Genetic Information and Privacy Interests: The DNA Fingerprinting Act

*By Ronald J. Rychlak**

In the early 1980s, geneticist Alec Jeffreys of Leicester University discovered that DNA, the nucleic acid molecule found in all living organisms, could be used to isolate a "genetic marker" unique to each individual. This marker can be found in hair, blood, saliva, and other parts of the body. Not all testing procedures evaluate every aspect of DNA, but DNA evidence can be important in the establishment of paternity, the determination of familial relations for inheritance purposes, and the identification of criminal suspects.

The first reported use of DNA evidence by an American court came in 1988 and it received widespread public attention in the 1995 O.J. Simpson criminal trial, at which the jury rejected the prosecution's DNA evidence.[1] In criminal cases, DNA evidence serves primarily to confirm the presence of suspects at crime scenes.[2] The match of crime scene DNA to an individual by comparison through a database is known as a "cold hit." There are various claims about the number of rapes and murders that could be prevented with cold hits from a well-developed DNA register, but the evidence is conjectural. Nevertheless, it is clear that a larger catalog of DNA samples increases the value of DNA evidence.

Perhaps the strongest case for expansive DNA sampling comes from England, which over the past ten years has undertaken the world's most aggressive DNA gathering effort. Not only do English authorities take DNA samples from arrestees but since 2001 they have been permitted to retain those samples even when the arrest results in an acquittal. Moreover, in 2004 British police were given the authority to collect DNA from mere suspects.[3] Because of these liberal policies, England has been able to acquire and maintain over four million DNA samples, about six percent of the population--more than ten times the percentage of DNA samples maintained in the United States.

The British database has matched nearly 600,000 suspects to crimes.[4] For several years, most American states have had legislation regarding the collection of DNA, usually involving convicted felons.[5] These laws vary significantly from one state to another, but as of today all of the states share their DNA information with a national database, the FBI Laboratory's Combined DNA Index System ("CODIS").[6] CODIS began as a pilot project in 1990, serving fourteen state and local laboratories. Over time, with strong backing from most police departments, many states joined the pool. In 2000, with the enactment of the DNA Analysis Backlog Elimination Act ("Backlog Act"), individuals convicted of murder, manslaughter, sexual abuse, child abuse, kidnapping, robbery, burglary, or any attempt or conspiracy to commit such crimes, could be compelled to submit a DNA sample.[7] Federal, state, and local law enforcement could also input DNA samples to CODIS, and compare crime scene DNA to the samples collected from potential suspects and other crime scenes.

Despite the potential of the Backlog Act, the DNA database did not result in a large number of cold hits. For a DNA database to be truly effective in identifying perpetrators of many crimes, it has to contain many, many samples. Senator Jon Kyl has taken this up as a cause and has been promoting the DNA Fingerprinting Act as a tool to use in preventing crime. The Senator's web page gave the following example:

> In early 1993, [Andre] Crawford was arrested for felony theft. Under the DNA Fingerprint Act, DNA could have been taken from him at that time and kept in [the national DNA database]. Because it was not, when Crawford murdered a 37-year-old woman in September 1993, although he left DNA at the scene, he could not be identified as the perpetrator. Over the next six years, Crawford went on to commit one rape and to murder ten more women between the ages of 24 and 44. If Crawford's DNA sample had been taken and kept in NDIS after his March 1993 arrest, he could have been identified and arrested after the September 1993 murder, and ten more murders and one rape would have been prevented.[8]

Kyl argued that taking a DNA sample was no more invasive or complex than taking a fingerprint from a suspect.

The DNA Fingerprinting Act & Privacy Concerns

The DNA Fingerprinting Act passed the House of Representatives in 2005 as stand-alone legislation. It was incorporated into the Senate's reauthorization of the Violence Against Women Act, and passed in that form. President George W. Bush signed it into law on January 5, 2006. The Act authorizes the collection of DNA from anyone convicted, charged, or arrested for a felony or crime of violence; and from any non-U.S. citizen who is merely detained by a federal agency.[9] It further provides for the DNA samples to be entered into the CODIS system. Those arrestees or detainees who end up being exonerated, having their charges dropped, or against whom charges are never filed, may have their DNA fingerprint removed from the CODIS system, provided that the FBI receives a certified final court order relating to each charge.[10] (Obviously, this is complicated in the case of detainees who were never charged.)

At least ten states have already passed "sample on arrest" laws for some crimes.[11] But the DNA Fingerprinting Act was designed to remove concerns states may have had regarding taking samples and putting them into the CODIS database. With the DNA Fingerprinting Act now law, it is likely that more states will soon adopt these laws.[12] Supporting such a move, Arizona Governor Janet Napolitano said, "DNA in many respects is the new fingerprinting and when people get arrested now they usually get fingerprinted. To me this is just an evolution of that process."[13]

But the involuntary extraction of DNA raises special privacy concerns, particularly as regards the Fourth Amendment's protection against unreasonable searches and seizures. DNA can reveal genetic predispositions and health issues. It also reveals

** Ronald J. Rychlak is Professor of Law and Associate Dean for Academic Affairs at the University of Mississippi.* *This paper was originally presented at the annual meeting of the Southeastern Association of Law Schools on July 30, 2007.*

information not just about individuals but about their families.[14] As such, the major objections to a DNA sample on arrest policy are the threat it poses to the constitutionally guaranteed personal privacy of individuals, and the Fourth Amendment bar against unreasonable searches and seizures.

Virtually every case challenging DNA collection has recognized that a compelled collection is a search or seizure.[15] However, most courts have found the searches to be reasonable--the searches are almost always related to convicts or probationers/parolees. And the collecting process itself is not burdensome. As the *Arizona Republic* put it, "The collection method is hardly more intrusive than inking fingers to get a set of prints: a swab with a piece of filter paper is rubbed against the inside of a person's mouth to pick up some cells for sampling. (All of which is a lot less stressful than the urine test for drugs that employers routinely require of job applicants.)"[16]

Taking DNA from arrestees, or even detainees, raises much more difficult issues. Unlike convicts, arrestees and detainees have not tested the evidence and been found guilty of the charged crimes. Of course, even with them, the Fourth Amendment is implicated only if obtaining a DNA sample constitutes an unreasonable search. That essentially boils down to a determination of whether arrestees and detainees have a legally recognized privacy interest that is violated by the collection of their DNA.

In *United States v. Dionisio*, the U.S. Supreme Court upheld a grand jury subpoena for a voice exemplar on the theory that the subpoena itself was not a seizure of the person, and that a person's voice cannot be considered private.[17] The Court explained:

> The physical characteristics of a person's voice, its tone and manner, as opposed to the content of a specific conversation, are constantly exposed to the public. Like a man's facial characteristics, or handwriting, his voice is repeatedly produced for others to hear. No person can have a reasonable expectation that others will not know the sound of his voice, any more than he can reasonably expect that his face will be a mystery to the world.[18]

Similarly, the Supreme Court has long recognized that fingerprinting suspects in the course of booking, photographing them for the purpose of generating evidence, or taking handwriting exemplars in a criminal case is such a minimal intrusion on privacy that probable cause is unnecessary. Unless DNA fingerprinting is fundamentally different from these other matters, the Fourth Amendment should not invalidate the DNA Fingerprinting Act.

The most powerful argument for Fourth Amendment protection is that the DNA strands have the potential to reveal far more information than does a fingerprint. "Given the wealth of genetic material in the famous double helix, we should be cautious. It's sensible to be concerned about, say, employers and insurers getting sensitive information that could cause people to lose their jobs or health coverage."[19] The problem is that this argument does not stand up when applied to the way DNA evidence is collected, kept, and used in the CODIS database.

It is true that DNA molecules, if analyzed at certain loci that are not typically used for identification purposes, could reveal the existence of rare diseases or indicate a predisposition to more common ones. Most police laboratories, however, are not even equipped to do such testing.

DNA profiling for law enforcement purposes is so tightly focused that there's no extra information beyond identification. The profile looks at 13 bits of genetic coding that are uniquely combined in each individual—but have nothing to do with predicting susceptibility to disease or other inherited traits. Each entry in the DNA database is just a string of 13 pairs of numbers (from the mother's and father's side).

That DNA code has no use outside the forensic system, said one scientist—unlike a Social Security number, which is a gold mine for identity thieves.[20]

In fact, "there is currently no known potentially compromising genetic information contained among the thirteen CODIS locations other than the fact that they serve as a unique DNA fingerprint that can also confirm familial relationships."[21] Most consumers willingly provide much more private information in exchange for a few cents when they use discount cards at their grocery stores.

If the retained biological samples collected by law enforcement were to be further analyzed for anything other than CODIS loci, a significant personal privacy issue could come into being.[22] This, however, is unlikely. Even though the labs typically retain the actual cell samples, in case extra tests are needed or technology changes, for security reasons those samples "are identified only by bar code and are stored and handled with the same protection as crime evidence."[23] Moreover, even if private information could be extracted from these samples, legislation similar to that used to protect confidential material in the hands of the IRS could be enacted to protect the privacy of the affected individuals.

There is simply no compelling evidence that DNA samples will compromise the privacy of arrestees. On the other hand, adding arrestee DNA to CODIS will almost certainly generate increased cold hits and ultimately reduce crime. The FBI currently claims a cold hit rate of only 22% using CODIS.[24] In the United Kingdom, where law enforcement officials follow a "sample on arrest" policy, the cold hit rate is almost 40 percent.[25] Similar statistics can be found in New Zealand, where sample on arrest policies have been in place for years.[26] Unless and until DNA fingerprinting is proven to reveal more about an arrestee than a unique and unchanging identification code, the value of DNA fingerprinting seems to far outweigh the privacy intrusion on the affected individuals.

Perhaps the hardest question relates to taking DNA samples from mere suspects. This applies only to non-citizens, and several commentators have suggested that it should be seen in light of the recent debates over illegal immigration from Mexico.[27] According to Deborah Notkin, former president of the American Immigration Lawyers Association: "It's so broad, it's scary. It is a terrible thing to do because people are sometimes detained erroneously in the immigration system." Truthfully, however, collection of DNA only becomes a concern if it results in a cold hit, or if the DNA is entered into CODIS and matches up with a future crime. In either of these cases, the equities are with the authorities. Lynn Parrish, spokeswoman for the Rape, Abuse and Incest National Network, pointed

to the case of Angel Resendiz, a Mexican immigrant who committed at least fifteen murders and numerous rapes in the United States. Deported seventeen times before finally being executed in Texas, Ms. Parrish said, "If he had been identified as the perpetrator of the first rapes, it would have prevented later ones." Regarding the DNA Fingerprinting Act, she said, "If this had been implemented years ago, it could have prevented many crimes. Rapists… don't just rape, they also murder."[28]

A slightly different concern is that if a minority racial group is arrested or detained more often than other racial groups, DNA samples will be taken from that minority more frequently, and the DNA database will contain a higher percentage of their DNA.[29] That, of course, would suggest that members of that minority would end up being identified more often through the database. But the same problem is true of traditional fingerprints, and relates not to the DNA collection but to the reasons for the arrests; they might or might not be valid. Moreover, if most crime takes place within racial groups, the minority group might actually end up benefiting, because it will have a safer community. In any case, this is not a reason to hold that the DNA Fingerprinting Act is unconstitutional.

Perhaps the most important remaining question, then, relates to the appropriate role of governmental agencies. There will almost certainly be pressure to expand the CODIS program. It is not hard to imagine a time when DNA samples are taken from all children shortly after birth. This could be justified on a safety basis. DNA fingerprinting will help to exonerate the innocent, convict the guilty, and protect the children. But are governmental agencies competent to handle this much authority? If CODIS expands to the point where it covers all citizens, it may come to embody the "big brother" government so feared by generations of Americans.

DNA evidence is thought by many to be foolproof, but it is only as reliable as the people and processes by which it is collected and analyzed. As with all governmental programs, there will be instances of poor management, budget shortages, and corruption in the CODIS program. Mistakes will happen.[30] Moreover, the DNA Fingerprinting program is "certain to bring a huge new workload for the F.B.I. laboratory that logs, analyzes, and stores federal DNA samples." [31]

Thus far, fortunately, neither CODIS nor the other genetic databases have been subject to significant acts of fraud or data compromise. The downside risk related to errors or abuse with the current CODIS system is not significantly different than with traditional fingerprints or other investigatory techniques. Unless and until that changes, DNA fingerprinting will likely continue to be seen as an important tool in the search for justice.

CONCLUSION

The clear legislative intent behind DNA fingerprinting is to generate investigative leads and improve the accuracy of the criminal justice system. The collection of the DNA is not overly burdensome or embarrassing, and the data are useful, reliable, and effective. The risk of harm to the innocent is minimal. Moreover, DNA data significantly increase the accuracy of the criminal justice system. The Innocence Project, which uses DNA to try to win the release of the wrongfully convicted, has already helped exonerate over 200 American convicts.[32] Presumably, none of them would have served any time if DNA evidence had been used to find the real culprit at the time of their trial. Concern about the development of a big-brother-type database is legitimate, but that is more a matter of political will than constitutional constraint. As such, the balance between individual privacy and government interest points to the reasonableness of the collection and use of DNA evidence without a judicial warrant.

Endnotes

1 Andrews v. State, 533 So.2d 841 (Fla. Dist. Ct. App. 1988). By 1994, a federal appellate court found that it was appropriate to take judicial notice of DNA testing. United States v. Martinez, 3 F.3d 1191 (8th Cir. 1993), *cert. denied*, 114 S.Ct. 734 (1994).

2 Human Genome Project Information, DNA Forensics, http://www.ornl.gov/sci/techresources/Human_Genome/elsi/forensics.shtml (last visited June 19, 2007).

3 Aubrey Fox, *The Move to Expand DNA Testing*, The Gotham Gazette, May 21, 2007 <<http://www.gothamgazette.com/article/crime/20070521/4/2186>>.

4 Anna Gosline, *Will DNA Profiling Fuel Prejudice?*, New Scientist, April 25, 2005 <<http://www.newscientist.com/channel/opinion/mg18624944.900-will-dna-profiling-fuel-prejudice.html>>.

5 *See, e.g.*, 42 U.S.C. § 14135 (2000); CAL. PENAL CODE § 296 (West 2006); LA. REV. STAT. ANN. § 15:609 (2006); NEB. REV. STAT. § 29-4103 (2006); N.J. STAT. ANN. § 53:1-20.20 (West 2007); TEX. GOV'T CODE ANN. § 411.1471 (Vernon 2006); VA. CODE ANN. § 19.2-310.2:1 (2006).

6 According to the FBI, all fifty states and the U.S. Army cooperate with CODIS <<http://www.fbi.gov/hq/lab/codis/partstates.htm >>

7 DNA Analysis Backlog Elimination Act of 2000, Pub. L. No. 106-546, § 3, 114 Stat. 2726, 2728 (codified as amended at 42 U.S.C. § 14135a).

8 Press Office, Press Release, *Judiciary Committee Adds Kyl DNA Bill to Violence Against Women Act* (September 8, 2005), *available at* http://kyl.senate.gov/record. cfm?id=245432.

9 Several states also collect DNA samples from arrestees who are never charged (*e.g.*, detainees). Ron Scherer, *Should DNA be collected from all criminals?*, The Christian Science Monitor, May 19, 2006.

10 The burden of seeing that the order gets to the FBI would appear to be on the detainee/arrestee. Jonathon Krim, *Bill Would Permit DNA Collection from All Those Arrested*, The Washington Post, September 24, 2005.

11 *A-OK on DNA, ASAP*, The Arizona Republic, Jun. 27, 2007 ("Ten states and the federal government have some requirement for collecting DNA from arrestees. The United Kingdom has taken DNA from arrested suspects for years. "). *See, e.g.,* CAL. PENAL CODE § 296 (West 2006); LA. REV. STAT. ANN. § 15:609 (2006); NEB. REV. STAT. § 29-4103 (2006); N.J. STAT. ANN. § 53:1-20.20 (West 2007); TEX. GOV'T CODE ANN. § 411.1471 (Vernon 2006); VA. CODE ANN. § 19.2-310.2:1 (2006).

12 *See A-OK on DNA, ASAP*, The Arizona Republic, Jun. 27, 2007.

13 The Associated Press, *Governor Backs Collecting DNA from Arrestees*, Tucson Citizen, June 21, 2007.

14 This has led to a controversy between a Colorado District Attorney, who wants more information about a non-perfect DNA match, and the California Attorney General who sees this as a privacy issue. *See* Richard Willing, *DNA 'near matches' spur privacy fight*, USA Today, Aug. 3, 2007, at 3A.

15 *See, e.g.,* U.S. v. Kincade, 379 F.3d 813, 837–38 (9th Cir. 2004); Rise v. Oregon, 59 F.3d 1556, 1560 (9th Cir. 1995); Landry v. Attorney Gen., 709 N.E.2d 1085, 1092 (Mass. 1999).

16 *A-OK on DNA, ASAP*, The Arizona Republic, June 27, 2007.

17 410 U.S. 1 (1973).

18 *Id*. at 14.

19 *A-OK on DNA, ASAP*, The Arizona Republic, Jun. 27, 2007.

20 *Id*.

21 Patrick Haines, Note: *Embracing the DNA Fingerprint Act*, 5 J. on Telecomm. & High Tech. L. (2007) (citing John M. Butler, Forensic DNA Typing: Biology and Technology Behind STR Markers (2001)). At least one commentator has argued that the family relations that can be discerned through DNA presents a problem because entire families may become suspect due to a DNA sample, even though there is no exact match on file. Ronald Bailey, *Criminal Kinship: Slouching Toward a DNA Database Nation*, Reasononline, May 19, 2006.

22 *Haines*, *supra* note 21.

23 *A-OK on DNA, ASAP*, The Arizona Republic, Jun. 27, 2007.

24 *See* Federal Bureau of Investigation – Combined DNA Index System (CODIS) Home Page, http://www.fbi.gov/hq/lab/codis/index1.htm (last visited Apr. 2006) (noting that 27,700 cold hits had been generated from 124,285 crime scene DNA samples as of Nov. 2005).

25 Haines, *supra* note 21.

26 *See*, *e.g.*, S.A. Harbison et al., *The New Zealand DNA Databank: Its Development and Significance as a Crime Solving Tool*, 41 Sci. & Just. 33, 36 (2001) (reporting that 77% of reported database matches in New Zealand originated from burglaries); David Werrett, "The Strategic Use of DNA Profiling," Address to the 18th International Congress of Forensic Haemogenetics (Aug. 19, 1999).

27 *See* National Immigration Law Center, *How Does the Kyl Amendment to the VAWA Reauthorization Bill Affect Immigrants?*, October 2005 <<www.nilc.org>> ("For Immigrants, the provision is stunningly egregious and overreaching. It would cast immigrants – both documented and undocumented – as criminals, requiring them to submit to seizure of their DNA….").

28 Julia Preston, *U.S. Set to Begin a Vast Expansion of DNA Sampling*, N.Y. Times, Feb. 5, 2007.

29 *British police targeting young blacks – report,* The Jamaica Gleaner, June 19, 2007 <<http://www.jamaica-gleaner.com/gleaner/20070619/lead/lead6.html>>. *See also* Anna Gosline, *Will DNA Profiling Fuel Prejudice?*, New Scientist, April 25, 2005 <<http://www.newscientist.com/channel/opinion/mg18624944.900-will-dna-profiling-fuel-prejudice.html>>.

30 *See, e.g.,* Adam Liptak, *You Think DNA Evidence is Foolproof? Try Again*, N.Y. Times, Mar. 16, 2003, at D5.; Jennifer L. Mnookin, *Fingerprint Evidence in an Age of DNA Profiling*, 67 Brook. L. Rev. 13, 49–50 (2001).

31 *Preston*, *supra* note 28.

32 In 1992, attorneys Barry Scheck and Peter Neufeld created a center at the Benjamin N. Cardozo School of Law of Yeshiva University to help those convicts who were able to conclusively prove their innocence with DNA evidence. This evolved into a number of "Innocence Projects" around the nation. This author is currently involved in the establishment of the Mississippi Innocence Project.