Care

The second principle involves raising awareness among healthcare professionals of factors that affect individual health, particularly their mental health. A better understanding of the many factors affecting health can improve diagnoses, reduce gaps in delivery of services, and make management

of treatment strategies more appropriate. The following examples underscore the value of more comprehensive medical screening for determining the causal links between health and behavior. Research supports, for example, the hypothesis that neuropsychiatric disorders among adolescents and children may predispose individuals to violence; specifically, neurophysiological brain impairments acquired since birth, i.e., not genetic biology, can lead to difficulty in bonding/attachment, poor social skills, and lack of impulse control. Environmental factors may also create physiologic responses that influence behavior. Research, for example, indicates that children with high levels of exposure to lead may be predisposed to violence.¹⁴

Among male juvenile delinquents, at least one-third have an impairing mental disorder, aside from conduct disorder, that has not been adequately treated. Many of these children are also substance abusers. Two of the more common mental disorders for this group—ADHD and depression—are treatable. Children with conduct disorders—with and without accompanying ADHD—also can be adequately treated with medication.¹⁵ As seen by these examples, timely and proper diagnosis and treatment programs are critical to improve overall health and individual outcomes in a variety of areas such as school.

Juvenile offenders may also be at high risk for exposure to multiple types of trauma as a result, for example, of family and peer relationships and prone, therefore, to the development of post-traumatic stress disorder (PTSD). One study found the prevalence rate of such disorders among juvenile offenders to be 24 percent.¹⁶

Virtually all suicide studies reveal that suicide victims in Western societies suffer from depression, psychosis, or substance abuse,¹⁷ but determining who among depressed individuals may be in danger of suicide is extremely difficult and challenges prevention strategies. Evidence in Sweden, however, shows that the development of new medications has created safer treatment of

depression. Advancements in medications have encouraged many individuals diagnosed with depression who had formerly avoided treatment to seek help. As a result, treatment for depression has inadvertently, but significantly, decreased the suicide rate among the general population in that country.¹⁸

Across age groups, as neuropsychiatry becomes more sophisticated, psychiatric diagnosis and treatment of some causes of violent behaviors will become more specific. Without the infrastructure to provide these more sophisticated services, however, communities with the greatest need for violence prevention programs will be the last to receive appropriate health care that could prevent some of the antecedents of violent behavior.

Improving Bonding, Attachment, and Connectedness Dynamics

Low levels of parental warmth, acceptance, and affection; low levels of family cohesion; and high levels of family conflict and hostility have been associated with delinquent and violent behavior among juveniles.¹⁹ By paying attention to the attributes of the family—its beliefs and values, emotional warmth, support, and organization—communication strategies can be developed within the family to strengthen it.²⁰ Providing early intervention programs for infants, toddlers, and preschoolers and their parents can teach both parents and their children the skills to enhance their sense of personal mastery and encourages strong intra-family attachments. Such attachments have been shown to reduce the risk of serious antisocial behavior and violence.²¹ Helping parents bond with their infants may seem a far cry from violence prevention, but enabling infants to grow up with basic trust and security provides the groundwork for future stable relationships that may be necessary to prevent violence or intervene in violence.²²

The Chicago public schools' Cradle to Classroom program is one example of a successful bonding and attachment strategy. In Chicago, 26 percent of

white, 31 percent of Hispanic, and 34 percent of African-American females reported pregnancy as a reason for dropping out of school. Chicago's public school leadership decided to support rather than ostracize teens who had children. By creating a collaborative initiative with the Chicago Department of Public Health, six hospitals, and other agencies for pregnant and parenting teens, the school system developed a system to train teens in essential parenting skills and teach them how to access community resources. Cradles to Classroom also provides counseling to new mothers about domestic violence and provides guidance to teens regarding access to prenatal, nutritional, medical, social, and child care services. The program has had a significant impact on the dropout rate of participating teens.

Findings from a longitudinal study on adolescent health have underscored the importance to youths of being connected to family and community.²³ This study noted that parent connectedness; parent/school expectations; school variables; and an individual's history of victimization, witnessing violence, weapon carrying, and perceived risk of untimely death are all related to such harmful behaviors as violence, drug use, and suicide. Forms of family connectedness, including extended family relationships, may be viewed as viable protective factors that mediate against various types of risk-taking behaviors.

Improving Self-Esteem

In his work with elementary and middle school students, Bean²⁴ notes that self-esteem is related to the following four domains:

- A sense of power related to feeling competent to make decisions and solve problems.
- A sense of uniqueness that comes from acknowledging and respecting the qualities and characteristics about oneself that are special and different.

- A sense of role models that individuals can use to make sense of the world.
- A sense of belonging that derives from being connected to people, places, or things.

By providing youths with opportunities to identify, embrace, and actualize these four factors, their self-esteem will increase, minimizing the hurt that is so frequently at the basis of violence.

The Chicago public schools have tried to create opportunities to build children's self-esteem by focusing on these four areas. Currently, to graduate from high school in Chicago, a teen must perform 40 hours of service learning. Such experiences help to transform learned helplessness into competence, thus increasing a youth's sense of power. The Chicago public schools are also improving the academic performance of all students by holding students, teachers, administrators, and schools accountable through learning outcome standards and staff development. By developing lesson plans consistent with the standards and establishing a rigorous high school core curriculum, junior and senior high school academies, advisories (systems in which youth receive career advice), and the school system can enhance students' sense of power. In Chicago, the international baccalaureate program has been extended to 13 high schools and the Chicago public schools have established 6 regional high schools with academic entrance criteria, as well as collaborated with area colleges and universities to provide college courses for motivated and able students. Clearly, such activities increase students' sense of mastery. In addition, the school system is providing individualized learning strategies and tutoring services for students with academic difficulty, as well as establishing smaller class sizes and specialized curricula for retained students and transition centers for retained students of high school age.

The Chicago public school system is also providing youths with opportunities to explore their unique talents. Chicago is attempting to acknowledge and

respect the qualities and characteristics of youths by making available an array of enrichment activities for students to be involved in. Accordingly, the system is strengthening its academic, trade, military, mentoring, and sports opportunities for youths.

By constructing a school curriculum that emphasizes information and practice on how youths may avoid or prevent violence, Chicago is exposing youths to positive models that will allow them to develop prosocial values. The Chicago public schools Character Education pre-K to 12th-grade curriculum provides educational strategies for strengthening and supporting positive character development and teaches students conflict resolution skills. The objectives of this initiative are to reduce racial, ethnic, and religious intolerance through education and to provide youths with models on how to communicate, solve problems, plan, develop leadership skills, manage resources, and remove barriers to success. Being involved in constructive activities helps youths develop social skills and self-esteem and helps to reduce their engagement in risky behaviors.²⁵ Finally, helping youths develop a sense of connectedness provides opportunities that encourage attachment to valued people, places, and activities.

Increasing Social Skills

Many successful family interventions developed to prevent violence have combined parent behavioral training techniques with other interventions based on family systems theory.²⁶ This type of training, which teaches parents how to use positive parenting skills and avoid harsh discipline, has been shown to reduce violence. Educating parents about the importance of supervising and monitoring their children, becoming more involved in their children's lives, and increasing their knowledge of their children's activities and whereabouts can also reduce the possibility of violence.

Providing youths with opportunities to serve their community, resolve disputes peacefully, and develop leadership skills that will enable them to promote healthy alternatives to violence will decrease tendencies to resort to violence in a variety of circumstances.²⁷ The Chicago public schools' Peer Leaders program teaches elementary and high school students peer mediation, conflict resolution, and anger management skills; 125 elementary schools, 65 high schools, and approximately 2,700 students participated in this program in 1997–98. Chicago's Young Negotiators program has been instituted in 25 schools. Approximately 500 students participated in the program in 1998–99. The Peer Mediation program uses peers to teach students how to manage conflict and disagreements effectively without resorting to violence and other forms of aggressive and antisocial behavior. Today, 20 Chicago high schools are participating in this rapidly spreading program.

The Chicago public school system also initiated the School Climate Team, which assists in the development of safety plans that schools include in their improvement plans. Such programs cooperate with school crisis intervention teams, interfaith/school social support partnerships, and school and community relations staff to assist in school crises. The Boys' Town Educational Model provides a social/life skills curriculum training model that provides intervention strategies to school personnel. Four elementary and two high schools participate in this demonstration project. Chicago's Behavior Management Training program trains teachers and support staff in techniques to help students modify their disruptive and aggressive behavior and acquire self-control and socially proactive behavior. Staff in 412 elementary and 67 high schools have received training. Teachers who need to improve their behavior management skills when dealing with violent and hostile behavior are offered proactive support from specialists through the school system's Behavior Intervention teachers' program. These specialists also assist school personnel in developing individual behavior management plans for students.²⁸

Training and programs such as the ones discussed here have done much to curtail the incidence of aggressive behavior and violence for youths, their families, schools, and communities.

Reestablishing the Adult Protective Shield

Research demonstrates the need and value for positive adult role models and involvement in the lives of youths. Many studies link adolescent participation in delinquent and violent behavior with lack of parental monitoring—represented at its extreme by neglect and conflict-ridden or poor discipline.²⁹ By increasing the predictability of parenting and the level of parental monitoring of children, and by decreasing negative parenting methods, violent tendencies among children can be averted.

In a similar manner, if schools strictly enforce disciplinary rules and provide a safety net of educational opportunities for youths who have been expelled or have violated probation or have committed first-time, nonviolent serious offenses, the result can be decreased violence. The Chicago public schools have instituted a zero-tolerance policy for violence and have a uniform discipline code in place that establishes consequences for student misconduct. Students found to possess illegal drugs, firearms, or other dangerous weapons receive immediate consequences, including expulsion and referral to an alternative school. Chicago public schools' Alternative Safe Schools program has 6 alternative school sites available for 300 students who have been expelled from school or referred for chronically disruptive behavior. Smaller class sizes and support services are provided for each student through individual learning plans within the program. SMART (Saturday Morning Alternative Reach out and Teach) mandates that first-time drug or alcohol offenders take a curriculum that focuses on character education, leadership development, conflict resolution training, gang prevention and detachment, and substance abuse counseling. SMART program students must meet on

eight consecutive Saturdays, two with their parents. Each student is provided with a mentor and is expected to perform 20 hours of community service. Students who do not successfully complete the program are referred for expulsion. Chicago's Jump-Start program operates in collaboration with the Cook County Probation Department, which gives intensive support to youths under the jurisdiction of the agency. The program provides youths who have had significant educational problems with extensive instruction in social skills and back-to-school transitional support. After completing this 8-week program, youths attend either an alternative or a regular school.

In addition to the sense of security provided through the zero-tolerance and SMART programs, the implementation of new safety and security programs further maximizes school safety. More than 600 professional security personnel are currently assigned to Chicago public schools. Monthly training is provided by the Chicago Police Department and the Office of Specialized Services to teach security personnel to work proactively with students and the school community. Training includes such topics as cultural awareness, diversity and sensitivity, case management, positive intervention techniques, de-escalating aggressive behavior, referral procedures and resources, and communication skills. Security personnel assist schools in the development of individualized school security programs. Chicago public schools' Operation S.A.F.E. (Schools Are For Education) program allows the schools to work in conjunction with the Chicago Police Department to provide two-person teams of uniformed police officers who work 8-hour shifts at each high school. Additional mobile tactical units patrol the vicinity immediately surrounding high schools and are able to respond quickly to any emergency calls.

Parent patrols also have been developed to ensure that students have safe passage to school. Existing in more than 375 schools, parent patrols monitor the streets before and after school. Parents are trained in safety and security

measures and participate in workshops on safety, violence, and conflict resolution. Enhanced training and expansion of security personnel and the provision of rapid-response teams and after-school security patrols provide a sense of safety among students by helping to reduce burglaries, vandalism, and theft after school hours. Metal detectors and surveillance cameras in every middle and high school increase a sense of safety and lessen the likelihood that students will bring weapons to school for their own security. Metal detectors have been installed in all of the system's high schools and in many elementary schools, recovering numerous weapons that might otherwise have gone undetected. Such technology has created an awareness among students and the community that weapons and illegal contraband will not be tolerated. Additionally, 90 percent of all Chicago high schools have security cameras or surveillance systems that monitor hallways, stairwells, remote areas, and the perimeter of the campuses and have significantly reduced vandalism.³⁰

These combined factors—increased adult involvement and supervision, uniform and enforced rules regarding behavior, and technical security and surveillance systems—have done much to increase students' sense of personal safety and individual responsibility in helping to maintain safer schools and communities.

Minimizing the Residual Effects of Trauma

Well supported in the literature on violence and victimization is an understanding of the link between violent behavior and feelings of hurt and anger. Behind all anger is hurt and the fear of being hurt again. Thus, a major strategy for preventing violence involves helping service providers identify trauma in children.³¹ Sensitivity to signs of trauma is essential to crisis intervention to reduce traumatic stress and its subtle long-term effects. Chicago public schools' crisis intervention efforts, for example, provide pupil support

teams and partnerships with the religious community to supplement local school intervention services for traumatized children, supplementing services through community-based social service and health agencies. Research shows that it is important to provide prevention, intervention, and followup counseling to reduce the possibility and impact of violent acts. Schools, therefore, frequently have counseling, nursing, psychological, and social services. Chicago schools have at least one counselor, supported by a team that includes a nurse, psychologist, and social worker, who assists students having difficulty in school or at home. Individual and small-group counseling are also a part of the school-pupil support services program. When a student's needs are beyond the school's resources, the student is referred to other programs or agencies. Safe From the Start, a new program initiated by the city of Chicago, facilitates the collaboration of the Chicago Police, the Metropolitan Family Services' Domestic Violence Program, the Community Mental Health Council Psychiatric Emergency Room/Crisis Intervention Program, and the Community Mental Health Council Children's and Adolescents' Outpatient Services in an effort to provide the full range of needed services to children exposed to violence.³²

A major strategy for minimizing the effects of trauma is to turn a student's learned helplessness into learned helpfulness. The Chicago public schools require community service of students to foster their sense of involvement by experiencing firsthand the benefit they provide to their community. The Service Learning Program is a required component of the high school curriculum. Students must provide a minimum of 40 hours in service learning through such activities as tutoring, working with elders, and participating in community beautification projects. An important aspect of the program is having the students demonstrate their learning through individual presentations, papers, and portfolios.

In conclusion, public policy should be based on a solid understanding of the types of violence occurring across groups and age ranges and on the very

fundamental principles surrounding health behavior and violence prevention. Acknowledging the varying types of violence, extending successful programs—particularly for school age children—and ensuring the provision of a full range of health and mental health services will do much to reduce the incidence of violent behavior and increase positive health behaviors.

Question-and-Answer Session

Jamie D. Hueston, Principal Psychology Consultant, Office of Clinical, Preventive Services, and Behavioral Health, Indian Health Service, U.S. Department of Health and Human Services, Washington, D.C.: I really appreciate what you have to say. I'm new with the Federal Government, and this is a cause I think is important, particularly in our American Indian and Alaska Native communities. Much of what I heard you speak about today is applicable to large cities, which have many high schools and colleges and other community service areas that can collaborate. Can you talk a bit about programs in rural America or share your general thoughts about rural America, especially American Indian reservations?

C.B.: That's always a hard one because there are even fewer resources in rural communities. In fact, the Violence Against Women Toolkit (<http://toolkit.ncjrs.org>) contains information for rural locations, including a section about Native Americans. One feasible thing for rural communities would be to go to institutions that deliver juvenile justice services (because there are now screening tools available) and screen for children who are mentally ill. When those children leave the system, case managers should arrange followup treatment, whether it be individual, family, or multisystemic therapy. Aftercare services exist, though they may be difficult to find in rural settings.

In rural communities in Illinois we are trying to develop followup care. We find that a lot of kids in rural juvenile justice systems are just as sick as those in urban areas, but they're not connected to any health care. That's the first place I would start.

There is also much discussion about telemedicine. One of the problems, however, is that in a place like Springfield, where the telephone technology may be outdated, telemedicine is just not possible. So there are concerns about the capability of rural infrastructure. But I think if we were able to develop the infrastructure and get telemedicine in place, we'd have a better opportunity to deliver mental health services to children in rural areas. This would help a great deal and that's where I would focus.

Bonnie Naradzay, Senior Policy Analyst, U.S. Department of Labor, Washington, D.C.: It seems to me that from the perspective of policy, a move that would help is to offer financial incentives to entice educated specialists to rural areas. I know the AmeriCorps program offers incentives, but I'm wondering whether somebody could recommend additional financial incentives, such as paying for schooling, if people do go to reservations. You would be bringing real health professionals there instead of relying on telemedicine.

C.B.: The National Health Service Corps has a program that works in that way. The program offers to pay your way through school if you go to an underserved area. And that's been useful. These programs need to be strengthened rather than weakened. There were some factions recently that actually considered weakening the program, which, to me, is just bizarre.

Offering incentives is an excellent suggestion. Another factor is adopting much of what we are teaching. There is a huge gap between what works and what is being done in the field. We have to shift focus in what we are teaching people. Although there are some practitioners in rural America, they

often are doing such individual interventions as psychotherapy on an 8-year-old child who doesn't control the circumstances in his life. Instead, they may need to do family therapy to improve some of the parenting and support systems for these children.

I think you are right. Incentive programs help rural areas. We've got to figure out how to do this and, again, I would commend Dr. Satcher's report from the youth conference he held last year.³³ His report describes the pieces of the puzzle needed to create both an urban and a rural infrastructure for children's mental health services. It's a national blueprint that can be tailored for different sized communities because the people who came to this conference were from many different places.

Stephanie Bryn, Codirector, Injury and Violence Prevention, Maternal and Child Health Bureau, U.S. Department of Health and Human Services, Washington, D.C.: Some of the success stories you mentioned in Chicago were exciting to hear. I was wondering if you might tell a couple of stories or give us some ideas about how to involve teenagers. You also mentioned the difficulty in involving teachers and I wondered whether you have any salient points on how we can do a better job of involving them.

C.B.: Part of the strategy we used in Chicago was to strengthen youth bonds and attachments. So we are really trying to get kids involved.

I think one of the shifts in policy—one that has been successful in Chicago—should be to keep kids in school during the summer, a period when delinquency increases among youths with too much time on their hands. We also are trying to get kids connected to community resources. I said to the head of the Chicago public schools that it's shortsighted to wait until a child is 5 years old before anybody figures out that he or she can't see, can't hear, or has a learning problem. He agreed, and we are trying to incorporate a Head Start program and an early identification health program into every Chicago grammar school.

We've got a Schools With Pools program. We've got kids involved with leadership training, meeting with teachers. We are really trying to empower the kids to be part of the decisionmaking process—again, transforming traumatic helplessness into learned helpfulness. We have a service learning program that pairs kids with elders. We've got the Boy Scouts. We are feeding kids breakfast, lunch, and dinner because many kids do not get regular meals at home. We're trying to do so much for children.

We are organizing baseball teams. There are actually baseball diamonds outside of Chicago public schools now! Sports teach kids how to communicate, how to solve problems, how to resolve conflict—all those things that you need to learn to remove barriers to success.

A second part of the equation involves teachers and I can't emphasize that point enough. I believe that most of the leadership in this country—including the education system—operates through a bully system. We must change that because principals bully teachers, and teachers bully students. We have to change how we manage our human resources and we have to transform our leadership style from a bully system into a value-based system.

I always give the example of a medical student who is failing anatomy. As his professor, you might threaten, "If you don't pass, I'm going to kick you out of this school." That's a bully mentality, and the wrong conversation to have. A better conversation might begin, "Why did you come to medical school?" Hopefully the student will say, "To save lives." Now if he is a fool, and he says, "Well I want to make a lot of money," you tell him that despite the money to be made from the practice of medicine, even the best physician will sooner or later make an error and he will have blood on his hands. You have to talk to that medical student about medicine and the practice of medicine, its spiritual and moral dimension, and ask that student who is failing anatomy to help you understand how failing anatomy is going to help save lives.

That is a more thoughtful level of conversation than, “I will throw you out of here.” We must engage in leadership training with doctors, with principals, with school boards in the hope that the lessons of leadership training will trickle down to such front-line professionals as interns and teachers. Leadership training is too seldom emphasized in the public sector.

As an example of what I am talking about, each quarter I have a 3-hour meeting with my staff of 300. We provide food and raffle off an assortment of DVDs, TVs, and VCRs on the assumption that adding incentives helps build staff loyalty and a sense of common vision. It costs a tiny fraction of our agency’s \$16 million budget, but I believe it pays off in large ways, not only in staff satisfaction but in better patient care. Of course, it is only one of many ways we strive to build a sense of mission.

We’ve got to start infusing some of these ideas about personal mastery and common vision—all the ideas that Peter M. Senge talks about in *The Fifth Discipline*—into our educational system as well, so that teachers learn better people skills.

Richard Stana, Director, Tax Administration and Justice Issues, U.S. General Accounting Office, Washington, D.C.: You talked about what works. Could you elaborate a little on what doesn’t work and why?

C.B.: There’s a very good publication on this subject. In fact, the Justice Department publishes a lot of this material. They put out checklists about what doesn’t work. D.A.R.E. does not appear to work. Vocational programs coupled with education appear to work, but vocational programs alone do not work. Boot camps have not been shown to work. Smaller classroom sizes with additional help may have an effect. Some research has said it works; some says it doesn’t work. I believe in coaching, so I’m inclined to believe that mentoring works, but in terms of the evidence it’s actually 50:50.

The notion that increasing security in one community causes the problem to go elsewhere is untrue. If you increase security, it's better all around. That seems to work. There was some evidence that the gun buyback program might not work. There are models in Boston (Operation Ceasefire) that appear to work, where agencies collaborate with each other. Fragmentation does not work. The best place to get a good checklist is *Youth Violence: A Report of the Surgeon General* (<http://www.surgeongeneral.gov>).³⁴ Del Elliott, based in Colorado, has a good checklist in there about the kind of things that work and that don't work. There is no evidence that individual psychotherapy works. It doesn't work. The best interventions, in my opinion, are those psychosocial interventions that people can learn through a manual. Large, systemic things work. Intensive case management works. Family therapy works. Medications work for kids in context with other treatments.

Michael Wiatrowski, Program Manager, Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice, Washington, D.C.:

Your discussion was interesting. I have a question and a comment. You spoke about community architecture. What's a good community? A few years ago we had a concept called crime prevention through environmental design (CPTED). I'd like to suggest that perhaps we ought to have something like violence prevention through community design. How are you teaching other communities crime prevention strategies? Not so much the programs, but the strategic thought processes so that you can change organizational behavior and get everyone moving in the same direction. You get a bigger bang for the buck by teaching communities how to do this. It should be a basic part of community development.

C.B.: Yes, absolutely. There are a lot of excellent Web sites out there that talk about this issue. Essentially, I've been trying to go from community to community telling people to read interesting books like Max De Pree's *Leadership Jazz*. De Pree was the head of one of the furniture companies,

Herman Miller, Inc. In his book, he talks about how running an organization is like being a leader of a jazz band, because everybody's going to play and do their own thing, but the leader has to get them to play together harmoniously. So it's a good paradigm. More community collaborations are beginning. We're trying to connect some dots in Philadelphia, in Los Angeles. A small, radical group of us are trying to move this agenda. I frequently advise nonprofits and other groups to consult corporations about how they were able to successfully institute a sense of common mission. That seems to work.

David Satcher provided a lot of leadership by developing a model in which any one player can initiate the process and get other players to the table. I've got people in Maine and Philadelphia, for example, and other places trying to understand how do you do this. It's very teachable. If you search community collaboration on any search engine several sites will pop up. One site I found useful was <http://www.communitycollaboration.net>. It has two-page sheets on how to construct collaborations and gives people a map.

The problem is that it takes an individual who has got some personal leadership and some sense of personal mastery to step up to the plate and take charge. It's going to take a while, but I'm beginning to see evidence of a slow cultural shift toward more mission-driven leadership. After all, we are getting beat up by other international businesses because of how they do their leadership.

Clinton G. Turner III, Victim Witness Coordinator, U.S. Capitol Police, Washington, D.C.: I am interested in the community policing aspect of collaboration. I'm a Federal police officer, so you know my mind is going to go in that direction. Also, many schools are teaching kids from the military standpoint, using ideas about discipline borrowed from the Marines, Air Force, and Navy. We also have kids going to a variety of police cadet schools. These things work very well as I see it. My coworker and I also lecture quite often at elementary and middle schools. We enjoy talking to kids; they're

very smart. I don't know how it is in Chicago, but this is what we are doing here in Washington, Maryland, and Virginia.

C.B.: That's why I mentioned ROTC as a way to help kids find skills. Although on one hand the military teaches management through bullying, it also teaches leadership skills. There's always a double-edged sword. And it's just that some emphases should shift with the context. I have been trying to figure out how you do that, because in a war situation, if you tell somebody to do something, you want them to it. Period. You don't have time to explain and argue. That's fine for that context, but problems occur when it creeps outside of the military context.

I remember when I became the CEO of the Community Health Council; having served in the Navy, I thought I could command my staff as if I were still in the military. A "do this or I'll shoot you" mentality. And you know, it doesn't work out. It's actually the easy way, but it doesn't work.

I didn't talk much earlier about the sense of resiliency, even spirituality, that one can gain from the military. I'm very much in favor of some of the military approaches to leadership, but some of it needs to be thrown out.

There's a good book by David M. Fetterman, *Empowerment Evaluation: Knowledge and Tools for Self-Assessment and Accountability*, that discusses a "framework for empowerment, evaluation, and related enabling activities." It talks about how to help communities set agendas, implement ideas, and evaluate outcomes. Another useful reference is "Identifying Training and Technical Assistance Needs in Community Coalitions: A Developmental Approach."³⁵ The authors talk about initial mobilization, establishing organizational structure, building capacity for action, and planning for action, as well as implementing, refining, and institutionalizing coalitions. The book outlines those community development steps. There are many community psychology resources out there that outline steps for people who want to establish programs.

Linda C. Brown, Program Manager, Family Advocacy, Army Community Service, Ft. Myer, Virginia: You mentioned things like sports and academics. I think there's a lot to be said, as well, for the value of participation in a band or an orchestra. Are you using the arts in your programs?

C.B.: Yes, absolutely. But I deleted half my slides in the interest of time. All of those things are critically important to teach kids and enhance that sense of power; sense of models; sense of uniqueness; and sense of being connected to valued, important places, people, and things. When adolescents participate in any of the things we discussed, they are increasing self-esteem, learning social skills, being attached to people, and experiencing an adult protective shield because they are safe while in those environments.

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Raising the Bar: The Impact of DNA Testing on the Field of Forensics

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Only 15 years have passed since DNA evidence was first introduced in a criminal trial in the United States, but in that remarkably short period of time DNA has revolutionized the criminal justice system. This impact goes beyond DNA's effect on investigating crimes, convicting the guilty, and exonerating the innocent. DNA testing has also brought about changes in unrelated fields by forcing laboratories and courts to rethink how they treat forensic evidence. These changes have consequences that we need to think about if we are to make wise policy choices in the future.

Reasons for DNA's Spillover Effect on Other Fields

Before we look at what happened, I'd like to consider briefly why it happened. What caused DNA testing to have such widespread repercussions? Two factors, I think, are primarily responsible: the nature of the DNA

forensic technique and the historical moment at which DNA entered the courtroom.

Enter Science

DNA profiling is an offshoot of science. It is a technique that exists beyond its forensic usefulness, such as ballistics, handwriting analysis, or fingerprinting. Forensic DNA is a fortuitous byproduct of some of the most highly regarded, cutting-edge research in the scientific community.

DNA's origins in the world of science meant that from the first, scientists whose work was far removed from the courtroom showed an interest in issues regarding the forensic application of DNA. I suspect this attention was due in part to scientists' fear that without adequate supervision, lawyers untrained in forensic techniques would misinterpret evidence. For instance, a number of eminent scientists, including Eric Lander of the Whitehead Institute, testified in the first New York legal case about the laboratory procedures needed to produce reliable results. In addition, distinguished scientists from a variety of fields were happy to participate when, at the request of various government agencies, the National Academy of Sciences empaneled committees to make recommendations aimed at improving laboratory work and the presentation of DNA evidence in judicial proceedings. The first of these book-length reports appeared in 1992—about 5 years after DNA evidence was first introduced. From the beginning, DNA testing was seen as part of the scientific endeavor and the participation of scientists brought new standards of professionalism into the forensic arena.

The Crusade Against “Junk Science”

DNA evidence made its debut at the same time that a very different kind of scientific evidence was coming under attack. Incensed by the huge damages

awarded some plaintiffs in toxic tort and product liability cases, critics claimed that plaintiffs' successes were attributable to venal expert witnesses who relied on "junk science" to prove causation. The allegations about junk science sparked considerable debate in the legal community about proper standards for scientific expert proof. In 1993, in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,¹ the U. S. Supreme Court entered the controversy. It adopted a new relevancy and reliability test for the admissibility of scientific proof, set out nonexclusive factors that bear on whether a theory or technique was derived by the scientific method, and stressed the trial judge's obligation as "gatekeeper" to screen proffered expert testimony so as to keep unreliable evidence from the trier of fact. Since then, the Court has issued two additional opinions dealing with the admissibility of scientific and engineering expert proof in Federal courts.²

We can only speculate on whether the advent of DNA profiling played a part in persuading the Supreme Court to tackle the question of scientific proof. DNA profiling certainly illustrates how important scientific evidence can be. Furthermore, the contrast between the science in question and some of the proof being attacked as junk may have piqued some members of the Court's interest in defining the nature of scientific proof.

Judicial Scrutiny of DNA Evidence

Although we cannot know what effect, if any, the advent of DNA had on the Court, the Court's plunge into the debate on science undoubtedly led to a heightening of judicial attention accorded DNA profiling. Even if the jurisdiction in question had not adopted the *Daubert* test—which only binds Federal courts—judges in all jurisdictions were certainly put on notice that issues about the reliability of scientific proof were now in the spotlight. The result, recently noted by the Research and Development Working Group of the National Commission on the Future of DNA Evidence, was that DNA

evidence received “an intensity of scrutiny far greater than the other methods of criminal investigation” had ever received.³

In the beginning, DNA evidence was routinely admitted. But when defendants began to challenge the admissibility of DNA evidence, spurred by the growing insistence on the need for reliable scientific proof, some courts initially upheld these contentions. They found that insufficient scientific work had as yet been done to satisfy their jurisdiction’s test for the admissibility of scientific evidence. The result was that DNA profiling was placed on a much more secure footing because of additional scientific input: The technical standards for DNA testing were strengthened, the databases used to generate probabilities of matching became larger and more representative, and laboratory performance was improved.

The judicial demands for more stringent science, and the resulting response, provided a model of how scientists test a hypothesis, accumulate data, and seek to reduce error. All players in the legal system—judges, lawyers, law enforcement and laboratory personnel—observed and were educated by this process, which had not been used in evaluating other forensic techniques. Ultimately this development had a spillover effect into other forensic fields.

DNA Laboratories

The Problem

One aspect of DNA’s impact has been its effect on laboratory practices. Critics had protested for decades about the sorry state of many American crime laboratories. Scientists involved with DNA testing observed that crime laboratory procedures fell short of standards to which scientists adhere in conducting research. It was readily apparent that the nature of DNA analysis lends itself to a wide variety of potential accidents and mistakes, including mislabeling and

mixing up samples, running the same sample twice instead of running the sample from a defendant against the crime scene sample, contaminating samples by exposure to other biological material, and misinterpreting results.

The Solution: Quality Assurance and Control and Accreditation

Quality assurance refers to a program conducted by a laboratory to ensure the accuracy and reliability of the tests it performs. Guidelines for quality assurance have been issued by two FBI-appointed groups—the Technical Working Group on DNA Analysis Methods and the DNA Advisory Board (DAB). DAB members include molecular geneticists; population geneticists; an ethicist; and representatives from Federal, State, and local forensic DNA laboratories, private-sector DNA laboratories, the National Institute of Standards and Technology, and the judiciary. The DNA Identification Act of 1994 provides that a forensic DNA laboratory may not qualify for Federal laboratory improvement funds unless it satisfies the quality assurance standards recommended by DAB and issued by the director of the FBI.

In addition, DNA forensic laboratories adopted stringent quality control protocols that require laboratories to monitor, document, and verify laboratory performance. These quality control programs aim to ensure and demonstrate that a laboratory is meeting its quality assurance objectives.

There is also some movement toward laboratory accreditation. Both New York and California require their forensic DNA laboratories to be accredited, a function that is performed by the American Society of Crime Laboratory Directors' Laboratory Accreditation Board (ASCLD/LAB), which audits labs to determine whether they are abiding by quality assurance standards. Some of the recent statutes that authorize inmate access to postconviction DNA testing require that such testing be done by an accredited laboratory.

Of course, even a laboratory that abides by the numerous provisions of the quality assurance guidelines may make a mistake. No system in which humans are involved can be error-free, but well-thought-out protocols will prevent many problems. Furthermore, when an error is made, it may be easier to detect and correct because the guidelines call for extensive documentation and records with regard to everything a laboratory does.

The Impact on Other Laboratories

The quality assurance guidelines have not only professionalized DNA forensic laboratories, but have had a spillover effect with regard to other services that crime laboratories provide. The ASCLD/LAB accreditation program requires that a laboratory be accredited only if it qualifies with regard to all of the services it performs—not just DNA testing. This means that as accreditation becomes more widespread, quality assurance is likely to increase in all types of crime labs.

Furthermore, the mere fact that a model exists on how to ensure quality assurance and control is influential. Of course blanket standards cannot be applied to other laboratories doing forensic work because guidelines need to address specific problems relevant to the particular discipline. But certainly the DNA laboratory experience has sensitized the forensic and legal communities about the need to improve all forensic laboratories. The degree to which that need is being met differs widely. That is hardly surprising. There are private laboratories, as well as public laboratories at the Federal, State, county, and municipal levels, all dependent on widely varying sources of funding. The extent to which laboratories have implemented reforms in procedures varies enormously, but the DNA accreditation process makes it more likely that other laboratory issues will be understood and addressed.

DNA's Impact on the Judicial Analysis of Forensic Evidence

The Probability of a Match

Is there a match? As with many forensic sciences, the essence of DNA analysis is determining whether two samples match—most important, a sample from the crime scene and a sample from a suspect or victim. Sometimes matching is all that is needed when, for instance, the investigator is trying to exclude samples at the crime scene that may have been left by persons who are not under suspicion. But when DNA evidence is offered to prove that the defendant was at the crime scene, or that the victim's blood was found in defendant's car, the enormous probative value of the evidence stems not from the bare fact of the match but on the statistical frequency of the match. We can be almost certain that a match means that the DNA at the crime scene must have come from the person with whose DNA the crime scene sample is being compared. The Research and Development Working Group of the DNA Commission on the Future of DNA Evidence recently concluded that, "Evidence that two DNA samples are from the same person is still probabilistic rather than certain. But with today's battery of genetic markers, the likelihood that two matching profiles came from the same person approaches certainty."⁴

With the help of scientists and tools such as the two reports from the National Academy of Sciences, judges became aware that they had to analyze two separate questions in determining the admissibility of DNA evidence: What is the scientific basis for concluding that accurate matches of DNA samples can be made and what is the scientific basis for providing reliable estimates of the frequency of a match? The first question raises a host of laboratory performance and biological issues; the second question requires consideration of population genetics. In order to calculate the probability that the crime scene sample came from the defendant or victim, data were needed about the frequency with which each of the loci being matched could be found in particular populations.

Numerous other forensic techniques rely on matching samples. Ballistics, fingerprinting, questioned document examination using such techniques as handwriting, ink, and paper analysis, and trace evidence evaluations of such materials as paints, fibers, and glass all have in common the assumption that it is possible to match samples. Courts had regularly admitted evidence derived from these disciplines without demanding scientific proof that accurate matches could be made and, for the most part, had completely ignored the need for a probabilistic analysis to convey the match's significance.

Erroneous Matches

We know that admitting proof of a match that is, in fact, erroneous can be devastating. In many of the more than 90 cases to date in which convictions were overturned on the basis of DNA testing, the prosecution had relied on expert testimony about matching hair, in addition to eyewitness testimony. Mitochondrial DNA testing has now established the inaccuracy of the hair comparisons that courts had previously admitted.

Misunderstanding the Significance of the Frequency of the Match

We also know that the significance of a match depends on its statistical frequency. For instance, in assessing the probative value of an expert's conclusion that shoe prints left at the crime scene match prints made by shoes found in defendant's closet, the value of the evidence will be much higher if the shoes were custom-made than if the shoes were mass-produced. And if the defendant's shoes had been repaired in a particular way, the prints may indeed have unique characteristics that serve to identify the defendant.

Prior to the advent of DNA evidence, lawyers often failed to analyze the probative value of testimony about a match. This could lead to improper inferences by jurors, especially when the match was obtained through an

impressive, seemingly infallible forensic technique, which was unaccompanied by any proof about the frequency of the match. For instance, in a 1970 case, *United States v. Stifel*,⁵ the prosecution tied a defendant to a pipe bomb that had been sent through the mail and had killed the person who opened the package by proving that tape on the packaging matched tape found at the defendant's place of work. The samples had been compared by neutron activation analysis, then a new technique. The jury was told in great detail about this process and how it could detect and measure traces of elements in minute samples. All tape at the defendant's workplace was part of the same batch (defined as 1 day's production), and that batch had been distributed by the manufacturer to only two purchasers in different U.S. cities, one of whom was the defendant's employer. Very little other evidence, other than proof of a possible motive and the defendant's experience with explosives, was introduced.

The defendant was convicted and received a life sentence. It was not until 13 years later through a Freedom of Information Act request that the defendant discovered the government had failed to provide considerable exculpatory evidence—in violation of the Brady Act. Therefore, vacation of his conviction was necessary. The defendant further discovered that the government chemist, who had testified to the match between the crime scene and workplace tapes, had also, prior to trial, tested other samples of the same brand of tape, samples that had been manufactured after the pipe bomb exploded. Those samples from different batches, distributed to many locations, also matched the crime scene tape. Obviously, evidence of the match would have had much less probative value had the jury realized that neutron activation analysis of all the tape manufactured by Proctor & Gamble over an extensive period of time showed an identical composition.

The court that vacated the defendant's conviction held that the prosecution expert had not committed perjury because defense counsel never asked him about testing other batches. Therefore, he answered truthfully when he stated

that the samples matched. Clearly, counsel did not understand that a match and the probability of a match raise two different sets of issues, and the trial judge and appellate court that affirmed the conviction may not have understood this either. This is a mistake that I hope lawyers will be less likely to make now that DNA testing has educated us about probabilities.

Matches in Forensic Fields Other Than DNA

To date, the insistence on stringent standards governing scientific proof has been more pronounced in civil cases involving money than in criminal cases involving life and liberty. However, that is beginning to change as criminal defense counsel absorb the lessons about assumptions that must be validated when proof is offered that samples match. Defense counsel are beginning to challenge some traditional forms of forensic expertise.

Handwriting Analysis

One of the earliest attacks on scientific evidence began in 1989 when four law professors wrote an article criticizing handwriting analysis as a species of junk science.⁶ A dozen years later, this challenge is beginning to bear fruit. A recent NIJ publication concluded that “Questioned document examination, which encompasses forgeries, tracings, and disguised handwritings, is currently in a state of upheaval.”⁷

Courts have begun to cite weaknesses in scientific reliability, such as “no known error rate, no professional or academic degrees in the field, no meaningful peer review, and no agreement as to how many exemplars are required to establish the probability of authorship.”⁸ Consequently, some courts have expressed doubt about the ability of a document examiner to reach an accurate conclusion about a match between writings that a defendant is known to have authored and the writings in question, which the defendant denies

having written. Although judges will allow the expert to point out similarities and differences in the handwriting, some will not allow the expert to express an opinion about authorship. One court has gone so far as to exclude a prosecution expert as a witness on the ground that no scientific studies established that an expert could match samples of block printing under the circumstances of that case in which the defendant had learned to print in English as a second language.⁹

Few defense counsel are as yet moving to exclude testimony by document examiners, but this will undoubtedly change as they become aware of the newer cases.

Fingerprints

Until very recently, it would have been heretical to suggest that an expert might be prevented from testifying that a fingerprint at a crime scene could have come only from the accused. The uniqueness of fingerprints was assumed, and indeed early commentators on DNA often stressed that fingerprinting could conclusively establish identity, while DNA profiling had the capacity to yield only a probabilistic conclusion. Now, we have been told that this assumption about the uniqueness of fingerprints has never been validated. Nobody really thinks there is a problem when full sets of fingerprints are compared. But what if the crime scene sample is only a partial, latent print? Although an expert may be able to match such a print to a print from a defendant, virtually no scientific work has as yet been done on the significance of such a match. How likely is it that only the defendant and no one else could leave such a partial print?

Defense counsel have begun to challenge the admissibility of testimony by fingerprint experts who claim that they can conclusively identify the defendant on the basis of a partial print. Thus far all court challenges have been unsuccessful. But the issue is unlikely to disappear because the academic

community and the media have become interested and public defenders are well aware of this controversy. It may be, however, that DNA will have the final word. It is becoming possible to extract DNA from latent fingerprints, and it may be that a shift to DNA analysis rather than fingerprinting will mean that issues relating to fingerprint validation can be bypassed. Other forensic matching techniques will undoubtedly be questioned as well.

Policy Implications for the Future

I hope you can see the impact DNA has had on producing more accurate laboratory results and more reliable evidence in the courtroom. All this, of course, has a cost. Even though the cost of running a DNA test may be decreasing, quality assurance and control programs require hiring additional personnel. Ultimately, improving laboratory performance costs more money—whether the laboratory in question is doing DNA analyses or other types of forensic testing. It is also expensive to devise and implement studies designed to validate the accuracy with which various kinds of samples can be matched.

Although DNA testing has helped us see deficiencies in forensic proof, priorities will have to be set in funding laboratories and research. Decisions will have to be made about the relative importance of different forensic techniques, and choices will have to be made even within the field of DNA testing. For instance, how much DNA must be collected at a crime scene? Does every piece of evidence have to be checked to determine whether DNA is present, regardless of the other evidence in the case and the nature of the crime? Will defendants be able to claim that they were deprived of a valid defense because insufficient evidence was subjected to DNA testing?

Murder and rape, the two crimes we probably fear the most, are particularly likely to result in evidence that is susceptible to DNA analysis. But what about other crimes? The British, whose databanks are more extensive than

ours, claim that DNA is solving many of their property crimes because perpetrators leave items such as cigarette butts at crime scenes. However, as criminals become more sophisticated about DNA analysis, will they avoid leaving any biological samples behind, just as they now know to wear gloves to avoid fingerprint analysis? These and numerous other questions will play a role in how we expend resources on training law enforcement personnel and in how we choose to allocate funding for the development of new forensic techniques.

In brief, DNA testing has shown us ways to raise the bar so that the forensic sciences can better withstand scientific scrutiny. But we have not yet come to terms with the consequences of this heightened sensitivity in how we allocate resources. This hesitation is understandable because we do not yet know how far courts will go in rejecting proffered prosecution expertise. In the case of questioned document examiners, we can see that the “handwriting” is on the wall. The number of judges who are restricting the use of such evidence as not satisfying scientific standards is gradually increasing. Although challenges to fingerprint evidence are currently being rejected, they will undoubtedly be renewed, particularly because the issues are being discussed more intensely. These are probably only the forerunners of future attacks on other forms of traditionally admitted forensic evidence. At this point, what we can say with confidence is that DNA testing has raised a host of questions for the future. It has also greatly improved the prospects of justice in the criminal justice system.

Question-and-Answer Session

Ted Gest, Senior Fellow, Criminal Justice Journalists, University of Pennsylvania: Professor Berger, could you bring us up to date on jurisdictions that have considered taking DNA samples from every felony arrestee? I think that

has been proposed in many jurisdictions. Could you summarize the arguments for and against that?

M.B.: I think I am going to field that question to Chris Asplen, whom I see sitting right there, who I am sure has a more accurate count than I do.

Chris Asplen, National Commission on the Future of DNA Evidence, Washington, D.C.: I am the executive director of the National Commission on the Future of DNA Evidence. The national trend is certainly toward the inclusion of a greater scope of offenses. By now, there are well over 20 States (probably closer to 30 or 32) that either have, or are considering, felony legislation including all felons. It literally changes weekly as different legislatures grab hold of the idea. In terms of pending legislation regarding arrestees, there are probably well over 12 by now that are actually considering that kind of approach. New York, Michigan, and California entertain the idea every now and then. But I can get you a specific list afterwards if you can give me your card.

Daniel A. Cunningham, Counsel, Office of Legislative Affairs, Administrative Office of the U.S. Courts, Washington, D.C.: When requests are made for postconviction forensic DNA testing, could you give us your opinion as to how courts, both State and Federal, are dealing with those requests and whether or not there is a need for legislation such as the Innocence Protection Act of 2001 (H.R. 912 S.486)?

M.B.: That is a very difficult question to answer because we really have very little empirical evidence on how many requests have been made in the past. Until very recently, only New York and Illinois had statutes that allowed one to make a request for access to DNA testing postconviction, without some kind of a time bar being applied. Most States, if you asked them formally, would tell you that this was governed by their statutes on access to newly obtained evidence and those statutes had time bars in them.

That didn't mean, however, that judges in those States didn't grant requests for DNA testing. They did. They found all kinds of mechanisms for doing so. Sometimes it was done simply because the prosecutor cooperated with the defense counsel. In other words, there was an unofficial way of doing things that obviously led to results in many cases.

At this point something like 30 or 40 States have either passed, or are thinking of passing, legislation that would regulate this area of requests for postconviction DNA testing. Some of those statutes have stringent requirements. Tennessee and Washington, for instance, basically limit their statutes to people who are on death row. Under those statutes someone like the person in Oklahoma who was sentenced to 65 years would not have had a right to apply for DNA testing. Would that have meant that if he had been imprisoned in those States, he would have been helpless to get testing done? Not necessarily. There might well have been a judge who said, "I've got inherent powers; this is an absolute injustice. I am going to order the prosecutor to look for the sample and test." So I think it is very hard to answer this question.

What I do think is very useful about such legislation, as opposed to the informal system that we have had, is that it is generating public attention to the issue and making people aware of how arbitrary and impossible, at times, the legal system has been about correcting errors. It is focusing attention on the factors that are important and need to be taken into account. I think we need to educate people about the issues out there. A legislative initiative does that better, probably, than piecemeal judicial adjudications.

Manuel B. Suber, Metropolitan Police Department, Washington, D.C.: In the Oklahoma case, was the problem with the technician who was conducting the hair analysis or with the recovery of hair from the scene?

M.B.: From what I have read in two articles from the *New York Times*, it sounds as though the problem may well have been with the technician because the articles quote from a number of people who say that they knew there was a problem for years with some of the results in her cases. The *Times* reported that when the FBI investigated, it couldn't come up with the kinds of matches she had come up with using the techniques that she allegedly was using at the time. This case goes back 15 or 16 years. The defendant has served 15 years of his sentence.

But I think that this case points out what has happened since *Daubert* and since DNA. That defense counsel 15 or 16 years ago could have challenged some of these forensic techniques on the basis of "what makes you think that you can match?" After all, the four professors who challenged handwriting analysis in their piece 15 years ago did. But that somehow wasn't being done. I think we have all become more sophisticated. Not just, as I said, with regard to DNA testing, but with all kinds of forensic testing. We are living in a different climate now.

Ellen J. Goldberg, Editor, Bureau of Justice Assistance, U.S. Department of Justice, Washington, D.C.: Last night on "60 Minutes," Dan Rather interviewed the technician in Oklahoma City. One of the things brought up that I had never thought about was the role of the forensic scientists when labs are linked with police departments, and how the scientists viewed themselves as working as extensions of the police department rather than as scientific investigators maintaining their objectivity. I was wondering what you thought about that.

M.B.: Well I think that is certainly a problem. I think it is very difficult at times for the police to retain objectivity when they are investigating a horrendous, horrendous crime and are convinced that they know who did it. And that conviction conveys itself to everyone else working on the case. It is very hard to think of ways to divorce the crime labs from their interaction

with the police. Obviously, independence is needed in many instances, but it has been hard to achieve. With regard to proficiency testing of DNA technicians, I've been told that it is very hard to develop proficiency tests because when you give a lab a made-up sample that purports to come from a case, the first thing that the technician will do is call up the police and ask, "Is there such a case around?" In other words, it's very hard to keep walls between them because they discuss ongoing cases among themselves. I think this issue needs to be studied. One possibility might be to have more than one lab working on a crime to validate the techniques that are used, but, of course, that would cost more money.

This is one of the questions that we are going to have to consider in the future.

Victor Stone, General Counsel, Office of the Corrections Trustee of the District of Columbia, Washington, D.C.: One case that you haven't mentioned, that attained more public renown than any other case is the O.J. Simpson case. I would like to know your views on whether or not the challenges made to the DNA evidence in that case were appropriate and something you think we will see more of, or whether you think there were inappropriate obfuscations that the judge let get out of hand and that other judges will attempt to contain. What are your views as to how that fits in with the future of DNA's admission at trial.

M.B.: Of course, the attack in that case was not on the validity of the DNA evidence or on the validity of the laboratory analysis. It was really on how the evidence was gathered at the crime scene, and everything else followed from that. If the evidence had been planted or moved then even though the analyses were correct, you were going to have error. This is going to be a problem on both the prosecution and the defense sides. I had mentioned a Texas murder-rape case where the prosecution argued that although the semen found on the victim did not contain the defendant's DNA but that of

someone else, that did not prove that the defendant was innocent, because the victim might have had consensual sex with another man, and the defendant might not have ejaculated.

This tactic on the prosecution side is very similar to tactics on the defense side in the O.J. Simpson case. We have very ingenious lawyers in the United States. I think that we increasingly are going to see attempts by both prosecution and defense to come up with scenarios like, "But if this happened, it doesn't prove what the DNA evidence purports to prove." And don't forget that finding the defendant's DNA evidence at a crime scene means only that something associated with that person at some point in time arrived at the crime scene. It does not mean that that evidence was not planted; it does not mean that it wasn't dropped there 6 months earlier. All it means is that at some point that person had contact with that object. I think that the possibility that sophisticated burglars will plant their enemies' cigarette butts at a crime scene is something that we will see. Which is why I think that we really need to beware of putting all of our resources into DNA profiling as if it were a magic bullet and to think as well about other techniques for proving crimes.

The O.J. Simpson case also points out that we have to give careful attention to police training and perhaps to developing more specific protocols of what has to be documented at a crime scene. Certainly we know that all kinds of things went wrong in that L.A. investigation, and we know that all kinds of things seem to have gone wrong with the L.A. police department. Just as one can develop standards for the labs, I think that one could develop better standards at the crime investigation scene, which might eliminate some of these problems. But I do not think that we can ever have a failsafe system that will make everything that investigators do wrong, accidentally or deliberately, go away.

Chris Asplen: Professor Berger, we now have a number of elected district attorneys who are proactively investigating postconviction cases, for example, elected DA's in San Diego, Texas, Minnesota, New York, and the Attorney General's office in Michigan. Even the U.S. Department of Justice has reviewed its death row cases. Given the advent of DNA evidence becoming the predominant focus of these investigations and given the extent to which the adversarial nature of our system is its bedrock, do you see any downsides to prosecutors taking ownership of postconviction review?

M.B.: I see some. I know, of course, the DA in San Diego, Woody Clark, who was on the National Commission, and his staff have been reviewing all the cases in San Diego of people who were convicted and incarcerated before 1992—the time when they really started doing DNA testing actively. They are reviewing those convictions to see whether any of them might be cases in which DNA testing of biological evidence (if they can find it) can possibly clear the person who is convicted.

One thing has disturbed me about these case reviews—although I really don't know to what extent his staff is insisting on the following factor—Clark has said that his office screens only those cases in which the inmate has made a continual claim of innocence throughout the entire period of being incarcerated. That worries me, because we have a fair amount of evidence of false confessions to crimes in the United States. We have a lot of people (as we can see from many of these cases) who are of borderline intelligence who are arrested in these cases. We have enormous pressures at times being brought to bear on suspects. We have confessions that are taken and not recorded. And for all of those reasons, I am a little suspicious that because someone may have said at one point, "OK. OK. I did it," and then has recanted or has never said anything again that that confession should preclude review. Because we know that in some cases there have been vacations of convictions when there were previous confessions or self-incriminatory statements.

I don't know if there are other issues like that that might affect DA review; perhaps someone outside the office of the DA should look at these cases as well.

Thomas M. MacLellan, Policy Analyst, Center for Best Practices, National Governors' Association, Washington, D.C.: With the cost of DNA testing decreasing, a number of States are looking at testing not just felonies but misdemeanors, and some States are considering testing all arrestees. Could you talk about the difference between doing DNA testing at time of arrest and fingerprinting? They are both fairly intrusive but I understand with swabs, DNA testing is a fairly quick procedure; it is not drawing of blood. Could you talk about some of the legal differences or potential differences that you see?

M.B.: In terms of maintaining these huge databanks?

Thomas M. MacLellan: Yes, in terms of databases, if I were arrested for DWI, I'm fingerprinted and my information is uploaded. Police can obviously do the same with DNA evidence.

M.B.: That is a huge issue that I don't think we have time to get into, but certainly one of the differences is, at the moment, there have been huge backlogs in analyzing the DNA that has been taken from convicted felons. Adding arrestees to that backlog would obviously overload the system even more. There are many other concerns about privacy, about racial profiling's impact on who gets arrested in the United States, and what those databanks would then look like, which raise a host of very important issues that need to be kept in mind. But we really do not have time to touch on all of this today.

Notes

1. 509 U.S. 579 (1993).
2. *General Electric v. Joiner*, 522 U.S. 136 (1997); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).
3. National Commission on the Future of DNA Evidence. 2000. *The Future of Forensic DNA Testing: Predictions of the Research and Development Working Group 7*. Washington, DC: U.S. Department of Justice, National Institute of Justice, NCJ 183697.
4. *Id.* at 1.
5. 433 F.2d 431 (6th Cir. 1970).
6. Risinger, D. Michael, et al., 1989. "Exorcism of Ignorance as a Proxy for Rational Knowledge: The Lessons of Handwriting Identification 'Expertise.'" *University of Pennsylvania Law Review* 137: 731.
7. National Institute of Justice. *Forensic Sciences: Review of Status and Needs*. Issues and Practices. 1999. Washington, DC: U.S. Department of Justice, National Institute of Justice, NCJ 173412.
8. *United States v. Van Wyk*, 83 F.Supp. 2d 515, 523 (D.N.J. 2000), *aff'd*, ___ F.3d ___ (3d Cir. 2001).
9. *United States v. Fujii*, 2000 WL 1468736 (N.D.Ill. 2000).

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