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BIG BROTHER AND HIS SCIENCE KIT: DNA DATABASES FOR 21ST CENTURY CRIME CONTROL?

PAUL E. TRACY, Ph.D.,* AND VINCENT MORGAN**

I. INTRODUCTION

Every human being carries with him from his cradle to his grave certain physical marks which do not change their character, and by which he can always be identified—and that without shade of doubt or question. These marks are his signature, his physiological autograph, so to speak, and this autograph cannot be counterfeited, nor can he disguise it or hide it away, nor can it become illegible by the wear and the mutations of time. This signature is not his face—age can change that beyond recognition; it is not his hair, for that can fall out; it is not his height, for duplicates of that exist; it is not his form, for duplicates of that exist also, whereas this signature is every man's very own—there is no duplicate of it among the swarming populations of the globe!

—Pudd'nhead Wilson¹

Mark Twain was speaking about fingerprints, of course, but prophetically, he might just as well have been speaking about DNA.² The protagonist in *Pudd'nhead Wilson* was an attorney who had a passion for collecting fingerprints. One wonders if a modern-day version of Twain's vivid character would have the same affinity for collecting samples of DNA for law enforcement purposes. As law enforcement agencies the world over have been amassing huge collections of fingerprints since the closing

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¹ MARK TWAIN, *PUDD'NHEAD WILSON AND THOSE EXTRAORDINARY TWINS* 108 (W.W. Norton & Co. 1980) (1894).

² Except for the case of identical twins, no two people have exactly the same DNA. See DAVID FISHER, *HARD EVIDENCE* 150 (1995).

days of the nineteenth century,³ so too have they recently begun to collect, organize, analyze, and store collections of DNA samples for forensic purposes.

This trend, as was the case with fingerprints, has been hailed as a godsend for crime fighting, but also decried as an evil at the same time. However, as with fingerprints, it looks like DNA testing and associated databases are here to stay. Accordingly, the current proliferation of DNA databases and their likely further expansion raise three significant policy issues and attendant questions. First, how do we utilize this new technology, while protecting against misuse and abuse? The question is really much more complex than this, and it certainly covers a multitude of sub-issues. At the essential core of this issue is the same question which appears in virtually every facet of our daily lives today. Science and technology are progressing at exponential rates, while the ordinary citizen struggles to keep up; so, what happens when technology, and the manifold advances it spawns, transcends society's ability to regulate such technology? Further, in the absence of a serious and well-informed debate about the advisability and demonstrative value of putting into practice whatever advances new technologies may provide, will particular interest groups exert unchallenged influence, if not complete hegemony in a particular area, and successfully lobby for very large expenditures of public financing?

In order to address the first issue properly, the investigation of a second issue requires careful and immediate attention. Although technology makes certain advances possible, are these advances truly necessary? Moreover, will they produce the alleged benefits and if so, at what cost? This paper will not attempt to solve this dilemma in a macro context. Rather, our interest centers on the forensic application of DNA technology, and in particular, the construction of scientific databases that contain such information. In the past few years, supporters of DNA testing for forensic applications have made remarkable claims about the potential of DNA testing as a crime fighting tool and have touted DNA as the next great breakthrough since

³ See *People v. Jennings*, 96 N.E. 1077, 1081-82 (Ill. 1911).

fingerprints. It should be noted at the outset that we have no quarrel with DNA testing per se. The scientific community has conclusively demonstrated the reliability and validity of DNA testing and that the "matching" of an evidence sample with that taken from a suspect for purposes of exclusion versus inclusion can be highly successful. Further, although at one time there was considerable debate about the admissibility of DNA evidence, the point is now moot.⁴

However, our inquiry is guided by a healthy skepticism about the widespread collection of DNA samples and their subsequent storage in databases as a crime control measure. For example, a new program in New York, announced as recently as August 7, 1999, requires (as of December 1, 1999) that any person convicted of certain designated felony offenses will have his/her DNA stored in a database.⁵ The program will involve both persons newly convicted (about 25,000 persons per year) and the retroactive testing of persons already in the criminal justice system (approximately 100,000 prison inmates).⁶ Estimates of the cost of the program range from \$10 million to \$20 million.⁷

Regarding the potential of such programs as a law enforcement tool, Ronald S. Neubauer, the president of the International Association of Chiefs of Police offered the following comments:

I think it's one of the most important developments in forensic science in law enforcement And in the 21st century, I not only see DNA being a tool to solve crimes, but as a way to insure that innocent people are not being convicted of crimes they did not commit.⁸

⁴ See Rockne P. Harmon, *Legal Criticisms of DNA Typing: Where's the Beef?*, 84 J. CRIM. L. & CRIMINOLOGY 175 *passim* (1993); Peter J. Neufeld, *Have You No Sense of Decency?*, 84 J. CRIM. L. & CRIMINOLOGY 189 *passim* (1993); William C. Thompson, *Evaluating the Admissibility of New Genetic Identification Tests: Lessons from the "DNA War"*, 84 J. CRIM. L. & CRIMINOLOGY 22 *passim* (1993).

⁵ See Richard Perez-Pena and Jayson Blair, *Albany Plan Widely Expands Sampling of Criminals' DNA*, N.Y. TIMES, Aug. 7, 1999, at A1.

⁶ See *id.*

⁷ See *id.*

⁸ *Id.*

It is precisely this type of unsupported assertion, if not blatant exaggeration, concerning the crime fighting value of DNA, together with the manifold costs of DNA testing and database construction, that frame the scope of our analysis. To put it more simply, will DNA databases provide law enforcement and the subsequent criminal prosecutions with measurable and significant effects on crime? Further, can these effects, once demonstrated and replicated on a wide-scale basis, be produced in a cost-effective manner?

Assuming that DNA databases are indeed valuable in the fight against crime, and can be administered in a cost-effective fashion, a final remaining issue arises concerning appropriate regulations surrounding DNA database construction, maintenance, and access. As will be shown below, since there are various schemes concerning who should be required by statute to contribute DNA samples, this question indeed poses significant legal and ethical issues which must not be ignored or dismissed amidst the fervor surrounding the alleged benefits of DNA testing.

This paper is organized as follows: Part II provides a brief introduction to DNA testing and its increasing application in criminal jurisprudence. In this section we devote special attention to federal initiatives that seek to expand the use of DNA (and DNA databases) owing to its reputed evidentiary value. In Part III we provide an analysis of the efficacy of DNA testing and associated databases, from both a "pure" effectiveness basis (i.e., DNA's impact on crime) and a "cost" effectiveness standpoint (i.e., the crime level effect per unit cost of DNA testing and storage). Part IV reviews predictions of what the future may hold for DNA and related databases, and the normative policy concerns regarding current use and likely future expansion. Here our goal is to provide informative commentary on the fundamental question of concern: are we better off living in a world where our most basic and singularly unique characteristics are on file, serving as a constant shadow over our daily lives? Part V provides a discussion of how DNA databases are being designed, and a survey of the existing law in the United States as to their present structure. Part VI offers a summary and the

conclusions of the inquiry into the ultimate value of DNA databases.

II. THE EMERGENCE OF DNA TYPING

A. DNA IS DISCOVERED

The DNA story begins with two gentlemen named Watson and Crick who came upon a remarkable discovery in 1953. They unraveled the mystery of DNA for the first time, obtaining a Nobel Prize for their efforts.⁹ Like many scientific discoveries, it would take years to realize the full magnitude and potential of this pioneering work. It was not until the early 1980s that Dr. Alec Jeffreys at the University of Leicester in England pioneered the use of DNA in the law enforcement arena.¹⁰ The Federal Bureau of Investigation (FBI) quickly followed suit in 1988.¹¹

DNA is the chemical deoxyribonucleic acid, which carries the genetic code of each human's body—the genetic blueprint we inherit from our parents. DNA, while not actually a part of saliva, urine, perspiration, or tears, is found in one place, and only one place—the nucleus of cells.¹² Because these cells are found in all bodily fluids, tissue, and hair, DNA is an omnipresent residue that trails us wherever we go. These physical properties of DNA have made it an important tool in fighting crime. Presently, there are three principal methods by which DNA testing is usually accomplished: (1) Restriction Fragment Length Polymorphism (RFLP); (2) Polymerase Chain Reaction (PCR); and (3) Short Tandem Repeats (STRs).¹³ Depending upon the quantity and quality (i.e., molecular weight and possible degradation) of the forensic sample available, the time frame available for testing, and other factors, one or more of these methods will generally produce valid results for making a “match” between an evidence sample and a suspect sample for

⁹ For a general discussion of DNA and its discovery, see THE COLUMBIA ENCYCLOPEDIA 1980-81 (Colum. Univ. Press 1993) (found under “nucleic acid”).

¹⁰ FISHER, *supra* note 2, at 151.

¹¹ *See id.*

¹² *See id.*

¹³ *See, e.g.*, Victor Walter Weedn & John W. Hicks, *The Unrealized Potential of DNA Testing*, NAT'L. INST. OF JUSTICE RESEARCH ACTION, June 1998, at 7.

purposes of excluding or failing to exclude the suspect as the perpetrator.

B. FEDERAL DNA INITIATIVES

As might be expected, the United States Department of Justice (DOJ) has taken the lead in developing DNA applications for use by law enforcement agencies and subsequent criminal case disposition. The DOJ has utilized both the FBI and the research and funding capabilities of the National Institute of Justice (NIJ) to develop a far reaching set of programs for DNA applications. The FBI, as noted above, began its involvement with DNA in 1988. Since then, the FBI has continued to play a leading role and has developed a number of DNA initiatives.

First, the FBI maintains two DNA analysis units. DNA Analysis Unit I performs laboratory testing on evidence samples taken from violent crime scenes. Body fluids and fluid stains are examined serologically and then the DNA is characterized through RFLP and/or PCR testing. In 1996, the FBI opened another unit, DNA Analysis Unit II, which uses mitochondrial DNA testing on evidence samples when the sample is degraded or contains an insufficient amount of DNA for either RFLP or PCR testing.¹⁴ Second, the FBI operates the Combined DNA Index System (CODIS) which began as a pilot project in 1990. CODIS is a software-based system which uses two indices to facilitate violent crime investigations.¹⁵ Third, the DNA Identification Act of 1994 authorized the FBI to establish further DNA indices.¹⁶ The Convicted Offender Index contains DNA profiles of felons convicted of violent crimes and sex offenses, while the Forensic Index contains DNA profiles from crime scenes.¹⁷ The CODIS software permits DNA samples across the two indices to be compared for possible matches thereby facilitating criminal investigations.¹⁸ Fourth, in October 1998, the FBI announced its

¹⁴ See *Scientific Analysis Section*, (last modified Feb. 20, 1999) <<http://www.fbi.gov/programs/lab/org/sciana.htm>>.

¹⁵ See *The National DNA Index System* (Oct. 13, 1998) <<http://www.fbi.gov/pressrm/pressrel/pressrel98/dna.htm>> (FBI Press Release).

¹⁶ 42 U.S.C. § 14132 (1994).

¹⁷ See *The National DNA Index System*, *supra* note 15.

¹⁸ See *id.*

newest tool—the National DNA Index System (NDIS).¹⁹ The NDIS is an electronic system that will allow federal, state, and local law enforcement agencies to contribute DNA samples to the national database and thereby enhance the investigation of violent crimes.²⁰ Fifth, the FBI will soon inaugurate a Federal Convicted Offender DNA Database. The Anti-Terrorism and Effective Death Penalty Act of 1996 authorized the FBI to implement a supplement to CODIS by requiring federal prisoners, who are convicted of an offense against a minor or a sexually violent offense to provide a DNA sample prior to release from a federal correctional institution.²¹

The Department of Justice has also been providing significant leadership on DNA applications for law enforcement through the National Institute of Justice (NIJ). NIJ provides research and program funding on a wide range of topics, including DNA, through its Science and Technology division. Since 1986, NIJ has produced a number of significant publications on DNA and has funded numerous projects on improving DNA technology.²² Arguably, an NIJ grant to the Institute for Law and Justice achieved a milestone in DNA applications for forensic purposes.²³ This pioneering study investigated the use of DNA testing to exonerate convicted offenders through a process of post-conviction relief. Attorney General Janet Reno was so impressed by the results of the study that she directed NIJ to establish a National Commission on the Future of DNA Evidence.²⁴

¹⁹ See *id.*

²⁰ See *id.*

²¹ See Statement of Louis J. Freeh, Dir., Fed. Bureau of Investigation, *Hearings on President's Fiscal Year 2000 Budget, Before the House Comm. on Appropriations, Subcomm. for the Dept's of Commerce, Justice, and State, the Judiciary, and Related Agencies*, 106th Cong. (1999).

²² See, e.g., Weedn & Hicks, *supra* note 13; *Automated DNA Typing*, NAT'L INST. OF JUSTICE RESEARCH PREVIEW (Nat'l. Inst. of Justice, Wash., D.C.) Feb. 1997; *Certification of DNA and Other Specialists*, NAT'L INST. OF JUSTICE UPDATE (Nat'l. Inst. of Justice, Wash., D.C.) Sept. 1995; *Getting to Fast Available, Inexpensive DNA Testing*, NIJ ONLINE NEWSLETTER (Nat'l. Inst. of Justice, Wash., D.C.) June 1998.

²³ See EDWARD CONNORS ET AL., *CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL* (1996).

²⁴ See *Nat'l Comm. on the Future of DNA Evidence*, (last modified Jan. 16, 2000) <<http://www.ojp.usdoj.gov/nij/dna/welcome.html>>.

The Commission's agenda addresses five areas with respect to DNA: (1) DNA in post-conviction; (2) legal issues on admissibility and discovery; (3) training for crime scene collection; (4) laboratory capabilities; and (5) the impact of future technologies.²⁵ The Commission has held five meetings since its inception in March 1998. The work of the Commission is available in the *Proceedings* of the five meetings, which span some 500 pages.²⁶

III. DNA EFFECTIVENESS: THEORY VS. REALITY

A. HOW DNA DATABASES ARE THEORETICALLY SUPPOSED TO WORK

In theory, a DNA database consists of DNA samples obtained from two sources: crime scene evidence and individual "donors."²⁷ The term "donors" is used simply for utility here, and as Part V.B will show, who is included in the donor group varies substantially from jurisdiction to jurisdiction. It should be noted here that other sources of DNA might provide samples for these databases, such as unidentified human remains or the DNA of relatives of missing persons.²⁸ However, these records typically constitute only a small part of the average DNA database, and consequently, will be disregarded for the purposes of this paper.

Once a DNA sample intended for storage in a DNA database is obtained, it is sent to a DNA laboratory for processing. Once it has been analyzed, the results are stored in a central database.²⁹ After this process is completed, the results of every DNA specimen in that database can be compared with every other sample in the database, and these samples can also be checked against new samples taken from people, crime scenes, or otherwise obtained elsewhere.

²⁵ See *id.*

²⁶ See *id.*

²⁷ See, e.g., 42 U.S.C. § 14132 (1994).

²⁸ See, e.g., ALA. CODE § 36-18-24 (1998).

²⁹ See, e.g., CONN. GEN. STAT. § 54-102 i to j (1998).

The ultimate value of a crime-fighting measure depends, not upon theory, or exaggerated speculations, or even anecdotal accounts, but rather on the real-world effectiveness of the technique. Thus, collection and study of empirical data is crucial to evaluating the advantages and disadvantages of such methods.³⁰ The remainder of this section will first analyze the effectiveness of DNA databases from a crime-level or "pure effectiveness" standard and then consider the additional factor of cost to determine the ultimate value of DNA databases.

B. PURE EFFECTIVENESS

Clearly, because the DNA databases are relative newcomers to the fight against crime, they have yet to make a significant impact on crime rates. This should not, however, be viewed as a failure, at least at this early juncture in their history. Due to the very nature of a database, its utility theoretically increases proportionally as the amount of data contained in it expands. Therein lies the problem: DNA analysis is still quite time consuming, and this has led to a massive backlog of unanalyzed samples in our nation's crime laboratories. This backup may contain as many as 450,000 samples waiting to be analyzed.³¹ As of the date of this writing, the Texas Department of Public Safety had analyzed just over one-half of the samples it had received. As these backlogs begin to recede, the effectiveness of the databases will continue to rise.³² Crime labs across the country are continuing to expand and upgrade their existing technology, and the technology itself is rapidly progressing.³³

³⁰ In this vein, our focus on empirical data to evaluate the wisdom of a particular law reminds us of Justice Holmes' admonition, "[F]or the rational study of the law the black-letter man may be the man of the present, but the man of the future is the man of statistics and the master of economics." OLIVER WENDELL HOLMES, JR., *COLLECTED LEGAL PAPERS 187* (Harcourt, Brace & Co. 1921). Thus, it is with this guiding principle in mind that we turn to the analysis of statistical evidence to determine the true utility of DNA databases.

³¹ Richard Willing, *With DNA Databases on Fast Track, Legal Questions Loom*, USA TODAY, Mar. 1, 1999, at 5A.

³² See generally Weedn & Hicks, *supra* note 13.

³³ Robin Lloyd, *Lab on a Chip May Turn Police Into DNA Detectives*, WASH. POST, Mar. 1, 1999, at A3.

Despite the backlogs, anecdotal evidence has already demonstrated that DNA databases can have remarkable effectiveness in solving crimes. For example, while these databases were still in their infancy, a brutal rape-murder in Illinois was solved using the Illinois DNA database.³⁴ A young man was murdered, and his wife was raped, shot point-blank in the head, and left for dead.³⁵ More than a year and a half later, the police had no solid leads.³⁶ Forensic specialists obtained a DNA profile from the perpetrator's semen, and compared that with the Illinois DNA database.³⁷ At the time, this database had only 600 samples on file from convicted sex offenders.³⁸ Despite this handicap, the crime scene evidence matched DNA from a man who had already served time for sexual assault.³⁹

In Texas, the first "cold hit"⁴⁰ occurred in May 1998, when DNA evidence recovered from crime victims was matched against a DNA record on file in the Texas DNA database.⁴¹ In this case, two young Granbury girls were sexually assaulted in 1993 in a dry creek bed near their home.⁴² Authorities had no leads on the case.⁴³ However, the perpetrator was subsequently convicted of a 1995 sexual assault.⁴⁴ As a result of the conviction, his DNA was sampled and included in the Texas DNA database.⁴⁵ The crime scene evidence from the 1993 incident was run against the state database and it matched the suspect.⁴⁶ After further tests were taken to confirm the match, the suspect,

³⁴ See FISHER, *supra* note 2, at 154-55.

³⁵ See *id.*

³⁶ See *id.*

³⁷ See *id.*

³⁸ See *id.*

³⁹ See *id.*

⁴⁰ "Cold hit" is a term used to describe a situation where law enforcement has no leads in a case, but run biological evidence recovered from the crime scene against a DNA database. A "cold hit" occurs when a match is found, identifying a potential suspect who was unknown before.

⁴¹ Rebeca Rodriguez, *Texas Officers Solve 1st Crime Using DNA Database, Hope for More*, AUSTIN AMERICAN-STATESMAN, Sept. 10, 1998, at A1.

⁴² See *id.*

⁴³ See *id.*

⁴⁴ See *id.*

⁴⁵ See *id.*

⁴⁶ See *id.*

who was still serving time for the 1995 assault, confessed to the rapes.⁴⁷

Nationwide, the FBI database has produced some 583 cold hits to date.⁴⁸ The National FBI database (CODIS) currently contains DNA samples from over forty-two states, and is expected to include DNA from all fifty states within the near future.⁴⁹ England, which started its DNA database before the FBI, has had over 28,000 matches.⁵⁰ The scope of Britain's database is considerably wider in terms of whose DNA is included than that of most United States jurisdictions,⁵¹ and it already has more than 360,000 samples indexed and on file.⁵² It is expected to eventually encompass more than one third of all English men between the ages of sixteen and thirty.⁵³

These isolated successes of DNA databases are interesting and laudatory. However, they do not provide systematic, conclusive, and widespread evidence that such databases, especially the expanded or "all-inclusive" variety, will be proven useful in the fight against crime. Are we to conclude that these few examples will increase dramatically as the databases proliferate and become interconnected? In order to address this fundamental question, we provide data below that exposes the usefulness of DNA databases to a proper scientific test on data concerning law enforcement as well as prosecutorial functions in the fight against crime.

1. DNA Effectiveness: Law Enforcement

There are two basic applications for DNA in law enforcement, and these two widely divergent applications must be differentiated so that the proper focus of our inquiry will be clear. First, there is DNA testing concerning known suspects and evi-

⁴⁷ See *id.*

⁴⁸ See Lloyd, *supra* note 33.

⁴⁹ *Id.*

⁵⁰ Nicholas Wade, *National DNA Database to Debut as Anti-Crime Tool*, DALLAS MORNING NEWS, Oct. 12, 1998, at A1.

⁵¹ The English system allows for samples to be taken on arrest, much like the upcoming Louisiana approach. See Weedn & Hicks, *supra* note 13.

⁵² *Id.*

⁵³ *Id.*

dence samples. Here, the DNA extracted from bodily fluids or tissue found at a crime scene (e.g., blood or semen), or a victim's DNA extracted from residue left on an offender (e.g., the victim's blood) are compared to determine if there is a match. It would seem that in the absence of other explanatory information, a DNA match or non-match would be dispositive of the suspect's involvement in or his/her innocence of the crime. We wholeheartedly and unequivocally endorse this particular use of DNA testing with known offenders, and further, encourage its use as broadly as possible. The only meaningful caveats we would offer involve proper training for crime-scene technicians and laboratory personnel as well as sound certification policies and well-conceived oversight and monitoring processes for both evidence collection and subsequent DNA testing.⁵⁴

However, a second (and highly touted) use of DNA concerns the construction of massive DNA databases to facilitate what we shall refer to as the "DNA mining process." As noted above, the logic behind DNA databases appears convincing, and concomitantly, such databases are touted as major crime fighting tools. It would seem to make sense that all that society needs do to fight crime effectively is: (1) capture the DNA from known offenders (the exact selection of offenders remains open to debate); (2) store the DNA in a database; and (3) compare the offender bank DNA with that taken from crime scenes. The promised results of course will be the identification and subsequent arrest of a suspect and his or her successful prosecution owing to the DNA match, a result which would not have been possible but for the DNA database. However, when one examines the nature and distribution of crime, the presumed usefulness of DNA databases as a crime control measure may not only be far from obvious or certain, but may turn out to be grossly exaggerated. We thus turn to a consideration of crime events and their susceptibility to DNA applications in law enforcement.

⁵⁴ See NATIONAL INSTITUTE OF JUSTICE, *CERTIFICATION OF DNA AND OTHER FORENSIC SPECIALISTS* (1995).

a. Effectiveness Test #1: UCR Index Crimes

TABLE 1.
CRIME INDEX OFFENSES REPORTED TO FBI IN 1997

Index Offense	Crimes Reported	Percent of Total	Rate per 100,000
Murder/Non-Negligent			
Manslaughter	18,210	0.1%	6.8
Forcible Rape	96,120	0.7%	35.9
Robbery	497,950	58.6%	186.1
Aggravated Assault	1,022,490	7.8%	382.0
Violence Subtotal	1,634,770	12.4%	610.8
Burglary	2,461,100	18.7%	919.6
Larceny	7,725,500	56.8%	2,886.5
Motor Vehicle Theft	1,353,700	10.3%	505.8
Property Subtotal	11,540,300	87.6%	4,311.9
Total Index Crimes	13,175,100	100.0%	4,922.7

1997 UNIFORM CRIME REP. FOR THE U.S., § II, AT 66

In Table 1, data are displayed concerning Index offenses reported to the police and published in the FBI's Uniform Crime Reports for 1997 (the most current data available).⁵⁵ In 1997, there were 13,175,100 Index offenses reported to the FBI.⁵⁶ Index offenses are deemed to be the most serious offenses and are classified as Index crimes, or Part I crimes. Violent Index crimes, which number 1,634,770 offenses, account for only 12.4% of all Index crimes. The vast majority of Index crimes, some 11,540,300 offenses, are crimes against property, accounting for 87.6% of all Index offenses. Further, the rates (per 100,000 persons) clearly indicate that people are at much greater risk of being victims of property offenses than violent crimes, considering that property crimes occur at a rate of 4,311.9 per 100,000, a rate which is seven times higher than that for violent Index crimes (610.8 per 100,000).

⁵⁵ FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTS (1997).

⁵⁶ The FBI's Uniform Crime Reports Index offenses include: murder and non-negligent manslaughter, rape, robbery, aggravated assault, burglary, larceny, and vehicle theft.

Clearly, the vast majority of serious crime is committed against property and not people. Accordingly, the vast majority of law enforcement responses consist of the following: responding to the scene, conducting interviews for purposes of writing a contact report, and subsequent follow-up investigation (usually by detectives). Unfortunately, the overwhelming majority of all police responses involve a property offense in which the victim seldom, if ever, sees or confronts the offender, and very likely has no idea who the offender may be. Further, it is highly likely that these voluminous property offenses do not occur with much trace evidence (even fingerprints) left at the scene, evidence which the police actually collect and upon which they can subsequently base their investigation.⁵⁷

TABLE 2.
CRIME INDEX OFFENSES REPORTED TO FBI
AND CLEARED BY ARREST IN 1997

Index Offense	Crimes Known	Percent Cleared by Arrest
Murder/Non-Negligent		
Manslaughter	14,759	66.1%
Forcible Rape	78,975	50.8%
Robbery	411,137	26.3%
Aggravated Assault	838,711	58.5%
Violence Subtotal	1,343,642	48.3%
Burglary	2,044,918	13.8%
Larceny	6,392,542	19.8%
Motor Vehicle Theft	1,147,391	14.0%
Property Subtotal	9,584,841	17.9%
Arson	76,018	17.5%
Total Index Crimes	11,004,501	21.6%

1997 UNIFORM CRIME REP. FOR THE U.S., § III, AT 214

The lack of physical evidence in property crimes further suggests that Index crimes will likely have differential arrest rates owing to the circumstances surrounding the event, particularly the availability of witnesses or the face-to-face victimization

⁵⁷ See JAMES W. OSTERBURG & RICHARD H. WARD, *CRIMINAL INVESTIGATION* 523 (2000).

of violent offenses as opposed to the impersonal victimization of property offenses. The data in Table 2 represent the Index offenses "cleared" by the arrest of a suspect and attest to the general ineffectiveness with which law enforcement solves major crimes. As would be expected, the police are more successful in arresting suspects in violent crimes (average of 48.3%; 66.1% of murder and non-negligent manslaughter, 50.8% of rapes, 26.3% of robberies, and 58.5% of aggravated assaults) than in property crimes (average 17.5%; 13.8% of burglaries, 19.8% of larceny/theft, and 14.0% of vehicle thefts).

The property offense data are especially noteworthy. The data indicate that 9,584,841 property Index crimes were reported by police agencies that also reported clearance data. Despite this substantial crime volume, only 17.9% were solved by arrest; therefore, 7,869,154 offenses did not result in the arrest of a suspect.

We come then to the issue of *Effectiveness Test #1*. In order for the UCR Index crimes to represent viable candidates for being solved by "DNA mining," there would have to be careful and painstaking crime scene investigation. In particular, the crime scene response would have to include forensic technicians and crime scene technicians (or "criminalists," as they are often called) who would scour the crime scene looking for trace evidence like blood, other bodily fluids, tissue, hair, etc., which carries the DNA of the perpetrator. Thus, the success of the DNA mining expedition for crime-fighting depends on three fundamental prerequisites: First, the criminal has to leave evidence behind at the crime scene, or on the person or clothing of the victim, that contains the criminal's DNA. Second, a trained technician must search the crime scene for this evidence. Third, the DNA-bearing evidence has to be, in fact, found, collected, and be of sufficient quantity and quality to permit DNA testing.

Let us be realistic here about the likelihood of these three prerequisites actually taking place, rather than permit ourselves to be swept up in the euphoria exemplified by the proponents of DNA mining. What do the groups of serious offenses classified by FBI as Index offenses tell us? The answer is straightfor-

ward—that DNA databases will not be greatly successful in increasing the extent to which police solve the vast majority of Index crimes. There are two principal and inescapable reasons for this conclusion. First, law enforcement already does a more than creditable job (i.e., greater than 50% clearance) of solving three out of the four violent Index crimes (66.1% of murders; 50.8% of rapes; and 58.5% of aggravated assaults). Second, as we have shown, the vast majority of Index crimes are property offenses, and this offense type does not carry a high potential for beneficial DNA testing, owing to the fact that the usual property offense crime scene is not likely to have the perpetrator's DNA, and even if it does, such evidence will hardly be looked for, let alone collected and tested for comparison to the databases.

b. Effectiveness Test #2: Non-Index crimes

The argument could be made that Index crimes are not the only offenses worthy of consideration, that there are countless other felonies which come to the attention of the police, for which DNA mining would be beneficial. These other offenses are known as “Non-Index” crimes.⁵⁸ They are deemed to be less serious than Index offenses, and, accordingly, the FBI does not publish counts concerning the number of such offenses that are reported to the thousands of law enforcement agencies across the country.⁵⁹ The FBI does, however, publish data concerning the arrests of suspects for Non-Index events. Table 3 provides FBI estimates of the number of persons arrested in 1997 for the Index crimes and the large category referred to as Non-Index crimes.

The arrest data indicate that only 17.8% of all arrests in the United States involve Index crimes,⁶⁰ and further, only 4.7% of total arrests concern violent Index crimes, while 13.0% involve property Index offenses.⁶¹ The vast majority of arrests, 82.2%, concern Non-Index, or less serious, offenses; of these, only

⁵⁸ See FEDERAL BUREAU OF INVESTIGATION, *supra* note 55.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

10.7% concern crimes against persons.⁶² Thus, even if we ignore the Index vs. Non-Index distinction, only 15.4% of all arrests concern a violent crime (however serious or minor) against a person.⁶³

TABLE 3.
ESTIMATED ARRESTS FOR INDEX AND NON-INDEX OFFENSES
REPORTED TO FBI IN 1997

Index Offense	Persons Arrested	Percent of Total
Violence	717,750	4.7%
Property	2,015,600	13.0%
Arson	20,000	0.1%
Total Index Arrests	2,733,400	17.8%
Non-Index Offense		
Against Person	1,653,600	10.7%
Other	11,004,100	71.5%
Total Non-Index Arrests	12,547,700	82.2%
Total Index Crimes	15,284,300	100.0%

1997 UNIFORM CRIME REP. FOR THE U.S., § IV, AT 222.

Table 4 provides detail about the distribution of arrests across the Index crimes. Clearly, law enforcement activity is substantially devoted to the arrest of persons for crimes other than those involving violence against one or more victims. These data show that only 26.3% of arrests for Index crimes involve violence against a personal victim.⁶⁴ Similarly, Table 5 provides identical data on the arrests made for Non-Index offenses. Again, arrests for violent Non-Index offenses account for only 13% of all the arrests for Non-Index crimes.⁶⁵ The remaining 87% of Non-Index arrests concern a variety of criminal behaviors that are not serious and do not involve any type of assaultive or violent behavior against a person.⁶⁶

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

TABLE 4.
ESTIMATED ARRESTS FOR CRIME INDEX OFFENSES
REPORTED TO FBI IN 1997

Index Offense	Persons Arrested	Percent of Total
Murder/Non-Negligent		
Manslaughter	18,290	0.6%
Forcible Rape	32,060	1.2%
Robbery	132,450	4.8%
Aggravated Assault	534,920	19.6%
Violence Subtotal	717,750	26.2%
Burglary	356,000	13.0%
Larceny	1,472,600	53.9%
Motor Vehicle Theft	167,000	6.1%
Property Subtotal	2,015,600	73.0%
Arson	20,000	0.7%
Total Index Crimes	2,733,320	100.0%

1997 UNIFORM CRIME REP. FOR THE U.S., § IV, AT 222

Regarding *Effectiveness Test #2*, the conclusion is as inescapable as was the case for *Test #1*. Law enforcement activity produces arrests for Non-Index crimes, which involve “other” crimes much more often (87%) than for violent crimes (13%). To what extent, then, will DNA mining be beneficial for the vast majority of Non-Index crimes? Realistically, the answer must be that DNA testing is quite irrelevant for these offenses. These are, by all accounts, less serious crimes, and local law enforcement hardly has the necessary resources to treat these offenses as though they require the intensive crime scene effort that is usually reserved for violent crimes against the person.

An alternative perspective on the availability of DNA-bearing evidence and its collection potential, however, has been advanced elsewhere. Weedn and Hicks have noted that “at *most* crime scenes, there are many kinds of biological evidence: not only blood and hair but also botanical, zoological, and other types of substances.”⁶⁷ The authors advance their argument by citing data collected in one study revealing that blood evidence was found in 60% of murders and in a similar percentage of

⁶⁷ See Weedn & Hicks, *supra* note 13, at 2 (emphasis added).

TABLE 5.
ESTIMATED ARRESTS FOR NON-INDEX OFFENSES
REPORTED TO FBI IN 1997

Non-Index Offense	Persons Arrested	Percent of Total
Against Person		
Other Assaults	1,395,800	11.0%
Sex Offenses (not Rape)	101,900	0.8%
Offenses Against Family & Children	155,800	1.2%
Other		
Curfew	182,700	1.4%
Disorderly Conduct	811,100	6.4%
Driving Under Influence	1,477,300	11.7%
Drugs	1,683,600	13.3%
Drunkenness	734,800	5.8%
Embezzlement	17,400	0.1%
Forgery & Counterfeiting	120,100	0.9%
Fraud	414,600	3.3%
Gambling	15,900	0.1%
Liquor Laws	636,400	5.0%
Prostitution	101,600	0.8%
Runaways	196,100	1.5%
Suspicion	6,500	0.1%
Stolen Property	155,300	1.2%
Vagrancy	28,800	0.2%
Vandalism	318,400	2.5%
Weapons	218,900	1.7%
All Other Offenses	3,884,600	30.7%

1997 UNIFORM CRIME REP. FOR THE U.S., § IV, AT 222.

assaults and batteries, while hair was found at the scene of 10% of robberies and 6% of residential burglaries.⁶⁸ It is obvious, of course, that the authors' use of the word "most" above is sheer hyperbole. There is no conceivable way that DNA-related evidence found at the scene of only 10% of robberies and 6% of burglaries can be considered to qualify as "most" crimes. In fact, the data would suggest the alternative—that DNA-bearing evidence is available at only a small number of crime scenes. It is likely, of course, that the authors are really arguing that DNA-

⁶⁸ *Id.*

related material is theoretically available at some crime scenes and could be and should be collected more often than is presently done, thereby aiding the investigation. Thus, they note that:

saliva, skin cells, bone, teeth, tissue, urine, feces, and a host of other biological specimens, all of which may be found at crime scenes are also sources of DNA. Saliva may be found in chewing gum and on cigarette butts, envelopes, and possibly drinking cups. Fingernail scrapings from an assault victim or a broken fingernail left at the scene by the perpetrator may also be useful DNA evidentiary specimens. Even hatbands and other articles of clothing may yield DNA.⁶⁹

We readily accept the notion that there may be biological specimens left at some crime scenes that could quite readily yield DNA for testing. But, we repeat our admonition outlined above: while there may be such evidence available at crime scenes, it is highly unlikely that police departments have sufficient resources to look for such evidence across the wealth of crimes with which they must concern themselves. Weedn and Hicks are well aware of this as they state "little of this evidence is recovered from crime scenes, less is submitted to crime labs, and still less is analyzed."⁷⁰ The reasons are obvious. It is often difficult enough to convince the police to dust for fingerprints at a residential burglary because the police know that their search will likely be futile. Imagine, therefore, trying to convince police to search the crime scene (usually outside) of a robbery for such evidence as the perpetrator's hair, tissue, or other biological residue. Or imagine further, a crowded parking lot outside a bar or night club that was the scene of an assault. Here, the police would be expected to hunt for a broken fingernail or the victim would have to turn over his or her clothing so that a search for trace evidence could be conducted.

Thus, it is unrealistic to argue that DNA is readily available at crime scenes if only the police would look for it. Assuming that the legitimate law enforcement reluctance to treat every crime scene, regardless of how serious, as if it were a homicide or a rape could be overcome, where will the resources come

⁶⁹ *Id.*

⁷⁰ *Id.*

from to look for the biological evidence, collect it, test it, and store it in a DNA database? It must be recognized that the front end of the process, the crime scene, is highly labor intensive, and it is doubtful that local law enforcement has such resources available. Weedn and Hicks have specifically noted that the scarce resources available to law enforcement which must be distributed across a range of pressing needs is a significant limitation to DNA as a crime-fighting tool.⁷¹ Moreover, not only is the process highly labor intensive, that labor tends to be highly trained, and therefore, more expensive. Further, even if such resources could be made available somehow, the question arises as to whether this is a wise expenditure of public resources. It should be stressed that we do not wish to suggest abandoning current forensic evidence collection practices, but only that there are significant and numerous obstacles to realizing substantial crime-reduction results from this process.

2. *DNA Effectiveness: Prosecution*

The other stage of the criminal justice system for which DNA mining (and the DNA databases) could be most beneficial concerns the prosecution of criminal defendants. Just because DNA mining might not dramatically increase the rate at which crimes are solved by the police, there are still advantages to the prosecutorial use of DNA results. DNA could produce the following benefits: (1) convictions could be more likely; (2) convictions without undue plea-bargaining could occur more often; (3) some, if not many, defendants may even plead guilty in the face of such strong forensic evidence; (4) some defendants who might not otherwise be brought to trial could be convicted; and (5) some suspects would be exonerated before trial, thus sparing the necessity of a trial—both the expense as well as unnecessary discomfort and embarrassment for the wrongfully accused. Naturally, this list is not meant to be exhaustive, but merely suggestive of DNA's potential in court. It would seem, therefore, that DNA use by prosecutors would be universally high as it would be difficult to assemble reasons to the contrary.

⁷¹ *Id.* at 4.

TABLE 6.
PROSECUTORIAL USE OF DNA EVIDENCE: 1992-1996

Population Served	Percent of Offices Using DNA		
	1992	1994	1996
All Offices	25%	42%	49.2%
500,000 or More	n.a.	95%	n.a.
Under 500,000	n.a.	47%	n.a.
Part-Time Office	n.a.	23%	n.a.
1,000,000 or More	n.a.	n.a.	100.0%
250,000 to 999,999	n.a.	n.a.	97.6%
Under 250,000	n.a.	n.a.	56.4%
Part-Time Office	n.a.	n.a.	15.3%

John M. Dawson et al., *Prosecutors in State Courts, 1992*, BUREAU JUST. STAT. BULL., Dec. 1993, at 1; Carol J. DeFrances et al., *Prosecutors in State Courts, 1994*, BUREAU JUST. STAT. BULL., Oct. 1996, at 4; Carol J. DeFrances et al., *Prosecutors in State Courts, 1996*, BUREAU JUST. STAT. BULL., July 1998, at 6.

Table 6 provides the results of three years worth of data from an ongoing Bureau of Justice Statistics study of the nation's prosecutors' offices.⁷² The data displayed are from the last three installments of the research: 1992, 1994, and 1996. Overall, the results indicate that the use of DNA by prosecutors increased from 25% in 1992 to 42% in 1994, then to 49.2% in 1996.⁷³ In the 1994 survey, the data were available by size of office, and these results show that when the prosecutor's office serves a very large population (500,000 citizens or more), almost all such offices (95%) use DNA as compared to the offices serving smaller populations (47% for populations under 500,000, and 23% for a part-time office). The 1996 survey provides a different population breakdown with four categories rather than three. Again we see that as the population served increases, there is a corresponding increase in DNA use by the prosecution. The use of DNA ranges from 100% for populations of one million or greater, to 97.6% for populations of 250,000-999,999,

⁷² BUREAU OF JUSTICE STATISTICS, PROSECUTORS IN STATE COURTS (1998); BUREAU OF JUSTICE STATISTICS, PROSECUTORS IN STATE COURT (1996); BUREAU OF JUSTICE STATISTICS, PROSECUTORS IN STATE COURTS (1993).

⁷³ Prosecutors use DNA to enhance plea negotiations and, of course, obtain convictions at trial.

to 56.4% for jurisdictions with populations under 250,000, and finally, to 15.3% for part-time offices.

TABLE 7.

PROSECUTORIAL USE OF DNA EVIDENCE BY POPULATION GROUP, STAGE OF CASE, AND OFFENSE, 1996

Use of DNA	Population Served by Prosecutor				
	All	1,000,000+	250,000 to 999,999	Less Than 250,000	Part Time
Used Any Time	49.2%	100.0%	97.6%	56.4%	15.3%
Plea Negotiations	41.1%	90.9%	84.1%	48.3%	9.8%
Trial	34.2%	100.0%	91.8%	36.7%	9.8%
Murder/Manslaughter	27.5%	93.8%	87.5%	28.8%	4.2%
Sex Offense	42.7%	100.0%	96.4%	46.5%	15.3%
Aggravated Assault	4.2%	36.4%	13.7%	4.2%	0.0%
Robbery	2.9%	15.2%	13.7%	2.6%	0.0%
Burglary	2.7%	21.2%	12.6%	2.3%	0.0

Carol J. DeFrancis & Greg W. Steadman, *Prosecutors in State Courts, 1996*, BUREAU JUST. STAT. BULL., July 1998, at 6.

Table 7 provides data from the 1996 survey concerning how prosecutors used DNA evidence. Overall, the results show that less than half of all prosecutors (49.2%) use DNA in any manner. More particularly, only 41.1% use DNA evidence during plea negotiations, while even less, 34.2%, use DNA at trial. With respect to DNA use by type of crime charged, the data once again suggest that use is limited and generally restricted to two offenses. That is, 27.5% of prosecutors use DNA evidence for murder and non-negligent manslaughter cases, while 42.7% use such evidence in sex offenses. The remaining three offense types show extremely low levels of DNA use: aggravated assault—4.2%; robbery—2.9%, and burglary—2.7%.

There are, however, two basic findings that are readily apparent in the data when population groupings are considered. These findings suggest population differentials in the use of DNA evidence, and they also suggest that there are distinct crime-type differences. First, like the result concerning whether DNA was used at all (Table 6), the type of use varies by size of population served. The two larger population groups (1 million

or more and 250,000–999,999) make extensive use of DNA at both trial and during plea negotiations. On the other hand, the two smaller groupings (less than 250,000 and part-time offices) are much less likely to use DNA at trial or during plea negotiations. Second, the data also display very significant crime type variation in the use of DNA. That is, the two larger population groups use DNA evidence at a substantial rate for murder or non-negligent manslaughter (93.8% and 87.5%) and sex offenses (100% and 96.4%), but the two smaller population groups do not use DNA evidence in the majority of cases for either murder or non-negligent manslaughter (28.8% and 4.2%) or sex offenses (46.5% and 15.3%). Additionally, the data confirm our suspicion that other crime types beyond homicides and rapes are not readily susceptible to DNA evidence. That is, for neither aggravated assault, robbery, nor burglary do any of the prosecution groups exceed 36.4% in the use of DNA. In fact, from 79% to 100% of the time, the various offices do not use DNA evidence for two major violent crimes (robbery and aggravated assaults) or a major property crime (burglary).

These results are highly pertinent to the question of DNA effectiveness, as even those prosecution offices (i.e., the two largest groups) that use DNA evidence extensively do not use such evidence beyond the two most serious crime types. One can only wonder why this is the result. Is it because such evidence is not collected or tested and, therefore, is not available? Or, could it be that the crime types in question do not require DNA evidence to make a case sound enough to go to trial?

It might be argued that the variation in DNA use across population groups is not very important because Table 7 indicates that at least the largest counties use DNA evidence from about 84% to 100% of the time. Moreover, according to the Bureau of Justice Statistics (BJS), the larger cities and counties (those with populations greater than 500,000) represent about 49% of the total United States population.⁷⁴ By implication, therefore, at least one-half of crimes are being prosecuted by offices that use DNA evidence extensively. Since BJS does not

⁷⁴ BUREAU OF JUSTICE STATISTICS, *supra* note 72.

provide a list of these 127 prosecutors' offices, we cannot perform a direct test of the population covered. However, we can use FBI data to perform an approximate test, giving every benefit of the doubt to the BJS claims. These data are displayed in Table 8.

Table 8 provides population data by various groupings and also provides UCR Index crime counts for these same groupings. Using these FBI data we are unable to replicate the 49% population figure. We come up with a total for the large population areas, those with at least 500,000 residents, of about 78,316,000. This was achieved by adding the population for Group I, 1 million or more (20,922,000), plus Group II, 500,000-999,999 (11,084,000), plus all of the suburban counties (46,310,000). Therefore, our calculations indicate that the two largest population areas, together with all the suburban counties equals about 35.6% of the United States population. Needless to say, this lack of congruence is problematic.

Next, we account for the percentage of UCR Index crimes that occur and are reported to the FBI for these three population groups that encompass densely populated areas. The results are as follows: (1) UCR Index crime—35.1%; (2) UCR violent Index crimes—42.6%; and (3) UCR property Index crimes—34%. With the exception of a slightly disproportionate share of serious violent crimes, the largest population groups taken together account for basically the same amount of crime (34% to 35.1%) as their share of the population (35.6%) would suggest. Further, Table 9 indicates that there are no startling differentials in the extent to which the larger areas succeed in clearing the Index crimes by arrest. In fact, Table 9 generally indicates that it is the smaller areas that do a better job of arresting suspects regardless of the severity of the crime.

We come then to *Effectiveness Test #3*. As was the case previously with respect to law enforcement, the federal government's own data regarding prosecutors would suggest that DNA is not used by a majority of prosecutors' offices. There were population differentials showing greater use in the most populous areas. However, the extensive use by prosecutors serving the largest population groupings must be discounted by the fact

TABLE 8.
OFFENSES REPORTED TO THE FBI BY POPULATION GROUP AND INDEX
OFFENSE TYPE, 1997

Population Group	Total Index	Violent	Property	Murder/ Manslaughter
All 220,142,000	11,097,248	1,407,924	9,689,324	15,685
Group I				
1 mil. + 20,922,000	1,422,710 12.8%	294,349 20.9%	1,128,361 11.6%	3,372 21.5%
500-999K 11,084,000	872,274 7.9%	130,140 9.2%	742,134 7.7%	1,685 10.7%
250-499K 13,825,000	1,209,667 10.9%	188,962 13.4%	1,020,705 10.5%	2,240 14.3%
Group II 100-249K 22,084,000	1,530,238 13.8%	187,752 13.3%	1,342,486 13.9%	2,164 13.8%
Group III 50-99K 21,279,000	1,169,925 10.5%	131,733 9.4%	1,038,192 10.7%	1,184 7.5%
Group IV 25-49K 20,878,000	1,009,981 9.1%	96,307 6.8%	913,674 9.4%	785 5.0%
Group V 10-24K 22,577,000	968,773 8.7%	81,972 5.8%	886,801 9.2%	684 4.4%
Group VI >10K 18,279,000	806,401 7.3%	64,668 4.6%	741,733 7.7%	519 3.3%
Suburban Counties 46,310,000	1,599,605 14.4%	176,619 12.5%	1,422,986 14.7%	2,028 12.9%
Rural Counties 22,903,000	507,674 4.6%	55,422 3.9%	452,252 4.7%	1,024 6.5%

1997 UNIFORM CRIME REP. FOR THE U.S., § II, AT 195-96.

Population Group	Rape	Aggravated Assault	Robbery	Burglary
All 220,142,000	78,196	871,135	442,907	2,062,978
Group I				
1 mil. + 20,922,000	7,502 9.6%	162,268 18.6%	120,847 27.3%	228,388 11.1%
500-999K 11,084,000	6,929 8.9%	70,587 8.1%	50,939 11.5%	147,987 7.2%
250-499K 13,825,000	9,227 11.8%	108,059 12.4%	69,436 15.7%	214,878 10.4%
Group II 100-249K 22,084,000	10,172 13.0%	111,067 12.7%	64,349 14.5%	282,612 13.7%
Group III 50-99K 21,279,000	8,232 10.5%	81,647 9.4%	40,670 9.2%	210,953 10.2%
Group IV 25-49K 20,878,000	6,787 8.7%	63,368 7.3%	25,367 5.7%	177,927 8.6%
Group V 10-24K 22,577,000	6,068 7.8%	57,067 6.6%	18,153 4.1%	164,427 8.0%
Group VI >10K 18,279,000	4,600 5.9%	49,779 5.7%	9,770 2.2%	132,154 6.4%
Suburban Counties 46,310,000	12,970 16.6%	122,717 14.1%	38,904 8.8%	350,612 17.0%
Rural Counties 22,903,000	5,709 7.3%	44,217 5.1%	4,472 1.0%	153,040 7.4%

TABLE 9.

PERCENT OF OFFENSES CLEARED BY ARREST BY POPULATION GROUP AND
INDEX OFFENSE TYPE, 1997

Population Group	Total Index	Violent	Property	Murder/ Manslaughter	Rape	Aggravated Assault	Robbery	Burglary
All 221,223,000	21.6	48.3	17.9	66.1	50.8	58.5	26.3	13.8
Group I								
1 mil. + 18,156,000	16.7	38.0	11.5	60.1	46.0	50.3	20.5	9.4
500-999K 10,382,000	19.3	43.4	15.1	55.8	55.2	55.7	25.3	13.2
250-499K 12,024,000	18.7	41.8	14.5	61.1	50.3	52.2	24.2	10.6
Group II 100-249K 19,631,000	21.2	47.9	17.5	69.1	51.2	59.0	27.6	12.8
Group III 50-99K 22,613,000	22.5	49.0	19.2	71.0	46.8	59.7	27.7	13.7
Group IV 25-49K 21,496,000	22.7	49.8	19.8	69.8	44.6	58.2	29.5	13.5
Group V 10-24K 23,519,000	26.0	55.3	23.2	71.9	49.6	62.4	34.5	15.9
Group VI >10K 19,329,000	24.8	61.3	21.5	74.9	55.2	66.7	36.3	17.0
Suburban Counties 50,186,000	21.7	54.9	17.4	68.8	54.9	62.7	29.6	18.6
Rural Counties 23,887,000	23.9	62.2	19.2	77.2	52.0	65.3	42.2	17.0

1997 UNIFORM CRIME REP. FOR THE U.S., § III, AT 213-14.

that these offices handle only about one-third of the serious crime in the United States. The vast majority of crime, about 64%, occurs in smaller jurisdictions—jurisdictions served by prosecutor units that do not rely on DNA evidence to a great extent, either at trial or during plea negotiations, regardless of the severity of the crime being prosecuted. Our analysis of the available data leads us to one inescapable conclusion: DNA use is a big city or large county phenomenon, but the majority of crime is committed and prosecuted elsewhere.

C. COST-EFFECTIVENESS

DNA mining has been shown above, at least anecdotally, to have the capability to match crime scene evidence with known offender samples. With respect to routine police and prosecutorial functions, however, DNA evidence is not being used extensively. Further, there appear to be distinct limitations to its capability to fight crime on any large scale, especially at the law enforcement and investigatory stages. Thus, it may seem unnecessary to consider cost-effectiveness. But, since DNA mining is here to stay, and its use appears likely to expand even further to include more and more donors (arrestees, convicted felons, perhaps even the general public) it is important to assess whether using DNA testing is cost-effective. At some point, consideration of allocating scarce law enforcement resources must be factored into the DNA mining equation, especially if successful “hits” remain few and far between. The alternative, of course, is that an overabundance of public expenditures might be allocated to DNA mining, even though it is not nearly as effective as has been claimed. There are several issues that warrant careful study in this regard. First, are DNA databases cost-effective right now? If not, will they be cost-effective at some point in the future? Even if such expenditures are the most efficient use of the resources allocated to crime fighting, do we really have sufficient resources to make the necessary and substantial fiscal outlays in order to capitalize on these new technologies?

The answers to all of these questions and more control the debate over whether allocating funds to these databases make

economic sense. In one sense, however, it seems ludicrous to talk about cost-effectiveness at all when one reviews the anecdotal evidence of databases that have provided the only means for solving some crimes.⁷⁵ What is the value of solving a brutal rape of two young sisters who were forced to watch as the perpetrator violently assaulted one and then the other? It seems that almost any amount of money could be justified as a reasonable expenditure. But, isolated successes are not the proper framework for examining the cost-effectiveness of DNA databases. The proper focus should be whether society is better off by spending money on these databases, which, as has been demonstrated above, may have a very low yield, as opposed to allocating the resources to other crime-fighting techniques.

As DNA laboratories all over the nation continue to upgrade existing technology, the capital investments will likely decline.⁷⁶ Once these laboratories are fully equipped to handle DNA analysis on a large scale, the marginal cost of each analysis should decrease accordingly. It currently costs approximately \$50 to construct a DNA profile from a sample.⁷⁷ This year alone, the National Institute of Justice has begun distribution of \$5 million in grants to speed DNA analysis technology.⁷⁸ The National Commission on the Future of DNA Evidence has predicted that it would cost an estimated \$22 million just to analyze the existing nationwide backlog of DNA samples.⁷⁹ New York City Police Commissioner Howard Safir has proposed taking a DNA sample from "anyone who is arrested for anything."⁸⁰ It has been estimated that this would cost New York City alone some \$18.25 million per year.⁸¹ If this were expanded on a na-

⁷⁵ See *supra* Part III.B.

⁷⁶ Ed Housewright, *Crime Lab's Excellence is Evidenced by Work Done in Cramped Quarters*, DALLAS MORNING NEWS, Jan. 24, 1999, at A1 (reporting that the Dallas County Criminal Investigation Laboratory purchased three new DNA analysis machines at \$60,000 each).

⁷⁷ See *supra* note 24.

⁷⁸ See *supra* note 24.

⁷⁹ Kendall Anderson, *Panel Debates Taking DNA upon Arrest*, DALLAS MORNING NEWS Mar. 2, 1999, at A13.

⁸⁰ Stevenson Swanson, *Ideas for Widespread DNA 'Fingerprinting' Stir Debate*, DALLAS MORNING NEWS, Feb. 7, 1999, at A15.

⁸¹ See *supra* note 24.

tionwide basis, it would result in about 15.3 million additional tests each year. When multiplied by the cost of each test, this additional expense would come to some \$765 million annually (adjusted downward, of course, for offenders with multiple arrests).

These figures may seem daunting, but again, when compared to the costs of crime each year, and when compared to the efficacy of existing crime-fighting techniques, these expenditures may well be justified to some observers. It is also widely accepted that the costs of DNA testing will continue to decrease as technology improves.⁸² Moreover, the increased use of DNA evidence could conceivably reduce the costs associated with traditional police investigations.⁸³ Further, the utility of DNA as evidence should reduce backlogs in our court systems, and may serve to deter recidivism, thereby further justifying the expenditure on a cost-effectiveness basis.⁸⁴ The use of DNA has been touted as one of the most effective tools our law enforcement agencies have ever had to fight crime. It is also claimed that DNA databases might diminish the cost of policing, investigating, and prosecuting criminal cases. These and other benefits make the expense seem more than worthwhile despite DNA mining's limited direct effect on crime-solving thus far.

It is difficult to locate precise figures on the cost of constructing and maintaining the current databases, and further, it remains unclear which category of offenders (or even people generally), and consequently, how many people, will have to contribute their DNA to the various databases. Notwithstanding the above limitations, we can offer a close examination concerning the cost-effectiveness of one of the newest databases to come on the scene: the Federal Convicted Offender DNA Database. As noted in Part II.B, the FBI has recently been authorized to implement a DNA database of data collected prior to release from a federal correctional institution from federal offenders convicted of an offense against a minor or a sexually violent of-

⁸² See Weedn & Hicks, *supra* note 13.

⁸³ See *id.*

⁸⁴ See W. VA. CODE § 15-2B-2 (Supp. 1999) (legislative findings that DNA databases may serve to discourage recidivism).

fense.⁸⁵ The FBI, in its budget request for fiscal year 2000, advised the House Committee on Appropriations that it would require \$5,336,000 to implement the new federal database.⁸⁶ We are curious, if not very skeptical. Why will it cost such a substantial amount of money to add yet another database? Is there not a principle of “economy of scale” by which supplementing an already existing database (i.e., CODIS) could be accomplished without duplicating costs? Perhaps it is because there will be a considerable number of federal inmates subjected to the new program, thereby justifying the high cost.

In order to estimate the number of federal inmates who qualify for the new DNA database, we draw upon the federal government’s own data sources. The Bureau of Justice Statistics has published two specialized reports on sex offenders: one on child victimizers⁸⁷ and another on sex offenders generally.⁸⁸ These reports virtually ignore sex offenders under federal custody, with the exception that there is one reference noting that about 1% (875) of federal inmates in 1994 were serving time for a sex offense involving a victim who was a minor.⁸⁹ Thus, not even the federal government’s own specialized reports pay much attention to that segment of the sex offender population that is currently in federal custody. There are however, other sources from which to validate the small number of such offenders. The Federal Justice Statistics Database provides the following counts of sex offenders under federal custody: 1997—871 inmates (113 rapists and 758 other sex offenders); 1996—811 inmates (123 rapists and 688 other sex offenders); and 1995—731 inmates (120 rapists and 611 other sex offenders).⁹⁰ Since the new database will likely collect inmates’ DNA prior to release, the number of eligible inmates exiting the federal

⁸⁵ See *supra* note 16.

⁸⁶ See *id.*

⁸⁷ LAWRENCE GREENFELD, BUREAU OF JUSTICE STATISTICS, CHILD VICTIMIZERS: VIOLENT OFFENDERS AND THEIR VICTIMS (1996).

⁸⁸ LAWRENCE GREENFELD, BUREAU OF JUSTICE STATISTICS, SEX OFFENSES AND OFFENDERS (1997).

⁸⁹ *Id.*

⁹⁰ *Federal Justice Statistics Resource Center (FJSRC)* (last modified Jan. 5, 2000) <<http://fjsrc.urban.org/Index.shtml>>.

prison system each year becomes crucial to prospectively estimate the workload of the new database. The number of sex offenders exiting federal prison in recent years are: 1997—348 inmates (28 rapists and 320 other sex offenders); 1996—328 inmates (22 rapists and 306 other sex offenders); and 1995—249 inmates (29 rapists and 220 other sex offenders).⁹¹

It should be very clear that, when compared to other offender groups, these numbers are extraordinarily small. For the last three years for which the above data are available, on average there were 811 sex offenders in federal custody, and 308 such offenders were released each year.⁹² According to the Federal Bureau of Prisons home page on the Internet, the official population count as of September 2, 1999 was 116,775 inmates.⁹³ Using the Bureau of Justice Statistics 1% estimate, there would be 1,168 sex offenders in custody. Thus, we ask again, why such a substantial line item for a new database which will involve such a small number of offenders? Using the industry rate of \$50 per DNA test from a blood sample, it would cost about \$584,000 to test every federal inmate currently in custody, or alternatively, it would cost about \$154,000 to test the 308 or so who would be expected to be released in any given year. One certainly wonders why the budget request asked for \$5.3 million. In the final analysis, it would appear that the new Federal Convicted Offender DNA Database will hardly be cost-effective. We should all look forward to seeing whether such an extravagant budget is accompanied by significant crime reduction. Of course, if the analyses reported herein are any indication, we will all be very disappointed in the results.

It would seem that, given the questionable effectiveness of DNA in forensic settings, especially with respect to the value of DNA databases, public officials would be hesitant, or at least proceed slowly, in proposing costly DNA databases. However, as we will show in the following section, there has indeed been a rush to judgment that such databases are highly desirable, if not fundamentally necessary, in the fight against criminals.

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Federal Bureau of Prisons* (visited Sept. 2, 1999) <<http://www.bop.gov/>>.

IV. FUTURE DNA MINING?

Convicted sex-offenders? No problem here. They're all a bunch of sick recidivists anyway. All convicted felons? Sure, why not? Maybe they'll think twice next time. All people arrested? Well, it's a little tougher here, but sure, the cops are good guys and they can't arrest you without probable cause anyway. Everyone at birth or when we get our driver's license renewed? Well, maybe this is what is needed to end crime altogether. After all, if everybody knows that their DNA is on file and, consequently, that they will be caught every time for every crime, then no one would commit crimes. This hypothetical debate is happening in state legislatures everyday. This section of the paper is devoted to the future of DNA databases.

A. WHAT THE FUTURE MAY HOLD

"Uncle Sam Wants You!" was the familiar slogan used to recruit young men for military service. Now, it might be more appropriate to say that "Uncle Sam Wants Your DNA!" On March 1, 1999, Attorney General Janet Reno asked a national commission to study the legality of taking DNA samples from everyone arrested instead of just the convicted sex offenders and violent felons currently permitted by law.⁹⁴ The committee's recommendations are not available yet, but it would be a safe bet to predict at least some expansion over the current status quo. Louisiana is the most striking example of the expansionist tendencies these DNA databases have, but New York City, North Carolina, and England are also highly illustrative.⁹⁵ At least one poll shows that people are split almost evenly on the issue of whether DNA samples should be taken from everyone arrested. Of 9,751 responses, 54.4% answered yes, 41.6% said no, and 3.9% were not sure.⁹⁶ With such a slim margin of support, one may properly ask whether any policy should be enacted. For is-

⁹⁴ Richard Willing, *Reno: Study Broad DNA Testing*, USA TODAY, Mar. 1, 1999, at A1.

⁹⁵ See Weedn & Hicks, *supra* note 13.

⁹⁶ USA TODAY, "Quick Question" Internet poll, (Mar. 2, 1999) <[http://vote.ieinc2.com/usatoday/News.ax?...Its&VoteID=648&VotedFor\\$=PrivateGarbageX](http://vote.ieinc2.com/usatoday/News.ax?...Its&VoteID=648&VotedFor$=PrivateGarbageX)>. As this poll was taken online, sampling methodology is obviously an important factor in considering how much weight the results should be given.

sues as serious as those DNA databases present, it might be appropriate to only enact legislation that captures a broader consensus and approval by the populace.

Aside from these calls for moves to the very limit of permissible sampling, other states are enacting laws or have enacted laws expanding their DNA database “trigger mechanisms.”⁹⁷ Colorado passed a bill mandating DNA tests for certain felonies involving bodily harm as a condition of the felon’s parole.⁹⁸ Many of the states that currently restrict their databases to sex offenders are considering expansion to bring them more in line with the majority of jurisdictions which allow DNA profiling for some or all felony convictions.⁹⁹

1. Possible Scenarios

Although, in theory, there would seem to be an infinite number of possible DNA database systems which can be developed to take advantage of DNA technology and provide fertile ground for DNA mining, in reality, there are really just seven likely outcomes.

a. No DNA Databases at All

The option of no DNA databases at all seems highly unlikely now that every state in the union has a DNA database system either in operation or under development. Given the alleged advantages that DNA has for crime-solving activities, and its secondary effects on crime prevention, one would not be too adventuresome to predict that these databases are here to stay whether we like it or not.

b. Just Sex Offenders

This was the early trend, but as advancements in DNA technology continue—and they will—it remains to be seen whether DNA databases will continue to be limited to just these types of offenders. If society’s goal is to prevent and catch this type of

⁹⁷ For purposes of this paper, we will refer to the conduct that results in inclusion in a database as “trigger mechanisms.”

⁹⁸ 1999 Colo. Sess. Laws H.B. 1235.

⁹⁹ See *infra* notes 158-59 and accompanying text.

criminal activity, then it serves its purpose well. However, if society feels the need to expand its crime-solving abilities, these databases will be broadened accordingly.

c. All Persons Convicted of Felony Offenses

This trend is becoming more popular, as it meshes nicely with the "get tough" on crime mentality among the general population. Further, it catches some criminals who would not otherwise be included under the sex offender-based programs. For example, if a criminal was to rape and kill his victim, this is likely to be classified as a murder, and not a sex offense. Thus, the offender would not be subject to inclusion in the database, even though this is precisely the type of heinous crime that the sex-offender database was designed to prevent.¹⁰⁰

d. All Persons Convicted

Under such a system, every conviction would result in a DNA database record. This might have a real and substantial impact on a person's desire to commit future criminal acts. However, it is not clear that this would be worth the considerable expense and effort such an undertaking would entail. As technology becomes cheaper, faster, and more user friendly, it might make such programs less cost-prohibitive. One has to wonder how useful the inclusion of someone who was arrested for a so-called "victimless" crime, such as gambling, would be. It seems doubtful that a person who was arrested for betting \$50 on the Bulls to beat the Lakers would significantly improve the capability of the database to identify serial rapists. On the other hand, that bettor may just be the one person the police were looking for.

e. All Persons Arrested for Felony Offenses

The problem here, and with any other system which does not require a conviction, is that it has a tremendous potential for abuse. Where there is no judicial check on the intake proc-

¹⁰⁰ This hypothetical scenario was suggested by Dr. Dennis Loockerman. Interview with Dennis Loockerman, Ph.D., Texas Department of Public Safety, CODIS Lab Supervisor, in Austin, TX (Apr. 7, 1999).

ess, it is difficult to convince those who view privacy as one of our most cherished rights that DNA testing is appropriate in this situation. This is particularly true today as we have increasingly looked to courts, and not legislatures, as the primary guardians of our liberties.¹⁰¹

f. All Persons Arrested

Soon to take effect in Louisiana, and proposed in New York City, this is the current outer-limit of DNA databases. To date, no system has pushed farther than this. This makes sense, but perhaps only because the next alternative, total population inclusion, is a daunting prospect indeed. Thus, this appears to be our current limit for the use of DNA databases. From one perspective, taking DNA from all arrestees may enable police to solve crimes where only biological evidence was left. A criminal who is arrested for one crime may be wanted in connection with other crimes, but solely on the basis of DNA evidence recovered from a crime scene. This would allow law enforcement authorities to clear many unsolved crimes, which is obviously a tremendous benefit to society. From another perspective, our criminal justice system is based on the concept that we are innocent until proven guilty.¹⁰² Thus, it seems perhaps a little too intrusive to take DNA samples simply on the basis of suspected criminal activity.

g. Total Population Inclusion

The final alternative is a database with a record of the DNA profiles of all people. First, the logistical problems here are enormous. How should this category be defined? Every person in the state? A national database with every American citizen? Taken at birth? What about those already born? Does everybody have to give a sample at the local police station? Where do we get the funding for this? Who would be in charge of it? How do we deal with illegal aliens? What about resident aliens?

¹⁰¹ See *United States v. Carolene Prods. Co.*, 304 U.S. 144, 153 n.4 (1938). See also MARK SILVERSTEIN, *JUDICIOUS CHOICES: THE NEW POLITICS OF SUPREME COURT CONFIRMATIONS* (1994).

¹⁰² Cf. *In Re Winship*, 397 U.S. 358, 363-64 (1970).

Tourists? Obviously, we cannot force other countries to maintain such a database, nor could we force them to share the data with our law enforcement agencies. The international aspects alone present almost insurmountable obstacles to the successful implementation of such a system.

Aside from the practical obstacles, how would we feel about such a database? Assume not only that such a database is possible, but further, that it is entirely cost-free to develop. No lost time or productivity to give and collect samples; no funds required for the machines to do the analysis; no funds needed to pay the technicians to organize the data. Would we still want it, even if it were free? Reasonable people might disagree, even with the completely fictional assumption that it would cost nothing to create.¹⁰³

These various scenarios follow a clear-cut progression. A sex-offender-only database seems virtually unobjectionable. The conviction-based databases seem a little more expansive, but still they do not seem particularly troubling. After all, a judge or jury found the accused guilty. That should be enough. The arrest-based systems are the current thresholds, but here, we have no assurance of guilt, only suspicion. With the total population database, even if one takes cost out of the equation, it still seems a little too futuristic. Something about it just seems contrary to our notions of individual autonomy, and our sense of personal privacy. These are the concerns that DNA databases ultimately present. There are no easy answers. In fact, there are very few easy questions.

B. DO WE WANT TO GO THERE?

"Better living through chemistry" was a popular slogan many years ago describing how science could make our lives better. It may be even more appropriate to use it today. Thankfully, the notion of privacy has not been lost in the debate. Civil

¹⁰³ As this paper was in the final stages of completion, one of the authors was the victim of a random act of theft. An unknown thief broke a window in his car, and relieved him of approximately \$750 worth of personal property. As a victim, he might support total database inclusion in the hope that the perpetrator will be caught; as a civil libertarian, he instead chalks this up to the price of personal privacy and freedom. It is a difficult balance, to be sure.

libertarians are answering the call,¹⁰⁴ and state legislatures are not blind to the issues themselves. Aside from pure privacy concerns, there are legitimate fears about misuse of these databases. Other concerns such as the integrity of the DNA analysis process, and whether we should now revisit heretofore accepted rules regarding things such as statutes of limitations are key issues which must be resolved.¹⁰⁵

Once the DNA is on file, concerns arise as to what other uses it may be put to. This has been called "function creep" by one leading commentator.¹⁰⁶ To allay these concerns, almost every DNA database statute on the books contains provisions to avoid such improper usage. Rhode Island's DNA database act provides: "DNA samples and DNA records collected under this chapter shall never be used . . . for the purpose of obtaining information about physical characteristics, traits or predispositions for disease."¹⁰⁷ Texas has an explicit prohibition against the use of genetic data by insurance companies for illegitimate purposes. Article 21.73 of the Texas Insurance Code states: "A group health benefit plan issuer may not use genetic information to reject, deny, limit, cancel, refuse to renew, increase the premiums for, or otherwise adversely affect eligibility for or coverage under the group health benefit plan."¹⁰⁸ The statute further holds refusal to submit to a genetic test may also not be used in the same manner.¹⁰⁹ Moreover, such prohibitions do not apply only to people already born. The statute also mandates that "[n]o issuer of a group health benefit plan shall use genetic information to coerce or compel a pregnant woman to have an induced abortion."¹¹⁰

¹⁰⁴ Barry Steinhardt, Associate Director, American Civil Liberties Union, Address to the National Commission on the Future of DNA Evidence (Mar. 1, 1999).

¹⁰⁵ Under proper conditions, DNA residue can remain viable for thousands of years. See FISHER, *supra* note 2, at 153 (discussing the ability to reopen unsolved cases years later now that DNA technology can generate leads).

¹⁰⁶ See *supra* note 75.

¹⁰⁷ R.I. GEN. LAWS § 12.1.5-10(4) (1999).

¹⁰⁸ TEX. INS. CODE ANN. art. 21.73 § 3(a) (West Supp. 1998).

¹⁰⁹ *Id.* § 3(e).

¹¹⁰ *Id.* § 8(b).

This debate will be carried out for years to come, and it is reasonable to expect that as science continues to progress, even more invasive and intrusive issues will be considered. A watchful eye should ensure that we can embrace the benefits of this technology, but without giving up too much in exchange. As Part III.C focused on the monetary costs we incur to pay for these databases, we must also focus on the costs in terms of sacrificing personal liberties as well.

V. EXISTING STATE OF THE LAW

Given the proliferation of DNA databases and the proposals for wide expansion, it is desirable to review briefly the statutes and regulations already "on the books" as of the time of this writing. In so doing, we can examine the extent to which such statutes are uniform, if not identical, thus providing, regardless of jurisdiction, standardized procedures and policies concerning database information. On the other hand, anomalous provisions should be identified and their possible implications raised.

In addition to the FBI's DNA database,¹¹¹ every state in the union has established a DNA database in one form or another.¹¹² This is likely due, at least in part, to the availability of federal funding for such endeavors.¹¹³ As a condition of the federal government's support, each state's database must meet certain criteria. For example, in order to receive a grant, the state must require that DNA samples be obtained from "each person convicted of a felony of a sexual nature."¹¹⁴ Further, each state must require that its standards for the processing and analysis of such specimens are consistent with those established by the Director

¹¹¹ There appears to be a somewhat widely held view that 42 U.S.C. § 14132 was not a clear enough mandate for the establishment of a DNA database for federal prisoners and the District of Columbia prisoners. Recently a bill was introduced in the United States Senate to clarify Congress' intent. The Violent Offender DNA Identification Act of 1999, was introduced on April 28, 1999. S. 903, 106th Cong. (1999).

¹¹² The FBI has been authorized to provide a database for the District of Columbia. See 28 U.S.C. § 531 (1996).

¹¹³ See *supra* notes 12, 13, and 16.

¹¹⁴ See *supra* notes 12, 13, and 16.

of the FBI.¹¹⁵ These various statutes are generally the same for the most part, but there is substantial variance as to what groups of people are forced to provide samples for inclusion in a database. To provide a useful analytical framework, the Texas DNA Database System¹¹⁶ will be reviewed in depth, followed by a discussion of other states' approaches, and then a discussion of anomalous provisions of particular statutes will complete this section.

A. THE TEXAS DNA DATABASE SYSTEM

The legislation creating Texas' DNA database system was enacted in 1995.¹¹⁷ Chapter 411 of the Texas Government Code covers the Texas Department of Public Safety, which has the responsibility for the DNA database.

1. Section 411.142: "DNA Database"

The Director [of the Department of Public Safety] shall "record DNA data and establish and maintain a computerized database that serves as the central depository in the state for DNA records."¹¹⁸ A "DNA record" means the results of a forensic DNA analysis performed by a DNA laboratory and, if known, the name of the person who is the subject of the analysis."¹¹⁹ The director may "receive, analyze, store, and destroy a record, blood sample, or other specimen"¹²⁰ The DNA database must "be capable of classifying, matching, and storing the results of analyses of DNA and other biological molecules."¹²¹ The DNA database must also "be compatible with the national DNA identification system (CODIS) used by the FBI to the extent required by the FBI to permit the useful exchange and storage of DNA records or other information derived from those records."¹²² The department shall "establish standards for DNA

¹¹⁵ See *supra* notes 12, 13, and 16.

¹¹⁶ TEX. GOV'T CODE ANN. § 411.141 to -.154 (West Supp. 1998).

¹¹⁷ Acts 1995, 74th Leg., ch. 595, § 1, eff. Sept. 1, 1995.

¹¹⁸ TEX. GOV'T CODE ANN. § 411.142(a).

¹¹⁹ *Id.* § 411.141(4).

¹²⁰ *Id.* § 411.142(c).

¹²¹ *Id.* § 411.142(d).

¹²² *Id.* § 411.142(f).

analysis . . . that meet or exceed the current standards for quality assurance . . . issued by the FBI.”¹²³

2. Section 411.143: “Purposes”

The “principal purpose of the DNA database is to assist federal, state, or local criminal justice or law enforcement agencies in the investigation or prosecution of sex-related offenses or other offenses in which biological evidence is recovered.”¹²⁴ In criminal cases, the “purposes of the DNA database are only for use in the investigation of an offense, the exclusion or identification of suspects and the prosecution of the case.”¹²⁵ Other purposes of the database include:

1) assisting in the recovery or identification of human remains from a disaster or for humanitarian purposes; 2) assisting in the identification of living or deceased missing persons; and 3) if personal identifying information is removed: A) establishing a population statistics database; B) assisting in identification research and protocol development; and C) assisting in database or DNA laboratory quality control.¹²⁶

3. Section 411.144: “Regulation of DNA Laboratories; Penalties”

According to section 411.144:

[T]he director . . . shall establish procedures for a DNA laboratory or criminal justice or law enforcement agency in the collection, preservation, shipment, analysis, and use of a blood sample or other specimen . . . in a manner that permits the exchange of DNA evidence between DNA laboratories and the use of the evidence in a criminal case.¹²⁷

The director may “at any reasonable time enter and inspect the premises or audit the procedures of any DNA laboratory that provides DNA records or DNA forensic analyses to the department”¹²⁸ Eventually, there are plans for eight separate

¹²³ *Id.* § 411.142(h).

¹²⁴ *Id.* § 411.143(a).

¹²⁵ *Id.* § 411.143(b).

¹²⁶ *Id.* § 411.143(c).

¹²⁷ *Id.* § 411.144(a).

¹²⁸ *Id.* § 411.144(c).

DNA labs which would feed data to the state's DNA database, although none are presently operational.¹²⁹

4. *Section 411.146: "Blood Samples or Other Specimens"*

A person "collecting a blood sample or other specimen . . . may not be held liable in any civil or criminal action if the person collects the sample or specimen in a reasonable manner according to generally accepted medical or other professional practices."¹³⁰ A DNA laboratory may "analyze a blood sample collected under this section or other DNA specimen only: (1) to type the genetic markers contained in the sample or specimen; (2) for criminal justice and law enforcement purposes; or (3) for other purposes described by this sub-chapter."¹³¹ "If possible, a second DNA specimen must be obtained from a suspect in a criminal investigation if forensic DNA evidence is necessary for use as substantive evidence in the prosecution of a case."¹³²

5. *Section 411.147: "Access to DNA Database Information"*

The director shall "establish procedures: (1) to prevent unauthorized access to the DNA database; and (2) to release DNA records, specimens, or analyses from the DNA database."¹³³ The department may:

[R]elease a DNA sample, analysis, or record only: (1) to a criminal justice agency for law enforcement identification purposes; (2) for a judicial proceeding, if otherwise admissible under law; (3) for criminal defense purposes to a defendant, if related to the case in which the defendant is charged; or (4) if personally identifiable information is removed, for: (A) a population statistics database; (B) identification research and protocol development; or (C) quality control.¹³⁴

The director shall "maintain a record of requests made under this section."¹³⁵

¹²⁹ See Interview with Dr. Dennis Loockerman, *supra* note 100.

¹³⁰ TEX. GOV'T CODE ANN § 411.146(b).

¹³¹ *Id.* § 411.146(e).

¹³² *Id.* § 411.146(f).

¹³³ *Id.* § 411.147(a).

¹³⁴ *Id.* § 411.147(c).

¹³⁵ *Id.* § 411.147(f).

6. *Section 411.148: "DNA Records of Certain Inmates"; and Section 411.150: "DNA Records of Certain Juveniles"*

The Texas DNA database can contain records that originate from eight separate and distinct sources.¹³⁶ For our purposes, however, the only two sources that are relevant to this paper are: a person described by section 411.148 or 411.150, and a biological specimen that is legally obtained in the investigation of a crime, regardless of origin. Sections 411.148 and 411.150 delineate the offenses for which an adult or a juvenile may be required to submit a DNA sample for inclusion into the database. Both sections are essentially identical and cover the same offenses. Under section 411.148(a), an adult can be compelled to submit a biological specimen essentially if that person commits a sex-related offense, another felony offense with the intent to commit a sex-related offense, murder, or aggravated assault.¹³⁷

¹³⁶ Specifically, the DNA database may contain records for the following:

- a person described by Section 411.148 or 411.150;
- a biological specimen of a deceased victim of a crime;
- a biological specimen that is legally obtained in the investigation of a crime, regardless of origin;
- an unidentified missing person, or unidentified skeletal remains or body parts;
- a close biological relative of a person who has been reported missing to a law enforcement agency;
- a person at risk of becoming lost, such as a child or a person declared by a court to be mentally incapacitated, if the record is required by court order or a parent, conservator, or guardian of the person consents to the record; or
- an unidentified person, if the record does not contain personal identifying information.

Id. § 411.142(g). See also section 411.149 which allows a person to "voluntarily submit a blood sample or other specimen to the department for the purpose of creating a DNA record under this subchapter." *Id.* § 411.149.

¹³⁷ Specifically, § 411.148(a) provides:

An inmate . . . shall provide one or more blood samples or other specimens . . . for the purpose of creating a DNA record if the inmate is ordered by a court to give the sample or specimen or is serving a sentence for:

- (1) an offense under one or more of the following Penal Code provisions:
 - (A) Section 21.11—indecentcy with a child;
 - (B) Section 22.011—sexual assault;
 - (C) Section 22.021—aggravated sexual assault;
 - (D) Section 20.04(a)(4)—aggravated kidnapping, if the defendant committed the offense with intent to violate or abuse the victim sexually; or

Also, under both section 411.148(a) and section 411.150(a), an inmate can be forced to give a sample by order of a court.¹³⁸ This would appear to give courts free reign over the DNA database, but there is no evidence that any such orders have been given to date.¹³⁹ Further, it appears that under the Texas statute, an inmate can be forced to give a sample if the inmate is serving a sentence for *any* offense and has been previously convicted of a sex-related offense.

Under section 411.148(d), an inmate “may not be held past a statutory release date if the inmate fails or refuses to provide a blood sample or other specimen under this section.” However, “[a] penal institution may take other lawful administrative action against the inmate.”¹⁴⁰ Section 411.150, dealing with juveniles, is substantially similar, although unlike section 411.148(d), the state is not prohibited from holding a juvenile past his release date for failure to provide a sample.¹⁴¹ Aside from this noteworthy omission, the sections seem to track each other very closely.

7. Section 411.151: “Expunction of DNA Records”

The director shall “expunge a DNA record of a person from the DNA database if the person: (1) notifies the director in writing that the DNA record has been ordered to be expunged . . . and; (2) provides the director with a certified copy of the court order that expunges the DNA record.”¹⁴² A person may “petition for the expunction of a DNA record . . . if the person is en-

(E) burglary, if the premises are a habitation; and any party to the offense entered the habitation with intent to commit a felony other than felony theft or committed or attempted to commit a felony other than felony theft and the defendant committed the offense with intent to commit a felony listed in (A) through (D) above; or

(2) any offense if the inmate has previously been convicted of:

(A) an offense described in Subsection (a) (1); or

(B) an offense under federal law or laws of another state that involves the same conduct as an offense described by Subsection (a) (1).

Id. § 411.148(a).

¹³⁸ *Id.* §§ 411.148(a), 411.150(a).

¹³⁹ See Interview with Dennis Loockerman, *supra* note 100.

¹⁴⁰ TEX. GOV'T CODE ANN. § 411.148(d).

¹⁴¹ *Id.* § 411.150.

¹⁴² *Id.* § 411.151(a).

titled to the expunction of records relating to the offense to which the DNA record is related”¹⁴³

8. *Section 411.153: “Confidentiality of DNA Records”*

“A DNA record stored in the DNA database is confidential and is not subject to disclosure under the open records law”¹⁴⁴ A person

commits an offense if the person knowingly discloses information in a DNA record . . . except as authorized by this chapter. An offense under this subsection is a misdemeanor punishable by: (1) a fine of not more than \$1,000.; (2) confinement in the county jail¹⁴⁵ for not more than six months; or (3) both the fine and confinement.

9. *Section 411.154: “Enforcement by Court Order”*

Section 411.154(b) states:

The court may issue an order requiring a person: (1) to act in compliance with this subchapter or a rule adopted under this subchapter; (2) to refrain from acting in violation of this subchapter or a rule adopted under this subchapter; (3) to give a blood sample or other specimen; or (4) if the person has already given a blood sample or other specimen, to give another sample if good cause is shown.¹⁴⁶

Orders issued under this section are appealable as criminal matters and are to be reviewed under an abuse of discretion standard.¹⁴⁷

As of this writing, the Texas DNA database has produced a total of four “cold hits.”¹⁴⁸ Currently, the Texas DNA database has approximately 12,000 samples on file.¹⁴⁹ There is presently a backlog of approximately 7,000 samples which have been received, but not yet analyzed.¹⁵⁰ The analysis process of DNA specimens takes about two to three days, using current technol-

¹⁴³ *Id.* § 411.151(b).

¹⁴⁴ *Id.* § 411.153(a).

¹⁴⁵ *Id.* § 411.153(b).

¹⁴⁶ *Id.* § 411.154(b).

¹⁴⁷ *Id.* § 411.154(c).

¹⁴⁸ See Rodriguez, *supra* note 41 (discussing cold hits).

¹⁴⁹ See Interview with Dennis Lookerman, *supra* note 100.

¹⁵⁰ Interview with Dennis Lookerman, *supra* note 100.

ogy.¹⁵¹ To date, the Texas DNA database has cost approximately \$1.8 million, and it is currently staffed by eleven individuals.¹⁵² The Texas legislature has recently expanded sections 411.148 and 411.150 to include the offenses of murder, aggravated assault, and certain burglaries.¹⁵³ Interestingly, there is a difference of opinion in the Department of Public Safety as to exactly how far the Texas DNA database should be expanded. The CODIS lab supervisor is of the opinion that just adding murder, certain assaultive offenses, and burglary is all that is necessary, while one DNA crime lab technician we interviewed would like to see all arrests be included.¹⁵⁴ While this finding is not entirely surprising, it is indicative of the contrasting views related to the expansion of these databases.

The Texas DNA database statute is fairly representative of a number of the DNA database provisions of other states. Now that a review of the Texas statute is complete, it can be compared and contrasted with those of other states.

B. OTHER JURISDICTIONS GENERALLY

At the outset, it is important to note that there are states that have "trigger mechanisms" which are narrower than the Texas version, and there are states whose statutes have a much broader scope than Texas.¹⁵⁵ However, the Texas statute accurately depicts the nature and scope of its counterparts in many other jurisdictions. While most of these statutes contain many of the same general features, the critical divergence becomes apparent when the analysis focuses on a single question: what conduct will result in a person being forced to submit a DNA sample for inclusion in a database?¹⁵⁶ This inquiry allows the various statutes to be segregated and categorized, much like

¹⁵¹ Interview with Jody Williams, Crime Lab Technician, Texas Department of Public Safety, in Austin, Tex. (Apr. 7, 1999).

¹⁵² See Interview with Dennis Lookerman, *supra* note 100.

¹⁵³ H.B. 1188, 76th Leg., R.S. (Tex. 1999) (enrolled June 19, 1999, effective on September 1, 1999).

¹⁵⁴ See *supra* notes 116 and 138, respectively.

¹⁵⁵ See, e.g., MONT. CODE ANN. § 44-6-101-108 (1998); LA. REV. STAT. ANN. § 15:601-620 (West 1998), respectively.

¹⁵⁶ See *supra* note 68.

DNA samples themselves. Based on the variety among them, it is hazardous to generalize about all other states. However, the databases of other states can fairly be divided into two broad groups.¹⁵⁷ These groups are: (1) states which include DNA only from persons with convictions for felony sexual offenses;¹⁵⁸ and (2) states which include DNA from persons with convictions for some or all of the state's felony offenses.¹⁵⁹ The reason that these two classifications were chosen is that it enables one to understand the expansionist tendencies regarding these databases. Typically, they were set up in order to target sex offenders only. However, they have tended to gradually expand to encompass ever broader segments of the population.¹⁶⁰

There are two states, however, which flatly do not fall within this rubric. Louisiana and Iowa have statutes in a class all by themselves. Louisiana currently has the most expansive statute on the books. Beginning on September 1, 1999, all persons "arrested for a felony sex offense or other specified offense shall have a DNA sample drawn or taken at the same time he is fingerprinted pursuant to the booking procedure."¹⁶¹ As the statute now reads, a person can be forced to submit a DNA sample merely for being arrested for a simple assault. Under Louisiana law, a person who commits a simple assault "shall be fined not more than two hundred dollars, or imprisoned for not more than ninety days, or both."¹⁶²

Iowa's DNA database system is different than every other state as well. The legislature deferred to the law enforcement divisions of the state, and allowed almost total freedom for the attorney general,¹⁶³ courts,¹⁶⁴ and parole boards¹⁶⁵ to define what

¹⁵⁷ The FBI database should be categorized in the second group, as it takes DNA samples from "persons convicted of crimes." 42 U.S.C. § 14132(a)(1) (1998).

¹⁵⁸ See, e.g., ALA. CODE § 15-20-22 (1999).

¹⁵⁹ See, e.g., ARK. CODE ANN. § 12-12-1103 (Michie 1999).

¹⁶⁰ Barry Steinhardt, Address to the National Commission on the Future of DNA Evidence (Mar. 1, 1999).

¹⁶¹ LA. REV. STAT. ANN. § 15:603, -609(A) (West 2000). "Other specified offense" includes crimes ranging in seriousness from murder to simple assault. *Id.* § 15:603.

¹⁶² LA. REV. STAT. ANN. § 14:38 (West 1997).

¹⁶³ IOWA CODE § 13.10 (1995).

¹⁶⁴ *Id.* § 901.2.

¹⁶⁵ *Id.* § 906.4.

offenses should trigger inclusion in the DNA database. The Attorney General shall "adopt rules . . . for the purpose of classifying felonies and indictable misdemeanors which shall require the offender to submit a physical specimen for DNA profiling. Factors to be considered shall include the deterrent effect of DNA profiling, the likelihood of repeated violations, and the seriousness of the offense."¹⁶⁶

The above emphasis on the "trigger mechanisms" might overstate the similarities a bit, however, because there are significant differences among the statutes exclusive of the issue as to what offenses will result in someone's inclusion in a DNA database. For example, some states require the offender to pay a fee for the costs of running DNA analysis on their sample, while others do not.¹⁶⁷ In addition, some states expressly provide a cause of action against persons who violate the confidentiality and anti-tampering provisions of statutes, while others do not.¹⁶⁸ A few of these issues are worth viewing in the comparative context as well.

C. DATABASE ISSUES

While the list detailed below is by no means exhaustive, it does raise a number of important topics relating to the mechanics of these databases. Consider the following questions:

1. *Who has access to these databases?*

Most states restrict access to law enforcement agencies, court proceedings, and to a defendant in connection with the defense of the charge(s) that gave rise to the DNA sample.¹⁶⁹

¹⁶⁶ IOWA CODE § 13.10 (1999).

¹⁶⁷ Compare, e.g., S.C. CODE ANN. § 23-3-670(A) (Law. Co-op. 1999) (mandatory \$250 fee assessed against offender which cannot be waived by the court) with NEV. REV. STAT. § 176.0915 (1999) (\$250 fee, but with an undue hardship exception) and VT. STAT. ANN. tit. 20, §§ 1933-36, 39 (1999) (no fee recoupment provision in the statute).

¹⁶⁸ See R.I. GEN. LAWS § 12-1.5-15(3) (1998) (aggrieved person may bring civil action for damages, injunctive relief, and reasonable attorneys' fees).

¹⁶⁹ See ALA. CODE § 36-18-27 (1999).

2. *What security measures are commonly utilized?*

Most states have penalties designed to combat unauthorized use and tampering.¹⁷⁰

3. *Does the statute grant immunity to those who draw samples?*

Over thirty states allow some form of immunity, both from criminal and civil liability arising out of the taking of a sample. However, the jurisdictions are about evenly split on whether the immunity covers negligence.¹⁷¹

4. *Is reasonable force allowed to obtain a sample?*

Missouri is one of only eight states that allow the use of reasonable or necessary force to obtain a sample from uncooperative subjects.¹⁷²

5. *Does the statute allow the charging of fees for the expense of analyzing the DNA?*

Like more than one dozen states, South Carolina allows for costs to be assessed against an offender.¹⁷³

6. *Does the statute allow for expunction of DNA records?*

Over three dozen states have included expunction provisions expressly related to the DNA database.¹⁷⁴

The statutes as a whole have many similarities, but there are key distinctions among them. The fact that these statutes are subject to almost constant revision presents a rather large obsta-

¹⁷⁰ N.H. REV. STAT. ANN. § 632-A:23 (1999) (penalties for misuse ranging from Class B misdemeanor to Class B felony).

¹⁷¹ See N.D. CENT. CODE § 31-13-04 (1999) (immunity provided sample was taken according to generally accepted medical procedures); WIS. STAT. § 165.765(2)(a) (1999) ("Any . . . person . . . is immune from any civil or criminal liability for the act, except for civil liability for negligence in the performance of the act.").

¹⁷² See, e.g., MO. REV. STAT. § 650.055(2) (1999) ("Such force may be used as necessary. . .").

¹⁷³ Compare S.C. CODE ANN. § 23-3-670(A) (Law. Co-op. 1999) (mandatory \$250 fee assessed against offender which cannot be waived by the court); with NEV. REV. STAT. § 176.0915 (1999) (\$250 fee, but with an undue hardship exception).

¹⁷⁴ See, e.g., MONT. CODE ANN. § 44-6-107 (1999) (mandatory expungement upon reversal of conviction).

cle to a comprehensive survey, and due to the rapidly changing nature of these laws, any comparative study is really more like a photograph that freezes a moment in time.

D. ANOMALOUS PROVISIONS

Despite a general congruence among the different statutes, there are several unique provisions that are worth mentioning. A small number of these anomalies are presented here for the reader's consideration. First, Pennsylvania's statute ordered the commissioner of the State Police to publish a notice when the database was fully operational. Perhaps this was a legislative attempt to circumvent any *Lambert*¹⁷⁵ claims (a claim which arises when a person argues a lack of knowledge of a law's applicability). Presumably, a person subject to inclusion in the database would not be successful in challenging the law on the grounds that it was unknown to the general public, or that it was not easily discoverable. By publicly announcing the readiness of the DNA database system, a challenger would have a difficult task to prevail on a *Lambert* claim. Second, South Carolina's fee recoupment provision involves a \$250 charge which cannot be waived by a court, and a prisoner may not be released from prison on parole or even after the completion of his sentence until the fee is paid.¹⁷⁶ Third, Virginia, which had the first DNA database in the country, now requires DNA samples for every person convicted of a felony.¹⁷⁷ However, unlawful use of the database information can be a felony.¹⁷⁸ Thus, by misusing the DNA database, a person could easily find themselves the newest member of the database.

VI. CONCLUSION

At the outset, this paper raised one simple question: are we better off living in a world where our most basic and singularly unique characteristics are on file, serving as a constant shadow over our daily lives? The question suggests a brooding omni-

¹⁷⁵ *Lambert v. California*, 355 U.S. 225 (1957).

¹⁷⁶ S.C. CODE ANN. § 23-3-670(A) (Law. Co-op. 1999).

¹⁷⁷ VA. CODE ANN. § 19.2-310.2 (Michie 1999).

¹⁷⁸ *Id.* § 19.2-310.6.

presence of big government that makes us uncomfortable. Yet, if DNA databases could be proven to be of unparalleled value in fighting crime, then the answer might be yes, other concerns notwithstanding. In this vein, we have no quarrel whatsoever with the earliest and most basic of DNA applications in the criminal law: known suspect testing and post-conviction relief. We agree that there is unparalleled value to the use of DNA testing to match a particular suspect's DNA with that extracted from trace evidence left behind at a crime scene. Similarly, can there be a more justice-oriented application for DNA than to use its exculpatory capabilities to exonerate persons who were wrongfully accused and convicted? Moreover, aside from the obvious moral issues, a wrongful conviction serves no purpose, and consequently is of no value in our criminal justice system. Each of these DNA applications should be used as extensively as possible, not only as effective crime control measures, but more importantly, as definitive tests of whether an accused, or even a previously convicted person, is actually innocent.

Beyond these two applications of DNA testing per se, however, our inquiry concerning the spreading craze over DNA databases as a crime control measure does not offer similar support. In fact, the analysis reported here of the best available government crime data raises serious concerns that DNA databases are proliferating and becoming ever more inclusive, and the costs associated with collecting, testing, and storing the information are rising into the hundreds of millions of dollars. These developments are occurring all across the country despite the absence of convincing evidence that the DNA mining process will strike gold as proponents have claimed.

We have demonstrated that DNA databases will not be greatly successful in increasing the extent to which police solve the vast majority of the seven FBI Index crimes. This was shown to be the case because the vast majority of Index crimes are property offenses, and this type of offense does not carry a high potential for beneficial DNA testing because the usual property offense crime scene is not likely to contain the perpetrators' DNA, and even if it does, such evidence will seldom be looked for, let alone collected and tested for comparison with the DNA

databases. We also showed that DNA mining will be even less beneficial for solving the vast majority of Non-Index crimes. Again, we argued that the millions of less serious Non-Index crime scenes hardly ever contain DNA-related evidence. We further argued that even if such crime scenes did contain DNA evidence, local law enforcement hardly has the necessary resources to treat these offenses as though they deserved the intensive crime scene effort that is usually reserved for serious violent crimes against the person. In this regard, we noted that it is often difficult enough to convince the police to dust for fingerprints at a residential burglary, because the police know that their search will likely be futile. Imagine, therefore, trying to convince police to search the crime scene (usually outside) of a robbery for such evidence as the perpetrator's hair, tissue, or other residual evidence.

We also considered the value of DNA database evidence to the prosecutorial function. We found that DNA evidence is not used by a majority of prosecutors' offices across the country. We did find that "big city" prosecutors relied heavily on DNA evidence both at trial and during plea negotiations. However, this extensive use pattern in the most populous areas must be discounted by the fact that these offices handle only about one-third of the serious crime in the United States. That is, the vast majority of crime, about 64%, occurs in smaller jurisdictions, which are served by prosecutor units that do not rely heavily on DNA evidence, either at trial or during plea negotiations, regardless of the severity of the crime being prosecuted. We found that prosecutorial use of DNA is clearly a big city or large county phenomenon, but the majority of crime is committed and prosecuted elsewhere, thus diminishing the value of DNA as a crime control measure at the macro level. Further, we also found that even among the big city prosecutors, DNA evidence use was restricted to mostly homicides, rapes, and other very serious offenses.

We also considered the cost-effectiveness of DNA databases. Here the results were quite convincing. At present, the DNA extraction process is a highly expensive and time-consuming process when considered in the aggregate. The costs associated

with increased testing, especially the increased testing necessitated by the more "inclusive" DNA database proposals are astronomical when compared to the expected crime level benefits associated with the databases. For example, we provided an examination of the soon-to-be-launched Federal Convicted Offender DNA Database and found that, while it will cost \$5,335,000 the first year, the current total population of offenders who will be included in the database numbers about 1,200 inmates. This translates to some \$4,445 per inmate. If the costs of analyzing a sample are only \$50, then we must ask the question: Where is the rest of this money supposed to go? Clearly, a legitimate question remains: Are DNA databases and their direct and more indirect or diffuse costs the most effective way to spend scarce criminal justice resources? At this point, the answer must be no.

Last, we considered various future scenarios and proposals for various DNA database configurations. These proposals include very specific eligibility criteria, like persons convicted of sex offenses or violent crimes, but they also include more expansive criteria like persons arrested, the general public, or even newborns as has been endorsed by Mayor Giuliani of New York City.¹⁷⁹ We argued that there are actual financial costs, as well as ethical and civil liberty costs associated with these ever expanding DNA database proposals. The essential point is clear. The only reason to bear the manifold costs associated with DNA databases is if, and only if, it can be shown that a particular database configuration will be demonstratively successful in solving crimes or easing prosecutions which would not be possible otherwise. Thus, what good are the more expansive (and expensive) database definitions like, "all persons arrested for anything?" Our response is: "Not very good." The only databases that appear worthy of serious consideration are those which focus on specific categories of criminals, like violent offenders and sexual predators. It remains open to debate whether such databases should contain just convicted persons or arrested persons as well. However, the restriction to particu-

¹⁷⁹ Bruce Lambert, *Giuliani Backs DNA Testing Of Newborns for Identification*, N.Y. TIMES, Dec. 17, 1998, at B4.

lar offense types appears to be highly justified on the basis of the demonstrative yield owing to crime scene issues and the well recognized recidivism potential of violent offenders and sexual predators. We should all look with great skepticism at proposals for more inclusive eligibility. Further, we should demand that the proponents of wider inclusion prove scientifically and unequivocally the crime level value of the more inclusive databases. In proposing that DNA be taken from every person arrested in New York City, the Police Commissioner, Howard Safir has stated that, "A professional burglar or car thief, for instance, might leave skin or sweat cells when forcing open a door or window. As long as there is one cell, you could use this to help solve just about any crime you could think of."¹⁸⁰

Statements like this not only strain credibility, but give us all reason to pause and wonder whether public officials have succumbed to a fatal case of DNA fever.

There are ever present dangers that the public will be swept up in the same euphoria over DNA mining which proponents, like Police Commissioner Safir, seem to believe is the best thing to hit law enforcement since fingerprinting.¹⁸¹ Meanwhile, the implications for privacy and other personal liberty issues, plus the huge potential for abuse, should encourage us to keep looking over Big Brother's shoulder even as he watches us. We cannot stress enough the civil liberty issues, and perhaps, other constitutional concerns, subsumed within the DNA database craze. We endorse the recent comments of James Starrs, a George Washington University Law Professor and Distinguished Fellow of the Academy of Forensic Sciences, who cautioned against the dangers of DNA databases. Starrs suggested, "Just because it may serve some law enforcement purpose does not mean the Constitution falls by the wayside."¹⁸² Starrs also noted,

¹⁸⁰ See John Kifner, *Safir Says DNA Proposal Would Cut Property Crime*, N.Y. TIMES, Dec. 13, 1998, at I51.

¹⁸¹ Recall the USA TODAY Internet poll discussed in Part IV.A, *supra*, where more than 50% of respondents approved of DNA testing and storage for all arrested people. Due to the unscientific methodology of this poll, we are unable to determine whether this is a knee-jerk response or the product of careful thought, but it nevertheless is illuminating as to the public's current views on DNA databases.

¹⁸² Mark Hansen, *Banking on DNA*, 85 A.B.A. J. 26-27 (1999).

"I know I don't want the police to have something of mine without having some specific reason and I think most people probably feel the same way."¹⁸³ Further, we applaud Attorney General Reno's inclusion of prosecutors, judges, criminal defense attorneys, forensic scientists, and others to the National Commission on the Future of DNA Evidence. By having such a diverse and varied group of learned individuals, it is our hope that all the issues raised in this paper and more will be thoughtfully discussed and debated, if not resolved. Perhaps when the public realizes how invasive and how very expensive DNA databases are becoming, there will be much greater scrutiny accorded to the supposed benefits which many law enforcement and other elected officials are quick to claim but slow to demonstrate.

¹⁸³ *Id.*