

ALL IN THE FAMILY: PRIVACY AND DNA FAMILIAL SEARCHING

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I. INTRODUCTION

For three years in the early 1980s, a violent rapist was on the loose in South Yorkshire, England. The rapist, who had attacked at least six women, was labeled the “Dearne Valley Shoe Rapist” because, in addition to sometimes tying up the women with their stockings, he always stole their stiletto-heeled shoes.¹ A high-profile campaign to find the assailant had been unsuccessful for more than twenty years. Even searching for a genetic match in the national DNA database with the semen found on the victims’ clothes led nowhere. But in 2006, investigators turned to a new technology called familial searching to identify local individuals in the DNA database whose genetic profile closely matched the crime scene evidence, suggesting they might be related to the rapist. After visiting two of the forty-three individuals with partial matches, a police officer knocked on the door of June Lloyd² and told her, “We’re running a cold case investigation and there are some similarities between your DNA and the offender’s DNA. Do you mind telling me, have you got any brothers?”³ June admitted to having a brother, but insisted that he couldn’t be the criminal; her brother was a middle-aged father of three, a successful manager of a printing press, and a pillar of the community.

After learning of the investigation, June’s brother, James Lloyd, told a relative to look after his children because he had “committed a series of offences 20 years ago.”⁴ He then attempted to commit suicide. James Lloyd was soon arrested and confessed to the rapes. A search underneath a trap door in his office revealed stockings, jewelry, purses, and more than 100 stilettos.⁵ James Lloyd was ultimately convicted for the rape of four women and the attempted rape of two others. So ended “the biggest victory yet in a ‘cold case’” using familial searching.⁶

As I discuss in Part II, familial searching is a recent extension of DNA profiling, which has been a powerful tool in law enforcement for over twenty years.⁷ Once courts found DNA evidence admissible,

1. *DNA Traps Rapist with Shoe Fetish*, BBC NEWS, July 17, 2006, http://news.bbc.co.uk/2/hi/uk_news/england/south_yorkshire/5187634.stm; see also Daniel Schorn, *A Not So Perfect Match*, CBS NEWS — 60 MINUTES, July 15, 2007, <http://www.cbsnews.com/stories/2007/03/23/60minutes/main2600721.shtml>.

2. Her DNA was in the national database because she had been arrested for driving under the influence. *DNA Traps Rapist*, *supra* note 1.

3. Schorn, *supra* note 1.

4. *DNA Traps Rapist*, *supra* note 1.

5. *Id.*; Schorn, *supra* note 1.

6. *DNA Traps Rapist*, *supra* note 1.

7. Michelle Hibbert, *DNA Databanks: Law Enforcement’s Greatest Surveillance Tool?*, 34 WAKE FOREST L. REV. 767, 768 (1999); Tracey Maclin, *Is Obtaining an Arrestee’s DNA a Valid Special Needs Search Under the Fourth Amendment? What Should (and Will) the Supreme Court Do?*, 34 J.L. MED. & ETHICS 165, 165 (2006).

states quickly began to mandate the creation of DNA databases with samples collected from specific classes of offenders.⁸ Today all fifty states and the federal government have statutes authorizing the creation of DNA databases with profiles from certain convicted felons.⁹ Over the years, the trend has been to broaden the pool of offenders to include nonviolent felons, misdemeanants, and even arrestees.¹⁰ Familial searching is just one more step in this trend toward expanding the reach of DNA profiling.

Familial searching builds on one of the most basic facts of genetics: DNA is shared among family members. As a result, a forensic DNA profile “not only reveal[s] extensive genetic information about the individual whose ‘genetic fingerprint’ is on file, but also about his or her close relatives.”¹¹ Familial searching uses this principle to infer that someone whose DNA is a close, but not perfect, match to a crime scene sample might be related to the offender.¹² England has pursued such leads to powerful effect in some well-celebrated cases, including the “shoe rapist” case. It has also been used successfully in a few states in America. Recently, the federal government (via the FBI) and some states have begun to explore the possibility of using DNA databases to identify criminals through familial searches.¹³

As seductive as familial searching is, it pushes us to consider the appropriate limits of the uses of DNA databases and DNA profiling. As I argue in Part III, the compulsory collection of DNA from convicted offenders alone raises numerous privacy and civil liberty concerns given the long-term retention of genetic material and all of the personal information contained therein.¹⁴ The move to collect DNA from arrestees raises additional concerns because of the legal presumption of innocence.¹⁵ Familial searches raise these and additional privacy concerns for the offender or arrestee, his family members, and the family itself, including the possible revelations that some members are not genetically related or are related in ways that people did not expect. Furthermore, they expose innocent relatives to life-long surveillance and possible surreptitious collection of DNA simply be-

8. Maclin, *supra* note 7, at 165.

9. *Id.* at 166.

10. Hibbert, *supra* note 7, at 771 & n.12, 773–74 (noting that in just nine years, the number of states with DNA databanks increased from zero to fifty).

11. *Id.* at 782.

12. Alice A. Noble, *DNA Fingerprinting & Civil Liberties*, 34 J.L. MED. & ETHICS 149, 150 (2006); *see also infra* Part II.B.

13. *See infra* Part II.B.

14. The lower courts have reached a near-consensus that the mandatory collection of DNA from convicted offenders is constitutionally legitimate under the general theory that the reduced expectation of privacy for convicted offenders pales in comparison to the strong public interest of identifying perpetrators. *See infra* Part III.A.1.

15. *See infra* notes 206–09 and accompanying text.

cause they are related to someone in the national database. In addition, as Part IV shows, familial searching threatens to exacerbate underlying racial inequities reflected in disproportionate rates of arrest and conviction among some minority communities.¹⁶ As a result, this forensic technique raises difficult questions about balancing competing goods: the public goods of convicting wrongdoers, deterring future crimes, honoring victims' interests, and exonerating the innocent, versus the public goods of racial equity, civil liberties, and privacy.

This Article explores these competing values in the context of familial searching and concludes in Part V that we should hesitate to embrace this technique solely because it may solve more crimes.¹⁷ Instead, we should proceed slowly, contemplating both the threats that it poses as well as its potential for good. I suggest further that, given the particular goals of law enforcement and the nature of judicial decision making, neither law enforcement nor the courts adequately consider the full extent of the privacy threats posed by DNA profiling.¹⁸

Part V.A offers a methodology for balancing the competing interests at stake, and Part V.B proposes a specific regulatory scheme for the use of familial searching consistent with that approach. Rather than focus primarily on the public safety consequences of DNA forensics (the "security consequentialist" approach), I suggest an approach that gives due weight to all that is at stake on both sides. The security consequentialist approach is destined always to yield to ever-expanding uses of DNA databases. The ability to solve just one more crime, to convict just one more guilty rapist, and to honor the interests of just one more victim might easily be seen as a tangible and emotionally powerful good that trumps any seemingly amorphous concerns we have about racial equity or the privacy interests of convicted individuals and their families. The alternative is not desirable, however. A framework that unduly privileges privacy, civil liberties, or racial justice runs the risk of allowing these values to trump the societal interests of public goods related to solving crimes.

We need an approach that neither under- nor over-values privacy or justice but instead assigns each its due weight. Under this approach, we begin with the notion that we may have several *prima facie* duties that can potentially be in conflict — *prima facie* duties to protect privacy, to promote justice, to protect the public, to honor the interests of victims, and to exonerate the innocent. Rather than conclude that any one of these duties should always prevail over the others, we must explore the relative rightness or wrongness of fulfilling one obligation over the competing obligations in any particular circumstance. Even

16. *See infra* Part IV.

17. Whether it can achieve all that it promises depends a great deal on how the technique is used. *See infra* Part V.B.

18. *See infra* text accompanying notes 443–50.

when we conclude that the rightness of fulfilling one prima facie duty outweighs the rightness of fulfilling competing prima facie duties, we nevertheless continue to feel the pull of the overridden duties. In other words, the overridden values leave “moral traces,” which require us to minimize the violation of the outweighed prima facie obligations as much as possible.

In the context of DNA profiling, this approach necessitates a far greater weighting of privacy than the courts and law enforcement have generally allowed in their tendency to focus on the specific issues relevant to the resolution of a particular case or investigation. When one views the issues so narrowly, the prima facie duties to protect the public and honor the victims’ interests will often seem to outweigh the privacy interests of the individual whose DNA is sought. But when one considers not just the immediate privacy threats to that individual but also the potential future threats to that individual, his family members, and the community at large, the privacy concerns become much weightier and the prima facie duty to protect privacy becomes more compelling. My goal in this piece is to ensure that the full breadth of the privacy interests is adequately accounted for by the courts or at least by the legislatures.

Given that I do not want to suggest that our obligation to protect privacy is absolute, however, I acknowledge that familial searching, if conducted with care and with the appropriate safeguards, is legitimate in a limited number of circumstances. We must stay true to these limits and avoid being seduced by the false promise of elusive benefits that may materialize simply by expanding the reach of DNA profiling. To that end, Part V.B suggests specific regulatory schemes to increase the benefits and effectiveness of familial searching while also maximizing privacy protections. Given that ever-expanding DNA profiling raises so many privacy, civil liberty, and equity concerns, familial searching can only be ethically justified if measures are taken to ensure that the technology is truly effective and that the threats to privacy and racial justice are minimized. DNA may be “all in the family,” but only rarely should DNA profiling be.

II. DNA DATA BANKS AND FAMILIAL SEARCHES

A. DNA Profiling and Databases

DNA profiling began in England with Alec Jeffreys’s accidental discovery¹⁹ that variations in our DNA could be used to create unique

19. Giles Newton, *Discovering DNA Fingerprinting*, WELLCOME TRUST, Apr. 4, 2004, http://genome.wellcome.ac.uk/doc_wtd020877.html.

and identifying DNA profiles, or DNA “fingerprints.”²⁰ In 1985, he used DNA fingerprints to solve the rape and murder of two young girls in England by identifying a man whose DNA profile matched the crime-scene evidence.²¹ Three years later, the FBI began to use this powerful forensic tool.²²

DNA fingerprinting or profiling is based on the principle of genetic variation among individuals. Deoxyribonucleic acid, or DNA, resides in the twenty-three pairs of chromosomes that are present in most cells; we inherit half of this genetic material from each biological parent. Although humans are more genetically alike than different — we share over 99.9% of our genetic material with one another — a fair amount of genetic variability, or polymorphism, exists in certain portions of the genome.²³ Analyzing genetic patterns in these highly polymorphic regions — which usually occur in non-coding stretches that do not contain information about specific genes²⁴ — can create unique genetic profiles.²⁵ Currently, most states and the FBI create a genetic profile by analyzing the DNA from thirteen specific regions (“loci”) of the genome where genetic variability is expressed by varying numbers of repeated sequences of DNA called short tandem repeats (“STRs”).²⁶ Genetic testing for identification compares the genetic profiles of two samples to see if there is a

20. Mark A. Rothstein & Sandra Carnahan, *Legal and Policy Issues in Expanding the Scope of Law Enforcement DNA Data Banks*, 67 BROOK. L. REV. 127, 127 (2001).

21. NAT'L INST. OF JUSTICE, THE FUTURE OF FORENSIC DNA TESTING: PREDICTIONS OF THE RESEARCH AND DEVELOPMENT WORKING GROUP 14–15 (Nov. 2000) [hereinafter NIJ], available at <http://www.ncjrs.gov/pdffiles1/nij/183697.pdf>. These DNA fingerprints also exonerated a suspect in the case. *Id.* at 14.

22. *Id.* at 15.

23. HOWARD COLEMAN & ERIC SWENSON, DNA IN THE COURTROOM: A TRIAL WATCHER'S GUIDE 33 (Teresa Aulinkas & Dwight Holloway eds., 1994).

24. Henry T. Greely et al., *Family Ties: The Use of DNA Offender Databases to Catch Offenders' Kin*, 34 J.L. MED. & ETHICS 248, 250 (2006); Rick Weiss, *Vast DNA Bank Pits Policing vs. Privacy*, WASH. POST, June 3, 2006, at A1, A6 [hereinafter Weiss, *DNA Bank*] (describing DNA fingerprints as “like a Social Security number, but not assigned by the government”).

25. See Richard Willing, *Suspects Get Snared by a Relative's DNA*, USA TODAY, June 7, 2005, at A1 (“With the exception of identical twins, each person's DNA profile is believed to be unique.”).

26. JOHN M. BUTLER, FORENSIC DNA TYPING: BIOLOGY, TECHNOLOGY, AND GENETICS OF STR MARKERS 253 (2d ed. 2005); Maclin, *supra* note 7, at 166; see also Greely et al., *supra* note 24, at 250 (the number of copies of repeated sequences for each locus varies from seven alleles for the least variable loci to twenty-three for the most variable); NIJ, *supra* note 21, at 14–15 (noting that originally, genetic fingerprinting focused on variable number of tandem repeats or “VNTRs,” which are highly polymorphic DNA regions); *id.* at 1–2, 17–18 (explaining that STRs have smaller repeat segments than VNTRs but are more plentiful, so they provide the same discriminatory power, but with the possibility of doing DNA profiling with much smaller crime scene samples); *id.* at 3, 26–27 (explaining that although new loci are constantly being discovered, and though it is possible to search up to twenty loci, for financial and practical reasons these thirteen loci are likely to remain the standard for some time).

match.²⁷ If the DNA patterns or profiles do not match perfectly, the samples must have come from different sources. But if the profiles match at all thirteen loci, it is virtually certain that the samples originate from the same source.²⁸

Originally, DNA profiling was used to bolster cases against suspects by demonstrating that the sample collected from a crime scene matched the DNA profile of the suspect.²⁹ It was not long, however, before DNA fingerprinting was used “to facilitate suspicionless identification”³⁰ of the likely sources of the DNA samples when there were no suspects in the case.³¹ In order to achieve such “cold hits,” law enforcement needed a large pool of profiles — ideally from offenders of crimes involving DNA evidence — which could then be compared with DNA profiles from crime scene samples. As a result, the United States began to create DNA databases, which substantially broadened law enforcement’s capacity to find suspects in sexual and violent crimes.³²

Each state has its own DNA databank and defines its own “qualifying offenses” to determine who must provide genetic samples.³³ In addition, the FBI has created an index of DNA profiles from convicted criminals, crime scene samples, unidentified human remains, people “charged in an indictment or information with a crime,” and “samples voluntarily contributed from relatives of missing persons.”³⁴

27. DNA samples are collected from blood, saliva, or other tissues and fluids. D.H. Kaye, *The Constitutionality of DNA Sampling on Arrest*, 10 CORNELL J.L. & PUB. POL’Y 455, 461 (2001).

28. See, e.g., Greely et al., *supra* note 24, at 250.

29. Rothstein & Carnahan, *supra* note 20, at 127 (noting that U.S. courts quickly permitted expert testimony about the probability of matches between DNA profiles from crime scene samples and defendants’ DNA, so that “[w]ithin a mere decade of its first appearance in court, virtually every jurisdiction in the United States had held that DNA identification evidence was admissible”).

30. *Id.* at 128.

31. Robin Williams & Paul Johnson, *Inclusiveness, Effectiveness and Intrusiveness: Issues in the Developing Uses of DNA Profiling in Support of Criminal Investigations*, 34 J.L. MED. & ETHICS 234, 234 (2006). The earliest use of this approach was in Leicestershire where a serial rapist was identified based on DNA matches. Rothstein & Carnahan, *supra* note 20, at 127.

32. Kaye, *supra* note 27, at 461; see also Aaron P. Stevens, *Arresting Crime: Expanding the Scope of DNA Databases in America*, 79 TEX. L. REV. 921, 922 (2001) (“These databases are computerized systems that store genetic profiles developed from DNA samples, allowing law enforcement agencies to search for matches with unidentified samples recovered from crime scenes.”).

33. Greely et al., *supra* note 24, at 250; Maclin, *supra* note 7, at 166; DNA Initiative, *Advancing Criminal Justice Through DNA Technology*, <http://www.dna.gov/dna-databases/codis> [hereinafter CODIS] (last visited May 8, 2010); see also Stevens, *supra* note 32, at 922 & n.12 (listing the legislation authorizing criminal DNA databases in all fifty states).

34. See DNA Identification Act of 1994, 42 U.S.C. § 14132 (2006) (authorizing the Director of the FBI to establish an index of DNA identification records, including the above and samples “collected under applicable legal authorities, provided that DNA samples that

The databases from all fifty states and the federal data bank³⁵ are linked through the Combined DNA Index System (“CODIS”), which the FBI maintains.³⁶ CODIS allows the state and federal laboratories “to share and compare DNA data” and provides a “central database of the DNA profiles from all user laboratories.”³⁷ In short, CODIS provides a mechanism to link all of the DNA profiles created from the local, state, and federal crime labs.³⁸ This national database actually comprises two different indexes: the “Forensic Index,” which contains genetic profiles from crime scene samples, and the “Offender Index,” which contains genetic profiles from the pool of individuals compelled to provide genetic samples.³⁹ As of January 2010, the National DNA Index System contained over 300,000 forensic profiles and 7.8 million offender profiles.⁴⁰

Almost from the inception of DNA databases, legislatures have pushed to expand the reach of DNA profiling.⁴¹ The first state laws mandated the collection of DNA samples from sex offenders and a few other categories of violent felons⁴² under the theory that such offenders “are especially likely to leave DNA evidence at the crime

are voluntarily submitted solely for elimination purposes shall not be included in the National DNA Index System”).

35. Although the states may focus on any specific loci they choose for DNA identification, the FBI only accepts profiles from state databases that use the thirteen loci specified by CODIS. Greely et al., *supra* note 24, at 250–51 (noting that Mississippi is the only state that has not submitted genotypes that use the thirteen loci).

36. The U.K. has a similar databank that covers proportionately the greatest number of cases in the world. Erica Haimes, *Social and Ethical Issues in the Use of Familial Searching in Forensic Investigations*, 34 J.L. MED. & ETHICS 263, 264 (2006). As of 2006, the U.K. database had DNA profiles from more than 5.2% of its population, in contrast to the U.S. national database, which had profiles from only 0.5% of its population. Kimberly Wah, *A New Investigative Lead: Familial Searching as an Effective Crime-Fighting Tool*, 29 WHITTIER L. REV. 909, 918 (2008).

37. CODIS, *supra* note 33.

38. The profiles that end up in CODIS are first created locally through the Local DNA Index Systems (“LDIS”), then entered into the State DNA Index System (“SDIS”), and finally entered into the National DNA Index System (“NDIS”). Maclin, *supra* note 7, at 166 (noting that state and local agencies may “operate their databases according to their specific legislative or legal requirements”); Rothstein & Carnahan, *supra* note 20, at 128 (“After Congress appropriated funds to develop both a federal system run by the FBI and state systems, every state enacted the necessary enabling legislation to develop a linked system of DNA data banks.”); Wah, *supra* note 36, at 917.

39. Maclin, *supra* note 7, at 166; Greely et al., *supra* note 24, at 251; Wah, *supra* note 36, at 917.

40. Federal Bureau of Investigation, CODIS — NDIS Statistics, Measuring Success, <http://www.fbi.gov/hq/lab/codis/clickmap.htm> (last visited May 8, 2010).

41. See Gareth Cook, *Near Match of DNA Could Lead Police to More Suspects*, BOSTON GLOBE, May 12, 2006, at A1, A5.

42. Rothstein & Carnahan, *supra* note 20, at 128–29; Robert W. Schumacher II, Note, *Expanding New York’s DNA Database: The Future of Law Enforcement*, 26 FORDHAM URB. L.J. 1635, 1645 (1999); Ben Quarmby, *The Case for National DNA Identification Cards*, 2003 DUKE L. & TECH. REV. 0002, ¶ 5 (2003), <http://www.law.duke.edu/journals/dltr/articles/2003dltr0002.html>.

scene” and are often recidivists.⁴³ From that start, expansion was rapid. In just one year, Virginia, the first state to create a DNA database, expanded its pool of mandatory genetic profiles from “certain sex offenders and certain violent felons”⁴⁴ to include profiles from *all* (even nonviolent) felons.⁴⁵ Other states soon followed suit.⁴⁶ Over time, the expansion of database pools, or “mission creep,”⁴⁷ has broadened in many states to include nonviolent offenders,⁴⁸ misdemeanants,⁴⁹ juvenile offenders,⁵⁰ and even arrestees.⁵¹ Some have

43. Rothstein & Carnahan, *supra* note 20, at 128. *But see* RICHARD O. LEMPET ET AL., A MODERN APPROACH TO EVIDENCE 459 (3d ed. 2000) (noting that, despite popular opinion to the contrary, “rapists and child molesters do not have especially high rates of recidivism”).

44. Hibbert, *supra* note 7, at 774; *see also* Stevens, *supra* note 32, at 925.

45. Hibbert, *supra* note 7, at 774; Maclin, *supra* note 7, at 167.

46. Virtually all states include at least sex offenders and certain violent criminals in their databases. Wah, *supra* note 36, at 926. All but five states require all convicted felons to provide DNA samples to the state database. NAT’L CONFERENCE OF STATE LEGISLATURES, STATE LAWS ON DNA DATA BANKS QUALIFYING OFFENSES, OTHERS WHO MUST PROVIDE SAMPLE [hereinafter NCSL] (February 2009), <http://www.ncsl.org/programs/cj/dnadatabanks.htm>. Additionally, some states have enacted legislation extending their statutes of limitations in sexual assault cases to allow for introduction of DNA evidence. *See* Edward J. Imwinkelried, *The Relative Priority that Should Be Assigned to Trial Stage DNA Issues*, in DNA AND THE CRIMINAL JUSTICE SYSTEM 91, 94 (David Lazer ed., 2004). Imwinkelried also notes that, in states which have not enacted legislation to modify the statute of limitations, prosecutors have “attempted to toll the statute of limitations by filing criminal complaints identifying offenders by their DNA profile[s].” *Id.*

47. *See* NUFFIELD COUNCIL ON BIOETHICS, THE FORENSIC USE OF BIOINFORMATION: ETHICAL ISSUES 82 (2007) [hereinafter NUFFIELD]; Editorial, *Mission Creep in DNA Data Banks*, CHRISTIAN SCI. MONITOR, Apr. 23, 2008, at 8 [hereinafter *Mission Creep*]; *Public Consulted over DNA Fears*, BBC NEWS, Nov. 1, 2006, http://news.bbc.co.uk/2/hi/uk_news/6104876.stm; *see also* Christine Rosen, *Liberty, Privacy, and DNA Databases*, THE NEW ATLANTIS, Spring 2003, at 37.

48. Kevin Lothridge & Robin Wilson Jones, *Principles of Forensic DNA for Officers of the Court: An Interactive, Computer-Based Training Tool for Attorneys and Judges*, 54 DRAKE L. REV. 671, 672 (2006) (observing that “legislatures across the country continue to expand the scope of their DNA database statutes to include less violent crimes such as felony drug possession and misdemeanor fraud”); Rothstein & Carnahan, *supra* note 20, at 128 (noting that “[i]n many cases, the crimes bore little relationship to the initial justifications”); *id.* at 128 n.10 (describing some of the expanded categories of offenses, including illegal possession of food stamps, false swearing, and blackmail); Stevens, *supra* note 32, at 943 (observing that the “national trend” has been to expand “the scope of the databases to include more individuals”).

49. Quarmby, *supra* note 42, at ¶ 5; Weiss, *DNA Bank*, *supra* note 24, at A6 (noting that at least thirty-eight states now have laws to collect DNA from people found guilty of misdemeanors such as shoplifting and fortune-telling).

50. Hibbert, *supra* note 7, at 774–75. Thirty-five states require some juvenile offenders to submit DNA samples to the state. NCSL, *supra* note 46; Mark A. Rothstein & Meghan K. Talbot, *The Expanding Use of DNA in Law Enforcement: What Role for Privacy?*, 34 J.L. MED. & ETHICS 153, 153 (2006).

51. D. H. Kaye & Michael E. Smith, *DNA Identification Databases: Legality, Legitimacy, and the Case for Population-Wide Coverage*, 2003 WIS. L. REV. 413, 430 (2003) (suggesting that “DNA collection during custodial arrests is explicitly authorized in a few states”); Jacqueline K. S. Lew, *The Next Step in DNA Databank Expansion? The Constitutionality of DNA Sampling of Former Arrestees*, 57 HASTINGS L.J. 199, 210 (2005); Rothstein & Talbot, *supra* note 50, at 153–54. Eighteen states collect DNA samples from individuals arrested for various offenses (with differing degrees of safeguards). Osagie K.

even argued for creating data banks that encompass the entire population, innocent and guilty alike.⁵²

B. Familial Searches

Familial searches represent a different kind of mission creep.⁵³ The technique that is most commonly understood to be familial searching⁵⁴ does not increase the pool of DNA samples and profiles for law enforcement to search. Instead, it “stretch[es] the reach of these databases far beyond the individuals profiled in them” to include close biological relatives.⁵⁵ In short, familial searches use the DNA databases to locate possible relatives who might be perpetrators of the crime. This expansion has far-reaching implications because it effectively includes individuals based on genetic association, rather than suspicion or even conviction of crimes.⁵⁶

The technique of familial searching applies modern computer technology⁵⁷ to the principle that, because DNA is inherited, we share more of our genetic material with biological relatives than with oth-

Obasogie, *A DNA Dilemma*, L.A. TIMES, Apr. 9, 2010, at A25; NCSL, *supra* note 46 (noting that, as of June 2008, 15 states had enacted legislation requiring the collection of DNA from arrestees). And the federal government also allows the genetic profiles of arrestees to be placed in the national data bank. Jessica D. Gabel, *Probably Cause from Probable Bonds: A Genetic Tattle Tale Based on Familial DNA*, 21 HASTINGS WOMEN'S L.J. 3, 15 (Winter 2010). President Obama has even recently called for arrestees to have their DNA collected and stored in the national database. Obasogie, *supra*, at A25. In 2008, the Maryland legislature authorized expansion of its database by allowing the state to obtain samples not only after conviction but also from suspects charged with crimes of violence, attempted crimes of violence, burglary, or attempted burglary. See MD. CODE ANN., PUB. SAFETY § 2-504(a)(3)(i) (West 2008). England led the charge with this kind of expansion. Duncan Carling, Note, *Less Privacy Please, We're British: Investigating Crime with DNA in the U.K. and the U.S.*, 31 HASTINGS INT'L & COMP. L. REV. 487, 495 (2008) (noting that arrestee sampling is “an accepted and widespread practice in the U.K.”); Frederick R. Bieber & David Lazer, *Guilt by Association*, NEW SCIENTIST, Oct. 23, 2004, at 20 (noting that the U.K. “became the first country to permit the DNA profile of anyone arrested to be kept indefinitely, regardless of whether they are subsequently convicted”).

52. Weiss, *DNA Bank*, *supra* note 24, at A1 (explaining that “some in law enforcement are calling for a national registry of every American’s DNA profile, against which police could instantly compare crime-scene specimens”); Rosen, *supra* note 47; see also David H. Kaye et al., *Is a DNA Identification Database in Your Future?*, CRIM. JUST., Fall 2001, at 4.

53. Tania Simoncelli & Barry Steinhardt, *California’s Proposition 69: A Dangerous Precedent for Criminal DNA Databases*, 33 J.L. MED. & ETHICS 279, 282–84 (2005) (describing familial searching as part of the “function creep” of DNA databases).

54. As I discuss below, there is another form of DNA searching that can also be described as familial searching. See *infra* Part III.A.3.

55. Bieber & Lazer, *supra* note 51, at 20.

56. *Id.*

57. Greely et al., *supra* note 24, at 251; Suzanne Smalley, *A Man Wrongly Accused Becomes a Symbol of Hope*, BOSTON GLOBE, May 12, 2006, at A5 (“Familial searching is based on the power of modern computer databases and on genetic principles that are as old as the human species.”); Willing, *supra* note 25.

ers.⁵⁸ In a typical DNA search, only a complete or perfect match — one matching at all thirteen loci — between an individual’s DNA and that of a crime scene sample indicates that the individual was the source of the crime scene sample.⁵⁹ A “partial match” or “near miss”⁶⁰ — for example, sixteen out of twenty-six alleles (two at each locus)⁶¹ — suggests that a close biological relative of the individual whose DNA partially matches the crime scene sample might have been the source.⁶² Of course, a close match might also occur randomly because “unrelated people can have some of the same genetic markers.”⁶³ “Usually, a partial match by itself will not be overwhelming evidence that the person who left the crime scene DNA *is* a relative of the person in the Offender Index who provided a partial match.”⁶⁴ How strong or weak the lead is likely to be, however, can be estimated. The closer the match, or the lower the frequency of the

58. Each parent passes on half of his/her genes to each child, and therefore parent and child share 50% of the same genetic material. Siblings could theoretically inherit all or none of the same genes from their parents, but on average they will share 50% of their genes. See generally Bieber & Lazer, *supra* note 51.

59. Carl T. Hall, *Experts Suggest Expanding DNA Database; Adding Relatives Could Point to Suspects, They Say*, SAN FRANCISCO CHRONICLE, May 12, 2006, at B9. Presumably the lack of a match in a search of the national database indicates that the perpetrator of the crime was never convicted of a crime for which DNA samples are required. *Id.* (“Kinship analysis of DNA would help in cases where a sample was found at a crime scene, but produced no direct match with a suspect, presumably because the person being sought was a novice criminal or someone whose DNA had never been put on file.”).

60. David Lazer & Michelle N. Meyer, *DNA and the Criminal Justice System: Consensus and Debate*, in DNA AND THE CRIMINAL JUSTICE SYSTEM 371, 374 (David Lazer ed., 2004); Daniel J. Grimm, Note, *The Demographics of Genetic Surveillance: Familial DNA Testing and the Hispanic Community*, 107 COLUM. L. REV. 1164, 1170 (2007) (“A ‘partial match’ under the CODIS standards exists where thirteen of twenty-six alleles are common at the thirteen ‘core’ CODIS loci.”).

61. Willing, *supra* note 25 (noting that in one case in North Carolina, the suspect’s “DNA matched the crime scene sample left by his brother at 16 alleles”).

62. Greely et al., *supra* note 24, at 251; David R. Paoletti et al., *Assessing the Implications for Close Relatives in the Event of Similar but Nonmatching DNA Profiles*, 46 JURIMETRICS J. 161, 162 (2006); Richard Weiss, *DNA of Criminals’ Kin Cited in Solving Cases*, WASH. POST, May 12, 2006, at A10. DNA searches can be done at different levels of stringency. High stringency searches will only pull up complete matches. But moderate or low stringency searches may identify incomplete matches. Erin Murphy, *Relative Doubt: Familial Searches of DNA Databases 5–6* (Nov. 2, 2009) (unpublished manuscript), available at <http://ssrn.com/Abstract=1498807>.

63. Willing, *supra* note 25 (describing a 1999 U.K. case in which law enforcement found a twelve-allele match but later discovered the convict was in jail when the crime was committed); see also Cook, *supra* note 41, at A5 (“Relatives usually share more DNA than strangers do, but not always. So investigators would have to check out false positives — people who have nothing to do with the suspect, but whose DNA looks similar to the crime scene DNA by chance — consuming time and invading the privacy of innocent people.”).

64. Greely et al., *supra* note 24, at 253; see also Dr. Thomas Callaghan, FBI, Presentation at the Genetic Privacy, DNA Databasing & Familial Searching Symposium (Mar. 17 2008) (noting that “the probability is low that a ‘partial match’ is due to a familial relationship”).

matched alleles in the general population,⁶⁵ the more likely that the samples come from a biological relative,⁶⁶ although we do not know which one.

Mark Rothstein and Meghan Talbott describe another form of familial searching: indirect familial searches. If a search of the DNA database yields no full or partial matches to the crime scene DNA, the suspect refuses to provide a DNA sample voluntarily, and the police cannot obtain a court order for lack of probable cause, the police might attempt to obtain the suspect's DNA indirectly by analyzing DNA from his family members. For example, the police might obtain the discarded tissue or chewing gum of the suspect's son as he walks home from school or the discarded napkin of the suspect's mother after she finishes her meal in a nursing home. Law enforcement could analyze Y chromosome markers (inherited by sons from their fathers) or mitochondrial DNA markers (inherited from one's mother) in DNA obtained from the discarded materials and compare them with markers from the crime scene sample to determine whether there is a match.⁶⁷ The most publicized example of this form of familial searching involved the case of the BTK ("Bind Torture Kill") killer. Police ultimately linked the DNA of Dennis Rader, who was under suspicion, to the BTK's crime scenes by collecting and analyzing DNA from his daughter.⁶⁸ Of course, the police would presumably prefer the more direct route of obtaining the suspect's DNA directly through similar surreptitious means, for example, by analyzing DNA from material that the suspect discarded or abandoned.⁶⁹ Since this use of familial DNA is not commonly what is meant by the term "familial searching," I use the term to refer to the use of partial matches to investigate families, unless indicated otherwise.

While familial searches will not always be useful, law enforcement finds them particularly helpful when investigations are going

65. Greely et al., *supra* note 24, at 253 (adding that algorithms could be created to look for parent-child and sibling-sibling matches). Additional testing can further refine the estimates. *See infra* Part V.B.1.

66. Whether a close match is the result of a genetic family relationship "depends both on the nature of the postulated relationship and the rarity of the genotype (set of alleles) involved." Greely et al., *supra* note 24, at 251. The chance of "an unrelated individual randomly matching" those alleles ranges from just under one percent to one in ten trillion quadrillion (10^{28}). *Id.* at 252. The patterns of matches also vary depending on the nature of the biological relationships. Children must match at least thirteen alleles with each parent (since they inherit half of their genetic material from each parent), and will usually match at fourteen to sixteen alleles. *Id.* at 252. In contrast, siblings theoretically can share as few as zero and as many as twenty-six alleles, with an average of 16.7. *Id.* at 253.

67. Rothstein & Talbott, *supra* note 50, at 156.

68. Gabel, *supra* note 51, at 4 (noting that the police used a search warrant to get access to the daughter's DNA).

69. *See infra* text accompanying notes 94–96 (describing the police's collection of a discarded cigarette butt to obtain the DNA of a suspect surreptitiously).

nowhere.⁷⁰ Many believe that familial searches “could substantially improve the odds” of finding a perfect match.⁷¹ Studies suggesting that not only DNA but also crime can run in families emphasize the power of this technology.⁷² For example, one study showed that thirty percent of inmates had brothers who were also incarcerated,⁷³ and another found that “nearly half of jail inmates had at least one close relative who had been incarcerated.”⁷⁴ Based on these statistics, some in law enforcement believe that searching for close relatives of offenders (or arrestees) whose DNA is already in the national database would be a fruitful expansion of DNA profiling.⁷⁵ One estimate projected that familial searching “could effectively double or triple the size of the databases without adding new samples.”⁷⁶ In addition, a computer-simulation suggested that based on “conservative assumptions,” following up on searches that generated “near misses” could significantly increase the “cold hit” rate in the United States.⁷⁷ Estimates of the usefulness of familial searches depend, however, on how widely the net is cast in searching for biological relatives. If investigators use relatively high stringency searches that identify only close matches, law enforcement may get fewer cold hits, but a higher rate of accuracy. In other words, the odds of the matches identifying a relative are greater, but the search may also miss relatives who could be the source of the crime sample.⁷⁸ If, however, the match criteria are less stringent, the searches will yield more partial matches, with the chance of false leads increasing significantly.⁷⁹ It may prove difficult to establish the right balance between doing searches that cast a wide

70. Hall, *supra* note 59 (quoting Frederick Bieber, who noted that familial searches can “help as a last resort in a few of the most difficult cases” and that it would be irresponsible not to try).

71. *Id.*

72. Weiss, *supra* note 62; see also Paul Cheston & Rebecca Mowling, *M3 Brick Killer Trapped by DNA Link in Family*, EVENING STANDARD, April 19, 2004, at C5 (suggesting that family searches are “based on the principle that DNA is inherited, criminality runs in the family, and families involved in crime are less likely to move away from the area where they are born”). As law enforcement agencies now say, “[D]on’t do the crime if your brother’s doing time.” Schorn, *supra* note 1.

73. Cook, *supra* note 41, at A5.

74. Hall, *supra* note 59.

75. Weiss, *supra* note 62 (describing how the calculus of familial searches is based on “well-established facts — such as the prevalence of certain DNA variants in the population — and less precise assumptions, such as the odds that a criminal has a close family member whose DNA is already on file”).

76. Willing, *supra* note 25.

77. Weiss, *supra* note 62 (assuming that familial searches could increase cold-hit rates from 10 to 14 percent).

78. Murphy, *supra* note 62, at 8.

79. Hall, *supra* note 59 (“Odds of false leads increase with less stringent search criteria — that is, the more incomplete the match, the greater the odds it occurred merely by chance.”). Murphy, *supra* note 62, at 6 (observing that a sufficiently low stringency search makes it “80 to 90 percent likely that a partial match will include the relatives in its results” as well as many who are not related to the source).

enough net to identify likely relatives, but not so wide that the number of leads becomes unmanageable.⁸⁰

1. Success Stories

Although relatively new, familial searching has been successful in a number of noteworthy cases. The technology was first used in the United Kingdom in 2002⁸¹ to solve a reopened case involving the rape and murder of three girls in Cardiff, Wales that occurred in 1973.⁸² A search of the national database located a partial match, Paul Kappen. A previous intelligence-led screen had targeted 500 suspects, including Joseph Kappen, Paul Kappen's deceased father.⁸³ After discovering the partial match, police obtained a DNA sample of Joseph's exhumed body, which fully matched the crime scene samples.⁸⁴

A year later, the technique was used in Cardiff, Wales to solve the 1988 murder of a prostitute that had long confounded police. None of the profiles in the U.K. database matched that of the crime scene sample.⁸⁵ A familial search, however, identified a profile that shared an unusual genetic marker with the evidence sample. The source of this sample was a 14-year-old boy who had not been born when the murder occurred.⁸⁶ Police tracked down his uncle, Jeffrey Gafoor, who confessed to killing the prostitute.⁸⁷

80. Murphy, *supra* note 62, at 47 (suggesting that “a minimum threshold of around 18 alleles dramatically diminishes the likelihood of false leads, while also still generating a 25% probability that a true lead in the database will be identified”).

81. Williams & Johnson, *supra* note 31, at 243. Great Britain has been the clear leader in the use and development of familial searches. *Id.* at 235 (“The NDNAD, established in April 1995, was the first national forensic DNA collection and presently remains the biggest such archive both in terms of its actual size and the proportion of the national population held on it.”); *see also* Willing, *supra* note 25. Its role as leader in this area is not surprising given that its “DNA database is older and [proportionately] larger than the U.S. system.” *Id.* And whereas the United States database system is governed by a complex mix of state and federal law, “Britain has few rules restricting its use,” and the Forensic Science Service (“FSS”) is “largely self-regulated”. *Id.* “In Britain, where rules governing the use of DNA for fighting crime are more permissive than in most U.S. states, the approach has been used dozens of times and has helped solve several cases.” Weiss, *supra* note 62. In addition, the “FSS charges British police for its services; [a system] that creates a profit motive to develop new uses for the national database.” Willing, *supra* note 25.

82. Steve Bird, *M3 Brick Killer Tracked Through a Relative's DNA*, *TIMES* (London), April 20, 2004, at 11; Karen McVeigh & Hugh Muir, *Torso Investigation: Laying Adam to Rest: Science Offers Hope in Ritual Murder Case: New DNA Techniques Developed in Hunting for Dead Boy's Birthplace Have Helped Detectives Solve Other Crimes*, *GUARDIAN*, Feb. 19, 2007, at 12.

83. Williams & Johnson, *supra* note 31, at 243.

84. Willing, *supra* note 25.

85. Bieber & Lazer, *supra* note 51.

86. Wah, *supra* note 36, at 909–10.

87. Williams & Johnson, *supra* note 31, at 243; *see also* Bird, *supra* note 82 (noting that as a result of this evidence, “[t]hree men who had been jailed for [the] murder were released by the Court of Appeal in 1992 and their convictions later quashed”); Willing, *supra* note 25.

Although DNA evidence primarily has been used to solve violent crimes like rape and murder,⁸⁸ one of the most publicized uses of familial searching demonstrated its capacity to solve a broader range of crimes. In 2004, a man with no prior record dropped a brick from an overpass in “one of those drunken stupid moments.”⁸⁹ The brick crashed through a truck’s windshield and hit the driver, causing him to have a fatal heart attack.⁹⁰ In their investigation, police used a sample of blood that they found on the brick, which had come from a cut on the perpetrator’s hand. After finding no match in the national database or from DNA samples collected voluntarily from 350 local men, a search focusing on the local area yielded twenty-five partial matches.⁹¹ Police interviewed the individual with the single closest match — sixteen out of twenty loci — which led them to a close relative, Craig Harman.⁹² Harman’s DNA perfectly matched twenty out of twenty loci.⁹³

While the United States has used familial searches far less frequently than the United Kingdom, the technique has proven successful in a few instances. Most famously, in 2003, it helped solve the 1984 rape and murder of a Winston-Salem newspaper editor. Although none of the profiles in North Carolina’s database matched the crime scene sample, the profile of a convicted felon, Anthony Denard Brown, was a very close match. During an interview with one of Brown’s eleven brothers, Willard Brown, police offered him a cigarette, which they rushed to the crime lab as soon as the interview ended.⁹⁴ Willard’s DNA was a perfect match, which led to his confession and conviction.⁹⁵ The familial search not only located the perpetrator, but also resulted in the exoneration of Darryl Hunt, who had been incarcerated for eighteen years for the same rape and murder.⁹⁶

88. This technique has been used in a limited number of high-profile cases, most of which have involved murder. Haimes, *supra* note 36, at 264.

89. Bird, *supra* note 82; Williams & Johnson, *supra* note 31, at 243 (noting that this was the first case in which familial searching led “to a successful criminal prosecution in a current police case”); Mike Sullivan, *M-Way Brick Killer Trapped by His DNA*, THE SUN, Apr. 20, 2004, at 12.

90. Greely et al., *supra* note 24, at 248; Cheston & Mowling, *supra* note 72 (noting that the driver managed to steer the truck to the side of the road, “averting a pileup [that] would have caused many more deaths”); Alexandra Williams, *Brick Killer Trapped by His Relative’s DNA*, THE MIRROR, Apr. 20, 2004, at 13.

91. A search within the national database looking at eleven matches out of twenty markers pulled up too many profiles, so the police limited their search to the surrounding area of the crime scene and found “about twenty-five partial matches.” Greely et al., *supra* note 24, at 248.

92. *Id.*

93. Bird, *supra* note 82 (noting that “the chance that the DNA found on the brick was not [Harman’s] was said to be one in a billion”); see also Williams, *supra* note 90.

94. Six of the brothers were deceased. Willard Brown lived nearby and had a misdemeanor parole violation. Shorn, *supra* note 1.

95. Willing, *supra* note 25.

96. *Id.*

Despite these success stories, it remains to be seen exactly how frequently familial searches are successful. Proponents tout its powers, but there are skeptics.⁹⁷ Moreover, there are many unanswered questions about the details and aftermath of such searches: what happens after the searches, how did investigators rule out targeted relatives, and how many people were questioned and investigated?⁹⁸

2. Moving Toward Systematic Familial Searches

The FBI would not describe all of these success stories as true familial searching. It defines familial searches narrowly as “a second deliberate search . . . to identify close biological relatives of the perpetrator in the known offender database,” used only after an initial search of the database turns up no candidate matches.⁹⁹ This definition, however, is unnecessarily narrow. As demonstrated by the Darryl Hunt case, the discovery of partial matches suggestive of familial links can occur inadvertently, when a sweep of the national database reveals a very close, but imperfect match. Whether intentional or not, the effects of familial searching are much the same if investigators follow up on partial matches or proceed deliberately, although the reach of familial searching is narrower in the former instance.

What can make a difference is whether jurisdictions adopt systematic and therefore potentially more widespread familial searching. The United Kingdom has been far less reluctant than the United States to move in that direction.¹⁰⁰ In 2003, the U.K. authorized the systematic and deliberate use of familial searches, giving police authority to search the national database for “names and descriptions of those whose DNA profiles are close” if no exact matches could be found.¹⁰¹ Given the expense, however, familial searches are not used for all crimes in the U.K., although they are routinely done for the most serious crimes and at the request of investigating officers.¹⁰² Police in the U.K. used this technique roughly twenty times from 2002–2004, achieving a 25% success rate.¹⁰³ By April of 2005, “familial searching

97. Murphy, *supra* note 62, at 2 (noting that “often lost in recitations of [one of the proponents of familial searching] is one revealing fact: his ‘familial searches’ did not work”); *id.* at 10 (noting the “conflicting reports on its rate of success”); *id.* at 36 (suggesting even in jurisdictions with “aggressive polices,” they have only reported “moderate actual success”).

98. *Id.* at 4.

99. Callaghan, *supra* note 64.

100. New Zealand has also “actively engage[d in] familial search methods . . . [and] other countries have similarly expressed an interest in pursuing the technique.” Murphy, *supra* note 62, at 10.

101. Willing, *supra* note 25.

102. Ben Mitchell, *Police Warning to Criminals Over DNA Breakthrough*, PRESS ASS’N, Nov. 19, 2004.

103. Williams & Johnson, *supra* note 31, at 243. Among the successes was the identification of their first sexual offender using this technique. Mitchell, *supra* note 102. Using this technique police were able to solve a case concerning two “indecent assaults” committed in

in Britain had solved nine cases by finding close relatives of killers or rapists whose DNA profiles [were] in the national database.”¹⁰⁴ Because the search for partial matches can yield thousands of names, the Forensic Science Service gives police “the physical description and home address of a near-match for comparison with potential suspects. If the crime scene sample carries an allele that is common among people from a certain region — say, South Wales — investigators are given the names of near-matches from that locality.”¹⁰⁵

In contrast to familial searches in England, which are conducted deliberately with well-established procedures,¹⁰⁶ familial searches in the United States have been conducted only in a handful of cases¹⁰⁷ and are more likely to come about inadvertently “when the definition of a ‘match’ is loosened enough to net someone’s kin.”¹⁰⁸ In some jurisdictions, law enforcement or government laboratories have been reluctant to pursue familial searches until they receive explicit guidance and approval from the courts or legislatures.¹⁰⁹ At this point, familial searches are not done at the national level.¹¹⁰ Initially, the FBI NDIS Procedures prohibited “the release of the offender’s personally identifiable information” when a partial match was found.¹¹¹ In 2006, however, the FBI issued an “interim plan” that might permit the release of such information in “situations in which there is no other

1992 and 1997. Although semen samples were obtained, the case was closed when no matches could be made to any convicted offenders. In 2004, using familial searches, law enforcement found a partial match with a sample from a man who had been arrested for “a minor criminal offence.” After looking for close relatives who matched the description of the assailant, police arrested Daniel Alderson, whose DNA matched the crime scene samples. *Id.* “After initially denying the offences, he pleaded guilty at Portsmouth Crown Court on September 23 to two offences of indecent assault, one against a female aged over 18 and one under 18.” *Id.*

104. Willing, *supra* note 25 (describing among the successes “a rapist with a distinct North of England accent who was traced through a brother on the database. Both carried alleles common to England’s north country.”).

105. Willing, *supra* note 25.

106. Not all aspects of familial searching procedures are publicly available. *See infra* notes 116–18 and accompanying text.

107. Cook, *supra* note 41, at A5 (noting that the FBI does not pursue partial matches).

108. Hall, *supra* note 59 (describing such testing in the United States as not “routinely done by most police agencies”, and quoting Bill Hagmeir, executive director of the International Homicide Investigators Association in Virginia: “I haven’t heard of anyone going fishing through family trees”); *see also supra* note 62 and text accompanying notes 78–79.

109. Cook, *supra* note 41, at A5 (describing one crime lab’s frustration in finding evidence suggesting that a rapist “must be the brother of a near match” but deciding not to pass on the name to investigators because there was no policy regarding familial searches in Virginia).

110. The FBI has avoided using this technique until “legal, social and other issues are resolved,” Cook, *supra* note 41, at A5, and because of concerns that federal privacy laws prohibit such searches, Willing, *supra* note 25. However, the FBI has begun a national discussion of the issue. Callaghan, *supra* note 64, at slide 64. Because no intentional familial searching is performed, partial matches are “fortuitous events.” *Id.*

111. Bulletin, FBI, Interim Plan for the Release of Information in the Event of a “Partial Match” at NDIS (July 20, 2006), available at http://www.ndaa.org/publications/newsletters/codis_bulletin_2006.pdf.

available investigative information.”¹¹² Eventually, the FBI allowed individual states to decide whether they wish to provide “the names of people whose DNA partially matches that found on evidence at a crime scene.”¹¹³ In part, the FBI was reluctant to begin doing familial searches without Congressional consent for fear that the “political and legal backlash over privacy and civil liberties . . . would imperil the federal government’s recent decision to begin storing DNA samples not merely from convicted felons but from anyone who is arrested.”¹¹⁴

When familial searches do occur in the U.S., they usually do so “informally at the local level.”¹¹⁵ One study found a “startling lack of transparency in rulemaking” regarding familial searching.¹¹⁶ Of thirty-two states that responded to requests regarding their family searching policies or practices, at least twelve have no written policy.¹¹⁷ Of those states that do have written policies, only two make them easily accessible: Maryland enacted legislation explicitly prohibiting familial searches¹¹⁸ and California’s state attorney general issued a well-publicized memorandum that authorizes the reporting of inadvertently detected partial matches as well as deliberate searches for partial matches “under limited circumstances.”¹¹⁹

The lack of a written policy, however, does not mean that investigators do not report partial matches. “[A]t least four states without written policies have nonetheless reported partial match information to investigators in the past.”¹²⁰ And six states prohibit intentional familial searching, while remaining vague about whether labs may report inadvertently discovered partial matches.¹²¹ At least fifteen states permit the reporting of inadvertently discovered partial matches.¹²² How and when chance discoveries of close matches are pursued varies considerably.¹²³ As noted, California’s crime lab reports partial

112. *Id.*

113. Wah, *supra* note 36, at 924.

114. Jeffrey Rosen, *Genetic Surveillance for All*, SLATE, Mar. 17, 2009, <http://www.slate.com/id/2213958/>.

115. Bieber & Lazer, *supra* note 51; see also Natalie Ram, *DNA Confidential*, SCIENCE PROGRESS, Oct. 2009, http://www.scienceprogress.org/wp-content/uploads/2009/10/dna_matching.pdf (noting that most states “have refrained from prescribing rules governing partial match reporting or familial searching in statute, regulation, or well-publicized memoranda”).

116. Ram, *supra* note 115 (finding that “a not insignificant amount of policymaking surrounding identification of possible family relationships in state forensic DNA databases occurs in a fashion that is nearly impenetrable to public oversight”).

117. *Id.* Sometimes the lack of a written policy is quite deliberate. *Id.*

118. *Id.*; Ellen Nakashima, *DNA Tool to Solve Crimes Can Entangle Suspects’ Kin*, WASH. POST, Apr. 21, 2008.

119. Ram, *supra* note 115.

120. *Id.*

121. *Id.*

122. *Id.*

123. Paoletti et al., *supra* note 62, at 163 (“Policies regarding familial searches within the United States range from not allowing them at all . . . to specifically encouraging them”).

matches if they “‘appear useful’ to law enforcement.”¹²⁴ Virginia’s crime labs may report a possible familial link if the near matches are “very, very close,”¹²⁵ and Florida’s crime labs may report the names of convicted offenders whose DNA matches twenty-one out of twenty-six alleles.¹²⁶ Florida takes the principle of genetic relatedness a step further, essentially performing indirect familial searches:¹²⁷ it allows labs to identify rapists by searching their state database for close matches between children born to rape victims and DNA profiles of convicted offenders.¹²⁸

Until recently, there have been no systematic efforts to conduct deliberate familial searches in the United States.¹²⁹ With the noteworthy success stories, however, interest in the systematic use of familial searches has been growing in the United States.¹³⁰ In 2008, Denver, Colorado conducted the first large-scale test “of familial searching software on a DNA database, using the county’s databank of 1,700 profiles.”¹³¹ In addition, California, New York, and Nebraska all permit deliberate familial searches;¹³² California was the first.¹³³ This trend demands a careful discussion of the implications of further expansions of DNA profiling, including privacy considerations.

III. PRIVACY AND CIVIL LIBERTY CONCERNS

In spite of the promise of familial searching, this technique raises several privacy concerns. Some are related generally to maintaining DNA databanks, which have inspired a lengthy debate about the constitutional and privacy implications of collecting and retaining genetic

124. Willing, *supra* note 25.

125. *Id.*

126. *Id.* (The rationale is that a match of twenty-one out of twenty-six alleles “almost always” indicates that the convicted felon and the perpetrator are brothers.)

127. See *supra* text accompanying notes 67–69.

128. Willing, *supra* note 25.

129. See Cook, *supra* note 41, at A5, for a description of how the state crime lab in Virginia does not do familial searches, but sometimes inadvertently “comes across very close matches.”

130. See, e.g., Hall, *supra* note 59 (describing a *Science* article that suggested that “widespread kinship analysis” of DNA profiles “would represent a critical shift in the use of government forensic data banks’ to focus on families, rather than individuals”); Bieber & Lazer, *supra* note 51 (noting that success in “the UK, New Zealand and North America, has led law enforcers to trumpet familial searching as an important new tool for investigating crimes”).

131. Nakashima, *supra* note 118 (noting that the databank included profiles from suspects as well as from “lab employees and people who allowed their DNA to be taken to eliminate them as suspects”).

132. Natalie Ram, *Interactive Map: State Policies for DNA Crime Databases Vary Widely*, SCIENCE PROGRESS, Nov. 2, 2009, <http://www.scienceprogress.org/2009/11/map-state-dna-policies/>.

133. Nakashima, *supra* note 118 (noting that Massachusetts is planning to develop one as well).

samples from a select group of individuals.¹³⁴ Some are related to the issues surrounding the expansion of DNA databases to include samples from arrestees, who have not yet been, and may never be, convicted.¹³⁵ Finally, familial searching itself raises additional privacy challenges and civil liberty concerns.

Familial searches pose privacy concerns with respect to three different entities: (1) the source of the genetic sample in the databank — the “genetic informant” or “pivot” person¹³⁶ — whose close match to the crime scene evidence leads police to investigate family members, (2) the relatives whom the police investigate and from whom they may try to obtain samples, and (3) the family unit as a whole. Each concern presents reasons to be wary of proceeding too readily with familial searches. At a minimum, these reasons suggest that, if familial searches are to be done at all, they must be performed with safeguards that would minimize the threats to the privacy interests of each of these groups.

Despite the various privacy and civil liberty concerns raised by DNA profiling and familial searches, these concerns are not necessarily greater or more threatening than those raised by other forms of police surveillance or searches.¹³⁷ Law enforcement investigations may also result in collateral harms by uncovering highly personal information about a suspect or a suspect’s family and friends in the pursuit of information relevant to a crime.¹³⁸ The Fourth Amendment exists precisely to protect the privacy and dignitary interests of all individuals by setting limits on the scope and kinds of searches that may be conducted in criminal investigations,¹³⁹ but those protections are not unlimited. For example, searches of a suspect may threaten the privacy of others not targeted in an investigation, which courts have sometimes protected¹⁴⁰ and other times overridden.¹⁴¹

134. There have been roughly 140 cases reported at the state and federal level, including opinions from courts in thirty-six states and the District of Columbia and ten Federal Circuit Courts of Appeal, which address the constitutionality of DNA databases. Callaghan, *supra* note 64.

135. See Lew, *supra* note 51, at 210 (“A debate is emerging among legal scholars regarding whether this trend towards expanding DNA databases to include more classes of individuals comports with constitutional requirements.”).

136. Haimes, *supra* note 36, at 269.

137. See Rothstein & Talbot, *supra* note 50, at 160–61.

138. Additional collateral harms may arise in the context of post-conviction DNA testing and the manner in which victims should be informed that the case is being reopened. See generally Edward J. Imwinkelried, *supra* note 46, at 94.

139. “The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.” U.S. CONST. amend. IV.

140. See, e.g., *Georgia v. Randolph*, 547 U.S. 103, 114–15 (2006) (“[I]n the balancing of competing individual and governmental interests entailed by the bar to unreasonable searches, the cooperative occupant’s invitation adds nothing to the government’s side to

The first issue to consider in determining whether and when familial searching is appropriate is the risk that the technique poses. The final analysis, as we shall see in Part V, requires us to examine whether there are instances in which the values in favor of familial searching outweigh those against it, and whether there are safeguards and limits that we might use to guard against its risks.

A. Privacy Interests of the “Genetic Informant”

The individual whose sample is a partial match with the crime scene sample, and therefore leads law enforcement to family members, has a number of privacy interests that are affected by familial searches. Some of these privacy interests are affected by the creation of compulsory DNA data banks, which are then magnified by familial searching. Others are unique to familial searching. I shall address each in turn.

1. DNA Profiling Generally

Since the inception of DNA data banks, courts and commentators have discussed the privacy interests of the offenders whose DNA samples are involuntarily collected and analyzed. Virtually all of the challenged DNA databanking statutes have survived claims that they violate the Fourth Amendment’s prohibition against unreasonable searches and seizures.¹⁴² Courts have relied on two approaches — the special needs test¹⁴³ and the totality of the circumstances test¹⁴⁴ — to

counter the force of an objecting individual’s claim to security against the government’s intrusion into his dwelling place.” (citing *Camara v. Municipal Court of San Francisco*, 387 U.S. 523, 536–37 (1967)); *Steagald v. United States*, 451 U.S. 204, 213–14 (1981) (upholding the privacy interests of persons not suspected of a crime); *United States v. Di Re*, 332 U.S. 581, 587 (1948) (“[A] person, by mere presence in a suspected car, [does not lose] immunities from search of his person to which he would otherwise be entitled.”); *United States v. Comprehensive Drug Testing, Inc.*, 579 F.3d 989, 998–1001 (9th Cir. 2009) (noting the collateral harms to the individuals whose records were not within the scope of the warrant and devising a new test for government searches of electronically stored information to minimize this collateral harm).

141. *See, e.g.*, *Maryland v. Pringle*, 540 U.S. 366, 370 (2003) (finding that probable cause existed to arrest a passenger in the front seat of a car when bags of cocaine were found wedged between the backseat and the armrest); *Zurcher v. Stanford Daily*, 436 U.S. 547, 559–60 (1978) (declining to protect a third-party newspaper from a search regarding a crime in which the paper was not involved but had photographic evidence in its possession).

142. *Hibbert*, *supra* note 7, at 774–75; *Carling*, *supra* note 51, at 498; *Grimm*, *supra* note 60, at 1188. Ordinarily, a governmental search violates the Fourth Amendment if it is not authorized by a judicial warrant or based on individualized probable cause. *Skinner v. Ry. Labor Executives’ Ass’n*, 489 U.S. 602, 619 (1989) (“Except in certain well-defined circumstances, a search or seizure . . . is not reasonable unless it is accomplished pursuant to a judicial warrant issued upon probable cause.”).

143. *See, e.g.*, *United States v. Amerson*, 483 F.3d 73 (2d Cir. 2007); *United States v. Hook*, 471 F.3d 766 (7th Cir. 2006); *Roe v. Marcotte*, 193 F.3d 72, 79–82 (2d Cir. 1999). The Supreme Court has recognized a special needs exception that allows governmental

conclude that compulsory collection of DNA samples does not violate the Fourth Amendment, even though it may constitute a suspicionless search and seizure.¹⁴⁵ The rationales differ to some extent, but the underlying principle is the same: the societal value of DNA databanks outweighs the privacy interests of convicted offenders.¹⁴⁶

Although this Section focuses on the privacy aspects (rather than the constitutionality *per se*) of familial searches, the Fourth Amendment analysis of many courts offers an illuminating view of their understanding of and tendency to minimize the privacy interests at stake. Courts often observe that, once convicted of a felony or other crime, an offender's privacy interests are reduced.¹⁴⁷ In addition, by focusing only on the immediate injury or intrusion in the case before them, courts typically reason that the collection of DNA samples is itself a minimal privacy intrusion that is outweighed by the state's interest in pursuing potential leads.¹⁴⁸ They suggest that the greatest infringement on the individual is the physical collection of the sample. Because it can be done fairly painlessly and unobtrusively — collecting a cheek swab, for example, as opposed to pumping someone's stom-

searches “without any individualized suspicion of criminality, negligence or malfeasance,” Maclin, *supra* note 7, at 170, “when ‘special needs, beyond the normal need for law enforcement, make the warrant and probable-cause requirement impracticable,’” Griffin v. Wisconsin, 483 U.S. 868, 873 (1987) (quoting New Jersey v. T.L.O., 469 U.S. 325, 351 (1985) (Blackmun, J., concurring in judgment)). Some courts have ruled that the special needs test cannot justify the mandatory collection of DNA from offenders since it was clear that law enforcement objectives predominated the authorizing legislation. See United States v. Weikert, 504 F.3d 1, 10 (1st Cir. 2007).

144. See, e.g., Weikert, 504 F.3d at 3 (1st Cir. 2007); Johnson v. Quander, 440 F.3d 489, 92 (D.C. Cir. 2006); United States v. Sczubelek, 402 F.3d 175, 184 (3d Cir. 2005); United States v. Kincade, 379 F.3d 813, 832 (9th Cir. 2004); Jones v. Murray, 962 F.2d 302, 306–07 (4th Cir. 1992).

145. See, e.g., Weikert, 504 F.3d at 15; Johnson, 440 F.3d at 492; Sczubelek, 402 F.3d at 184; Kincade, 379 F.3d at 839–40; Jones, 962 F.2d at 307.

146. Hibbert, *supra* note 7, at 769 (“For the most part these DNA databanking laws were grounded in the belief that the compelling interest in solving past and future crimes justified any imposition on a convicted criminal’s privacy interest in not having his or her DNA digitized in the state database.”). Similarly, David Kaye suggests that, even if noninvasive sampling of DNA is considered a “search” under the Fourth Amendment, sampling may still be permissible. He bases this assertion on instances in which courts have allowed intrusions in cases of special government need. See Kaye et al., *supra* note 52, at 4, 10.

147. See, e.g., Rise v. Oregon, 59 F.3d 1556, 1560 (9th Cir. 1995); Jones, 962 F.2d at 306; Barry Steinhardt, *Privacy and Forensic DNA Data Banks*, in DNA AND THE CRIMINAL JUSTICE SYSTEM 173, 185 (David Lazer ed., 2004); Simoncelli & Steinhardt, *supra* note 53, at 204. Courts have ruled similarly with respect to individuals on conditional or supervised release. Weikert, 504 F.3d at 11; Johnson, 440 F.3d at 492; Sczubelek, 402 F.3d at 183; Kincade, 379 F.3d at 832; cf. Amerson, 483 F.3d at 79 (observing that Supreme Court has not explicitly held probationers to have sufficiently diminished expectations of privacy to warrant DNA sampling); United States v. Hook, 471 F.3d 766, 772 (7th Cir. 2006) (“Those under supervised release do not enjoy the absolute liberty to which every citizen is entitled . . .” (quoting Griffin, 483 U.S. at 87) (internal quotation marks omitted)).

148. See, e.g., Weikert, 504 F.3d at 15; Amerson, 483 F.3d at 89; Johnson, 440 F.3d at 496; Hook, 471 F.3d at 773; Sczubelek, 402 F.3d at 184; Kincade, 379 F.3d at 836; Jones, 962 F.2d at 307.

ach or performing surgery — many courts presume that the procedure is merely a minor intrusion and therefore minimal privacy interests are at stake.¹⁴⁹

Moreover, as courts and some commentators point out, the analysis performed on the sample is merely identifying, much like fingerprints or photographs.¹⁵⁰ The DNA profiles, they reason, do not reveal personal information, such as behavioral traits or a propensity for developing a particular disease.¹⁵¹ As a result, they conclude that very few privacy interests are at stake in DNA profiling, especially for people whose privacy interests are reduced.

Much of the judicial analysis fails to look beyond the specific and immediate intrusions of collecting and profiling the DNA sample and therefore does not consider the full breadth of privacy interests. Courts often minimize or fail to address the fact that the collection of DNA samples involves two privacy intrusions: the actual collection of biological samples and the retention of samples that contain one's genetic information.¹⁵² Whereas ordinary fingerprints provide only identifying information, the actual DNA samples also contain a wealth of personal information, such as predisposition to certain diseases, behaviors, physical and mental traits,¹⁵³ parentage, and genetic relatedness to others.¹⁵⁴ According to recent research, even some as-

149. See, e.g., *Kincade*, 379 F.3d at 836 (“[T]he intrusion occasioned by a blood test is not significant, since such tests are a commonplace . . . the quantity of blood extracted is minimal, and . . . for most people the procedure involves virtually no risk, trauma, or pain.” (quoting *Skinner v. Ry. Labor Executives’ Ass’n*, 489 U.S. 602, 625 (1989)) (internal quotation marks omitted)).

150. *Weikert*, 504 F.3d at 3–4; *Jones*, 962 F.2d 302; *Maclin*, *supra* note 7, at 169; *Williams & Johnson*, *supra* note 31, at 236.

151. See, e.g., *Kincade*, 379 F.3d at 837; Amitai Etzioni, *A Communitarian Approach: A Viewpoint on the Study of the Legal, Ethical and Policy Considerations Raised by DNA Tests and Databases*, 34 J.L. MED. & ETHICS 214, 217 (2006) (“[P]roponents of DNA databases argue that the DNA profiles kept and stored by law enforcement . . . do not provide any meaningful information about individuals, aside from allowing us to determine whether two samples have come from the same person.”); David H. Kaye, *Two Fallacies About DNA Data Banks for Law Enforcement*, 67 BROOK. L. REV. 179, 192 (2001) (The genetic profiles are “represented in the data base records as a series of digits comparable to social security or passport numbers.”); *Maclin*, *supra* note 7, at 169.

152. See, e.g., *Weikert*, 504 F.3d at 4 (minimizing the risk of abuse because of the statutory penalties for abuse of samples); *Johnson*, 440 F.3d at 499–500 (finding the retention of samples to be constitutional because retesting of the sample was not imminent and any future challenge was unlikely to be successful because “[a]ny future test on a stored blood sample will not ‘discern [any] human activity,’ nor will it constitute a ‘physical intrusion.’”); *Kincade*, 379 F.3d at 837–38 (refusing to address the possibility that retained DNA samples could later be mined for further private information because the federal statute safeguarded against such misuse and the issue was not before the court). Retaining the DNA profiles themselves, however, does not raise the same issue as retaining the samples, since it is the latter that contains deeply personal information.

153. Rothstein & Carnahan, *supra* note 20, at 156; Weiss, *DNA Bank*, *supra* note 24, at A1, A6.

154. Kaye, *supra* note 151, at 187; Weiss, *DNA Bank*, *supra* note 24, at A1, A6.

pects of our genetic profiles may reveal some personal information.¹⁵⁵ All of this genetic information is deeply personal not only because it can identify us, but because “[i]t is fundamental and basic to our make-up.”¹⁵⁶ It plays an important, though not monolithic, role in influencing our “temperament, health, capacities, and physical appearance.”¹⁵⁷ This is what fundamentally distinguishes DNA fingerprinting from ordinary fingerprinting.¹⁵⁸

Indeed, because much (though not all) of our genetic information is “integral to the self,” it is one kind of personal information in which we have a strong privacy interest.¹⁵⁹ Part of the value of protecting “informational privacy,”¹⁶⁰ or the right to control the disclosure of

155. John M. Butler, *Genetics and Genomics of Core Short Tandem Repeat Loci Used in Human Identity Testing*, 51 J. FORENSIC SCI. 253, 260 (2006) (noting that some of the regions of the genome thought to be non-coding have been shown to indicate predispositions for some conditions); R.E. Gaensslen, *Should Biological Evidence or DNA Be Retained by Forensic Science Laboratories After Profiling? No, Except Under Narrow Legislatively-Stipulated Conditions*, 34 J.L. MED. & ETHICS 375, 376 (2006); Kaye, *supra* note 151, at 187; Rosen, *supra* note 47, at 41 (noting that a team of scientists reported that “the standard DNA fingerprints used by police around the world contain a subtle signature which can be linked to a person’s susceptibility to Type 1 diabetes”).

156. Sonia M. Suter, *Disentangling Privacy from Property: Toward a Deeper Understanding of Genetic Privacy*, 72 GEO. WASH. L. REV. 737, 773–74 (2004).

157. *Id.* at 774 (noting that “genetics is not solely determinative” and that “[g]enes and environment work together in complex ways” to influence who we become).

158. Some countries, such as South Africa, focus on the nature of the information when approaching the issue of privacy protections. The Constitutional Court of South Africa has embraced the theory that “there is ‘a continuum of privacy rights which may be regarded as starting with a wholly inviolable inner self, moving to a relatively impervious sanctum of the home and personal life and ending in a public realm where privacy would only remotely be implicated.’” DANIEL J. SOLOVE, UNDERSTANDING PRIVACY 68 (2008) (quoting *Ministry v. Interim Nat’l Medical & Dental Council*, 1998 (4) SA 1127 (CC) at 30 (S. Afr.), available at <http://www.worldlii.org/za/cases/ZACC/1998/10.html>). The United States has also at times focused on the kind of information disclosed. *Id.* For instance:

In *Illinois v. Caballes*, the U.S. Supreme Court concluded that people lack a reasonable expectation of privacy in the possession of drugs from drug-sniffing dogs because ‘governmental conduct that *only* reveals the possession of contraband compromises no legitimate privacy interest.’ The Court’s reasoning suggests that privacy is violated only if information about legal activities is revealed.

Id. (quoting *Illinois v. Caballes*, 543 U.S. 405, 408–09 (2005)).

159. Suter, *supra* note 156, at 773; see also *Skinner v. Ry. Labor Executives’ Ass’n*, 489 U.S. 602, 617 (1989) (observing that “chemical analysis of urine [for employee drug testing], like that of blood, can reveal a host of private medical facts about an employee, including whether he or she is epileptic, pregnant, or diabetic”).

160. Informational privacy rights encompass individuals’ rights to protect against both unwanted disclosure and unwanted discovery of personal information. Yet informational privacy is just one aspect of privacy. See Jerry Kang, *Information Privacy in Cyberspace Transactions*, 50 STAN. L. REV. 1193, 1202–05 (1998) (distinguishing information privacy rights from spatial privacy rights and decisional privacy rights). As many have noted, “[t]he meaning of privacy . . . has proven elusive.” Jonathan Kahn, *Privacy as a Legal Principle of Identity Maintenance*, 33 SETON HALL L. REV. 371, 371 (2003); see also Sheri A. Alpert, *Protecting Medical Privacy: Challenges in the Age of Genetic Information*, 59 J. SOC. ISSUES 301, 302 (2003) (noting various definitions of privacy); Judith Jarvis Thomson, *The Right to Privacy*, 4 PHIL. & PUB. AFF. 295, 295 (1975) (“Perhaps the most striking thing about the right to privacy is that nobody seems to have any very clear idea what it is.”). This

personal facts,¹⁶¹ is its role in protecting personhood interests.¹⁶² Privacy preserves the “integrity of the personality”¹⁶³ and is “an essential component of self-definition and individual development.”¹⁶⁴ As Jonathan Kahn has argued, privacy can be conceptualized “as a tool for formulating identity.”¹⁶⁵ Indeed, he suggests that the many conceptualizations of privacy ultimately express a notion that privacy “provides principles for negotiating the legal management of personhood in a manner that facilitates the development and maintenance of a coherent individual identity essential to our liberal polity’s commitment to human flourishing.”¹⁶⁶ Genetic information is central to this

is largely due to the fact that privacy encompasses many different concepts and goals. See SOLOVE, *supra* note 158, at 79 (offering examples of how “privacy is vital to self-development”); William M. Beaney, *The Right to Privacy and American Law*, 31 LAW & CONTEMP. PROBS. 253, 255 (1966) (“[E]ven the most strenuous advocate of a right to privacy must confess that there are serious problems of defining the essence and scope of this right.”); Charles Fried, *Privacy*, 77 YALE L.J. 475, 477–78 (1968) (describing “why a threat to privacy seems to threaten our very integrity as persons”); Daniel J. Solove, *Conceptualizing Privacy*, 90 CAL. L. REV. 1087, 1116 (2002); Suter, *supra* note 156.

161. As E.L. Godkin declared over a century ago, privacy protects the “right of every man to keep his affairs to himself, and to decide for himself to what extent [he] shall be the subject of public observation and discussion.” E.L. Godkin, *Libel and Its Legal Remedy*, 46 ATLANTIC MONTHLY 729, 736 (1880); see also SOLOVE, *supra* note 158 at 24–29 (describing privacy theories that view personal information as individual property such that individuals have control over what may be disclosed); ALAN F. WESTIN, *PRIVACY AND FREEDOM* 7 (1967); Randall P. Bezanson, *The Right to Privacy Revisited: Privacy, News, and Social Change, 1890–1990*, 80 CAL. L. REV. 1133, 1174 (1992) (advocating “[s]hifting the focus of privacy to individual control of identified private information . . .”); Richard B. Parker, *A Definition of Privacy*, 27 RUTGERS L. REV. 275, 281 (1974) (“[P]rivacy is control over when and by whom the various parts of us can be sensed by others.” (emphasis omitted)); Richard A. Posner, *Privacy, Secrecy, and Reputation*, 28 BUFF. L. REV. 1, 3 (1979); Jeffrey H. Reiman, *Privacy, Intimacy and Personhood*, 6 PHIL. & PUB. AFF. 26, 39 (1976).

162. “Privacy is an essential part of the complex social practice by means of which the social group recognizes — and communicates to the individual — that his existence is his own. And this is a precondition of personhood.” Reiman, *supra* note 161, at 39; see also Suter, *supra* note 156, at 770 (describing the personhood aspects of privacy).

163. Solove, *supra* note 160, at 1116.

164. Kahn, *supra* note 160, at 371; see also Edward J. Bloustein, *Privacy As An Aspect of Human Dignity: An Answer to Dean Prosser*, 39 N.Y.U. L. REV. 962, 987 (1964) (arguing that commercial exploitation of a person’s name or likeness is a privacy tort because it exploits an aspect of that person’s personality without their permission).

165. Kahn, *supra* note 160, at 410.

166. *Id.* at 373; see also LAURENCE H. TRIBE, *AMERICAN CONSTITUTIONAL LAW* 1304 (2d ed. 1988) (describing privacy protecting the need “to be master of the identity one creates in the world”); Bezanson, *supra* note 161, at 1138 (describing Warren and Brandeis’s famous elaboration of the right to privacy as protecting “the individual’s right to enjoy an identity forged by the existing social institutions of family and community”); Tom Gerety, *Redefining Privacy*, 12 HARV. C.R.-C.L. L. REV. 233, 236 (1977) (defining privacy as “an autonomy or control over the intimacies of personal identity”); Kahn, *supra* note 160, at 375 (noting that in *Pavesich v. New England Life Ins. Co.*, 50 S.E. 68 (Ga. 1905), the first case to recognize a right to privacy, the Georgia Supreme Court found that using a person’s name or image for commercial reasons without his consent assaulted his “dignity as manifested in the integrity of one’s individual identity or persona”); *id.* at 378 (“Invasions of privacy . . . undermine the integrity of one’s identity by: forcing the manifestation of a partial or reductive version of one’s individuality, more thoroughly effacing one’s individuality, or other-

development of identity and conceptualization of self, both as individuals and in our understanding of ourselves in relation to others.¹⁶⁷ Of course, it's important to emphasize here that genetic information is not uniquely, nor is all genetic information equally, central to the conception of the self.¹⁶⁸

That law enforcement has actual, and in some jurisdictions, possibly legal,¹⁶⁹ access to such personally defining information simply by virtue of collecting DNA samples is problematic.¹⁷⁰ The lack of a national policy regarding sample retention¹⁷¹ and the retention of DNA samples by crime labs for lengthy periods, or even indefinitely,¹⁷² further exacerbate these concerns by heightening the possibility that someone could mine personal and private information from

wise rendering the individual as fungible and non-distinct."); *id.* at 382 ("Privacy is valued insofar as it fosters the conditions within which an individual may establish, maintain and develop her identity as a core aspect of personhood."); *id.* at 399 (describing Justice Brandeis's famous dissent in *Olmstead v. United States*, 277 U.S. 438, 478 (1928), as recognizing that the Constitution "protect[s] a sphere in which the individual can freely maintain and develop his identity"); *id.* at 403 ("[T]he basic goal [of constitutional and common law privacy] is to legally recognize, define, and protect the integrity of individual identity, or, as Justice Brandeis termed it, the 'spiritual nature of man.'" (citing Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890))).

167. See Suter, *supra* note 156, at 772–73 (observing that our personal narrative, which forms our identity, includes understanding ourselves "in terms of what matters or has significance to us," which occurs not in isolation, but "in relation to others with whom we confront our thoughts against their thoughts and reactions"); *infra* text accompanying notes 250–53; see also Ting-Chi Liu, DNA and Criminal Investigations: Protecting Privacy in Forensic DNA Databases 42 (May 17, 2009) (unpublished S.J.D. dissertation, George Washington University Law School) (on file with author) (describing the impact of genetic influence on personhood).

168. See generally Sonia M. Suter, *The Allure and Peril of Genetic Exceptionalism: Do We Need Special Genetics Legislation?*, 79 WASH. U. L.Q. 669 (2001).

169. See *infra* text accompanying notes 182–94.

170. Kaye, *supra* note 27, at 505 ("Although health insurers are not especially interested in [DNA] information and although a small explosion of state laws ban or restrict [DNA information] use in insurance and the workplace, the possibility that the government will allow the samples to fall into the wrong hands or will misuse them for its own purposes must not be ignored."). During the House Judiciary Subcommittee on Crime's hearings on CODIS and the forensic uses of DNA databases, Barry Steinhardt, later the Director of the Technology and Liberty Program at the American Civil Liberties Union, testified that, "[w]hile a DNA data bank for criminal identification purposes may have legitimate uses, I am skeptical that we can hold the line and ward off the temptation to expand its use to non-forensic purposes." *Violent Offender DNA Identification Act of 1999, DNA Backlog Elimination Act and Convicted Offender DNA Index System Support Act: Hearing on H.R. 2810, H.R. 3087 and H.R. 3375 Before the Subcomm. on Crime of the H. Comm. on the Judiciary*, 106th Cong. 178 (2000) (prepared testimony of Barry Steinhardt, Associate Director, American Civil Liberties Union) [hereinafter Steinhardt Testimony], available at http://commdocs.house.gov/committees/judiciary/hju65302.000/hju65302_0.htm.

171. Rothstein & Talbott, *supra* note 50, at 158.

172. *Id.* (surmising that "in almost every state the samples are retained indefinitely"); Steinhardt, *supra* note 147, at 190; Bieber & Lazer, *supra* note 51; Cook, *supra* note 41, at A1, A5. Nebraska requires the permanent retention of samples, Arizona requires their retention for a minimum of 35 years, and "Wisconsin is the only state that explicitly requires the destruction of DNA samples after analysis is completed, but reportedly, no samples have yet been destroyed." Rothstein & Talbott, *supra* note 50, at 158.

the samples either through unauthorized third party access or “for malicious, retributive, or oppressive purposes.”¹⁷³

Law enforcement officials argue, however, that they need to retain samples in order to make sure the previous DNA analysis was done properly.¹⁷⁴ In addition, techniques for DNA identification may change over time as new, better tests become available, and thus, they argue, old samples would have to be re-analyzed with the new techniques.¹⁷⁵ For these reasons, some courts have deemed not only the initial collection of DNA samples to be constitutional, but also the long-term retention of the samples.¹⁷⁶

In spite of these arguments, we should be wary of this practice given its substantial threat to privacy and civil liberties. As a starting point, we should not even contemplate the retention of DNA samples unless legislatures impose explicit limits on the uses of such samples. Although the purpose of establishing DNA databases is to create identifying profiles, not to obtain highly sensitive and personal information,¹⁷⁷ the vast majority of authorizing statutes do not expressly prohibit efforts to obtain such information from DNA samples.¹⁷⁸ In fact, one state, Alabama, actually explicitly authorizes the use of collected samples “[t]o provide data relative to the causation, detection and prevention of disease or disability” and “[t]o assist in . . . educational research or *medical* research or development.”¹⁷⁹ In addition, Michigan authorizes the use of anonymized database information for “‘academic’ or ‘research’ purpose[s],”¹⁸⁰ leaving uncertain what the nature and scope of legitimate research is. Construed broadly, this statute might allow for research on the source’s traits and diseases, which could potentially include medical research. Only eight state

173. Rothstein & Talbot, *supra* note 50, at 158; *see also* Williams & Johnson, *supra* note 31, at 235 (summarizing much of the literature describing these concerns).

174. Williams & Johnson, *supra* note 31, at 240 (describing some of the rationales for sample retention); Weiss, *DNA Bank*, *supra* note 24, at A6 (quoting Thomas Callaghan, who oversees the FBI database).

175. Weiss, *DNA Bank*, *supra* note 24, at A6 (noting that the FBI wants to have the flexibility to “use new DNA identification methods on older samples as the science improves”; otherwise, “‘you’d be freezing the database to today’s technology’” (quoting Thomas Callaghan)); *cf. infra* text accompanying notes 529–30.

176. *Johnson v. Quander*, 440 F.3d 489, 499–500 (D.C. Cir. 2006); *see supra* note 152 and accompanying text.

177. Weiss, *DNA Bank*, *supra* note 24, at A6 (“Law enforcement officials say they have no interest in reading people’s genetic secrets.”).

178. SETH AXELRAD, AM. SOC’Y OF LAW, MED. & ETHICS, USE OF FORENSIC DNA DATABASE INFORMATION FOR MEDICAL OR GENETIC RESEARCH (2005), http://www.aslme.net/dna_04/reports/axelrad3.pdf (“40 state statutes are either silent on this issue . . . or they neither expressly authorize nor prohibit such research . . .”); *see also* Rosen, *supra* note 47, at 42 (noting that there are “no consistent regulations regarding who can access information and for what reasons”).

179. ALA. CODE § 36-18-31(b)(3) (West 2010) (emphasis added).

180. MICH. COMP. LAWS ANN. § 28.176 (West 2009); AXELRAD, *supra* note 178.

statutes explicitly proscribe medical research and more probing analysis of DNA samples.¹⁸¹

In the forty remaining jurisdictions that do not address this issue, there is some uncertainty as to the legal limits on law enforcement's uses of the stored samples. When statutes describe specific authorized uses that do not include medical and other probing analysis, we might presume that the more probing DNA analysis is prohibited.¹⁸² However, many statutes allow access to the samples for "undefined law enforcement purposes."¹⁸³ Analyzing the stored samples to develop a DNA forensic profile based on information about certain propensities to disease, physical traits, or behavioral traits might be construed as a law enforcement purpose. Criminologists may have an interest in assessing the relationship between criminal behavior and certain traits or even diseases, both to understand criminal behavior and to solve crimes.¹⁸⁴ In fact, in 1996, the Massachusetts legislature authorized a study to research "the biological cause of crime" with the goal of working "toward a more effective approach toward criminology."¹⁸⁵

Already, law enforcement has the capacity to engage in some form of DNA forensic profiling.¹⁸⁶ Researchers are developing techniques to create even more specific phenotypic profiles based on genetic samples so they can predict, for example, the perpetrator's race,¹⁸⁷ height, and other identifiable traits.¹⁸⁸ Some version of this

181. AXELRAD, *supra* note 178 ("Indiana, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, and Wyoming . . . expressly prohibit the use of the DNA database to obtain information on human physical traits, predisposition to disease, or medical or genetic disorders.").

182. *Id.* (describing, for example, how Alaska's statute does not list genetic or medical research as authorized uses).

183. Rothstein & Carnahan, *supra* note 20, at 156.

184. See Elizabeth E. Joh, *Reclaiming "Abandoned" DNA: The Fourth Amendment and Genetic Privacy*, 100 NW. U. L. REV. 857, 876-77 (noting how problematic and controversial such research is).

185. Steinhardt, *supra* note 147, at 184.

186. See Rothstein & Talbot, *supra* note 50, at 158.

187. See NIJ, *supra* note 21, at 60 (describing discussion and studies of using DNA samples "to determine characteristics of the person who left the sample" including frequencies of certain alleles to infer the ethnic population from which the perpetrator is likely to belong).

188. See *id.* at 61 (noting that although the loci used for DNA identification do not indicate physical traits, some laboratories are actively searching for markers associated with traits such as eye color, hair color, skin pigment, baldness, color blindness, or other traits). The National Institute of Justice has awarded grants to research projects entitled "Identifying and Communicating Genetic Determinants of Facial Features," "Determination of the Physical Characteristics of an Individual from Biological Stains," and "Gene Polymorphism and Human Pigmentation." Murphy, *supra* note 62, at 23 & n.129. This technique has been labeled "phenotypic DNA profiling," TANIA SIMONCELLI & SHELDON KRIMSKY, AM. CONST. SOC'Y FOR L. AND POL'Y, A NEW ERA OF DNA COLLECTIONS: AT WHAT COST TO CIVIL LIBERTIES?, 11-13 (2007), <http://www.acslaw.org/node/5338> (follow "attachment" hyperlink), or "genetic photofitting," ROBIN WILLIAMS & PAUL JOHNSON, GENETIC POLICING: THE USE OF DNA IN CRIMINAL INVESTIGATION 72 (2008). The United Kingdom has suggested that it will support the "[u]se of DNA to predict physical characteristics."

technique has already been used. In an investigation of a serial killer in Baton Rouge, Louisiana, the investigation switched its focus away from white suspects after analysis of the perpetrator's DNA showed that he had "85 percent African ancestry and 15 percent American Indian."¹⁸⁹ Analysis of traits in stored samples may be necessary to further develop this technology so that not only physical traits can be predicted, but also behavioral traits¹⁹⁰ or even medical conditions.¹⁹¹ As a result, it seems unlikely that retained samples are actually protected from intrusive analysis in most jurisdictions, which raises serious privacy concerns, even for convicted offenders with reduced privacy interests.¹⁹² Although one commentator suggests that there may be constitutional limits as to the possible use of samples, even if lawfully collected,¹⁹³ such limits are likely to be relatively lenient as long as an arguable case could be made that the uses are related to law enforcement.¹⁹⁴

For all of these reasons, the retention of DNA samples is particularly problematic. In a more typical physical search where police obtain contraband, for example, the fruit of that search is usually used for the prosecution of crimes related to the items seized. In contrast, the fruits of a DNA search may be used not only for the crime that led to its collection, but also for the prosecution of crimes unrelated to the

HOME OFFICE, POLICE SCIENCE AND TECHNOLOGY STRATEGY 2003 TO 2008 24 (2003), available at http://police.homeoffice.gov.uk/publications/operational-policing/full_copy_sciencetech_strategy.p?view=Binary.

189. Nicholas Wade, *Unusual Use of DNA Aided in Serial Killer Search*, N.Y. TIMES, June 3, 2003, at A28. The company that performed this genetic test, DNAPrint Genomics, also offers a service called Retinome, which the company alleges can determine iris color from DNA. WILLIAMS & JOHNSON, *supra* note 188, at 73.

190. See Pilar N. Ossorio, *About Face: Forensic Genetic Testing for Race and Visible Traits*, 34 J.L. MED. & ETHICS 277, 286 (2006) (stating that "forensic scientists and police could be interested in a sample source's genetic propensities to develop mental disorders, particular personality traits, or cognitive abilities").

191. See SIMONCELLI & KRIMSKY, *supra* note 188, at 12.

192. In addition, there is the risk that widespread use of DNA forensic profiling techniques by the government may expand into other areas, where people attempt to make predictions about behavioral tendencies for employment, admission to schools, etc. based on genetics, reinforcing the tendency to believe, incorrectly, that our genes determine who we are. Rothstein & Talbot, *supra* note 50, at 158; see also Suter, *supra* note 168, at 674–75. Forensic profiling is not, of course, a new phenomenon in law enforcement; sketches may be created based on eyewitness accounts and psychological profiles may be developed through the use of expert analysis. These techniques are just as likely as DNA forensic profiles to be of "dubious value." Rothstein & Talbot, *supra* note 50, at 158.

193. Murphy, *supra* note 62, at 38 ("It cannot be that so long as DNA samples are lawfully collected, the government may do whatever it wants with them — even up to and including cloning the person into an army of warriors.").

194. Murphy notes that even though some courts have "tied the constitutionality of taking the sample to the constitutionality of the manner in which the sample will be used, . . . these same courts have remained largely untroubled by the retention of DNA physical samples . . . or the use of new typing tests . . . on previously collected samples." *Id.* at 39. She also points out that no court has specifically analyzed the constitutionality of the separate states of DNA analysis from collection, to analysis, to retention, to additional testing, to databasing the test results, and finally to searching the databases. *Id.* at 39–40.

initial collection of the sample. In addition, although the search for contraband always potentially raises the risk that police will (in)advertently discover personal information unrelated to the crime being investigated or the scope of the search warrant,¹⁹⁵ such a risk does not tend to persist once the search has ended. In contrast, the retention of samples collected for a DNA search, especially with few or vague legislative limits on the uses of the samples, leaves open the continued risk that police may gather information that exceeds the scope of the original search.¹⁹⁶ And even with more explicit legislative limits, one wonders whether we can ensure that the government and other actors will adhere to those limits or how well we can determine whether they do. The risks to privacy therefore linger indefinitely, raising civil liberty concerns by increasing the extent and breadth of government intrusions into our lives. The fear is that continuous and possibly unfettered access to this information moves us, to quote Justice Douglas in *Osborn v. United States*,¹⁹⁷ in the direction of “a society quite unlike any we have seen — a society in which government may intrude into the secret regions of man’s life at will.”¹⁹⁸

195. Electronic searches, for example, raise the risk of potentially gathering information beyond the scope of a particular search warrant since a computer may contain a great deal of different kinds of personal information. *Cf.* *United States v. Comprehensive Drug Testing, Inc.*, 579 F.3d 989 (9th Cir. 2009) (discussing the inadvertent collection of information that exceeded the scope of the search warrant). For a more detailed discussion of this case, see Andrew Vahid Moshirnia, *Separating Hard Fact From Hard Drive: A Solution For Plain View Doctrine In The Digital Domain*, 23 HARV. J.L. & TECH. 609, 613–16 (2010); *supra* note 140 and accompanying text.

196. David Kaye suggests that, in spite of convicted offenders’ reduced expectation of privacy, the retention of samples results in their suffering “a more permanent loss of privacy.” David H. Kaye, *The Science of DNA Identification: From the Laboratory to the Courtroom (and Beyond)*, 8 MINN. J.L. SCI. & TECH. 409, 425 (2007). He queries, “Would we say that a man or woman who was once convicted of a crime but has long since completed the sentence has no claim to the protections of the Fourth Amendment?” *Id.* Although he implies that we would say no, he points out:

Certain dicta suggest that the Supreme Court might uphold compulsory acquisition of biometric data from a person when (1) the process is not physically or mentally invasive, (2) the data are useful primarily to link individuals to crime scenes or to establish the true identity of a given individual, and (3) the data are valid, reliable, and effective for this purpose. In these circumstances, harms to individuals and the benefits of judicial review are minor; hence, the balance between individual privacy and government interests points to the reasonableness of the collection and use of the identifying data without a judicial warrant.

Id.

197. 385 U.S. 323 (1966).

198. *Id.* at 343 (Douglas, J. dissenting); *see also* Rothstein & Talbott, *supra* note 50, at 161 (quoting *Osborn*, 385 U.S. at 343) (suggesting that the more information police have about individuals, the more difficult it becomes “to prevent other uses of the information by the government”).

2. Arrestees

All of these privacy and civil liberty concerns are heightened when databases include samples from arrestees. Advocates for the collection of DNA from arrestees rely on many of the same arguments used to justify DNA databanks for convicted offenders,¹⁹⁹ including identifying criminals²⁰⁰ and deterring crime.²⁰¹ In addition, they point to the administrative interest of creating “an unequivocal record of just who has been arrested.”²⁰² Some even suggest that when arrested upon probable cause, arrestees have a diminished privacy right because “identification of suspects is relevant not only to solving the crime for which the suspect is arrested, but also for maintaining a permanent record to solve other past and future crimes.”²⁰³ Persuaded by these views, legislatures in at least fifteen states have enacted laws mandating the collection of DNA samples from arrestees.²⁰⁴

Many argue, correctly I believe, that such statutes “exceed[] constitutional limits.”²⁰⁵ Constitutional issues aside, however, some argue that these practices heighten the privacy intrusions imposed by DNA profiling because arrestees should be presumed innocent and therefore should not have reduced privacy interests.²⁰⁶ Collecting DNA samples from arrestees treats them, to borrow a phrase, as “‘innocentish,’ [putting them in] a purgatory of sorts where an individual’s genetic profile can be used against her and her family.”²⁰⁷ Two of the few courts to examine this issue concluded that such a statute was constitutionally

199. Lew, *supra* note 51, at 210 (noting that many of the arguments in favor of DNA sampling of arrestees “may be justified by the same reasons that have supported the federal circuits’ approval of less expansive DNA databank statutes”).

200. Some suggest this expansion can help law enforcement “identify elusive serious offenders (rapists, murderers) when they’re arrested for other crimes.” *Mission Creep*, *supra* note 47.

201. This approach might deter arrestees from committing crimes in the future if they know the state has their DNA profile. *Id.*; see Maclin, *supra* note 7, at 168.

202. Kaye, *supra* note 27, at 487.

203. *Jones v. Murray*, 962 F.2d 302, 306 (4th Cir. 1992).

204. See *Mission Creep*, *supra* note 47. See *supra* note 51.

205. Lew, *supra* note 51, at 210; see also Maclin, *supra* note 7, at 169–70 (arguing that the collection of samples from arrestees is a bodily intrusion that constitutes a suspicionless search under the Fourth Amendment that cannot be justified by the special needs exception). Stephen Mercer, a defense attorney from Maryland, “predicts that courts will be skeptical of the expansion of DNA databases to include arrestees.” Rosen, *supra* note 114.

206. See *In re Welfare of C.T.L., Juvenile*, 722 N.W.2d 484, 492 (Minn. Ct. App. 2006). But see *Anderson v. Commonwealth*, 650 S.E.2d 702, 705 (Va. 2007) (arguing as a result that no “additional finding of individualized suspicion,” much less probable cause, must be established before the sample may be obtained (quoting *Jones*, 962 F.2d at 306)).

207. Gabel, *supra* note 51, at 48 (quoting Tom Sutcliffe, Opinion, “‘Innocentish’ – An Essential Part of Justice, THE INDEPENDENT, May 12, 2009, <http://www.independent.co.uk/opinion/columnists/thomas-sutcliffe/tom-sutcliffe-innocentish-ndash-an-essential-part-of-justice-1683146.html>).

infirm precisely because of the presumption of innocence.²⁰⁸ A few others, however, found that “the taking of a DNA sample [from an arrestee] . . . is permissible as a part of routine booking procedures.”²⁰⁹

In describing the collection of DNA from arrestees as part of routine booking procedures, the courts imply that DNA profiling is like detention for ordinary fingerprinting. In *Davis v. Mississippi*,²¹⁰ the Supreme Court suggested in dictum that ordinary fingerprint detention might be constitutional because it “may constitute a much less serious intrusion upon personal security than other types of police searches and detentions.”²¹¹ The Court reasoned that fingerprinting “involves none of the probing into an individual’s private life and thoughts that marks an interrogation or search. Nor can fingerprint detention be employed repeatedly to harass any individual, since the police need

208. See *In re C.T.L.*, 722 N.W.2d 484. The statute at issue in *In re C.T.L.* mandated the collection of biological specimens from people who had been charged for certain offenses, but not yet convicted. *Id.* at 488. The court reasoned that a finding of probable cause to support a criminal charge could not be presumed to be the same as probable cause to issue a search warrant. *Id.* at 490. As a result, the statute effectively mandated governmental searches without a warrant or any consideration as to “whether the biological specimen to be taken is related in any way to the charged crime or to any other criminal activity.” *Id.* at 491. The court observed that prior opinions found the collection of DNA from convicted offenders to be constitutional because “an individual who has been convicted of an offense has a reduced expectation of privacy . . . [that] does not outweigh the state’s interest in DNA testing.” *Id.* Nevertheless, it found those holdings inapplicable to individuals merely charged with crimes. *Id.* Because the state requires that the samples be destroyed if the charges are dismissed, “the legislature has determined” that the privacy interests of such individuals are greater than the state’s interest in DNA sampling. *Id.* Thus, “because a person who has been charged is presumed innocent until proved guilty,” the court saw “no basis for concluding that before being convicted, a charged person’s privacy expectation is different from the privacy expectation of a person who was charged but the charge was dismissed or the person was found not guilty.” *Id.* at 491–92.

In *United States v. Mitchell*, No. 09cr105, 2009 U.S. Dist. LEXIS 103575 (W.D. Pa. Nov. 6, 2009), the court considered the defendant’s status as both arrestee and pretrial detainee. It chided the government for failing to address “the presumption of innocence” and refused to equate a finding of probable cause with “a proper determination of guilt beyond a reasonable doubt.” *Id.* at *22–23. The court reasoned that although “pretrial detainees have a diminished expectation of privacy as it relates to legitimate penological interests, the Fourth Amendment does not stop at the jailhouse door” and therefore suspicionless searches are only legitimate for prison security. *Id.* at *25. Further, the court rejected as “folly” the government’s argument that DNA fingerprinting is like ordinary fingerprinting. As the court asserted, “[s]uch oversimplification ignores the complex, comprehensive, inherently private information contained in a DNA sample.” *Id.* at *28.

209. *Anderson*, 650 S.E.2d at 706; see also *United States v. Pool*, 645 F. Supp. 2d 903, 910 (E.D. Cal. 2009) (applying the totality of the circumstances and concluding that “the decision to impose the DNA testing requirement on pre-trial detainees or releasees seems clearly warranted, if not compelling” because “[a]n arrestee’s identity obviously becomes a matter of legitimate state interest” and because an arrestee “has a diminished expectation of privacy in his own identity”); *Gorman v. Minnesota*, 52-CV-05-684, 5th Judicial Dist. Court (Dec. 15, 2005) (ruling that pre-conviction collection of DNA is unconstitutional), cited in *Murphy*, *supra* note 62, at 40 n.135.

210. 394 U.S. 721 (1969).

211. *Id.* at 727.

only one set of each person's prints."²¹² Even if we concede that arrestees have reduced privacy interests in identification through ordinary fingerprinting, DNA fingerprinting is still troubling. First, any possibility that the DNA profiles themselves contain personal information is problematic,²¹³ particularly if the profile is retained. Second, and more important, unlike the collection of ordinary fingerprints, the collection of biological samples to be used for DNA profiling creates the possibility of "probing into an individual's private life," especially given the important medical information contained therein.²¹⁴ The long-term retention of DNA samples in most states, coupled with often-inadequate protections against highly intrusive mining of these samples for personal information central to privacy and personhood interests, makes DNA profiling even more troubling.²¹⁵ Here again we face the civil liberty concerns of continuous government access to personal information that potentially goes beyond the scope of the initial search,²¹⁶ a concern made substantially worse by the fact that the source of these samples is presumed innocent.

Although "a large proportion of charges (fully half for felony assaults) are eventually dismissed,"²¹⁷ most states do not allow for automatic expungement of the DNA profile or sample.²¹⁸ Only a handful of the states that mandate the collection of DNA from arrestees require expungement of the DNA profile if the charges are dismissed.²¹⁹ Many states allow non-convicted arrestees to seek expungement of their DNA profiles from the database,²²⁰ but the procedures for getting these profiles expunged are not simple.²²¹ In several states, the exonerated arrestee or offender must initiate the expungement, and only one state explicitly requires that he or she be informed of the right to expungement.²²² California's process is particularly difficult: the request for expungement must be made with the trial court, DNA laboratory, and prosecutor. Moreover, the state can

212. *Id.*

213. See *supra* note 156 and accompanying text.

214. Edward J. Imwinkelried & D.H. Kaye, *DNA Typing: Emerging or Neglected Issues*, 76 WASH. L. REV. 413, 423 (2001) (quoting *Davis*, 394 U.S. at 727).

215. SIMONCELLI & KRIMSKY, *supra* note 188, at 7.

216. See *supra* text accompanying notes 169–73.

217. Weiss, *DNA Bank*, *supra* note 24, at A6.

218. Rothstein & Talbott, *supra* note 50, at 159.

219. See *id.* at 158; see also TEX. GOV'T CODE ANN. § 411.1471 (Vernon 2009); VA. CODE ANN. § 19.2-310.2:1 (West 2009).

220. Troy Duster, *Selective Arrests, an Ever-Expanding DNA Forensic Database, and the Specter of an Early-Twenty-First-Century Equivalent of Phrenology*, in DNA AND THE CRIMINAL JUSTICE SYSTEM 315, 328 (David Lazer ed., 2004); SETH AXELRAD, AM. SOC'Y OF LAW, MED. & ETHICS, SURVEY OF STATE DNA DATABASE STATUTES 4 (2004), http://www.aslme.org/dna_04/grid/guide.pdf.

221. Weiss, *DNA Bank*, *supra* note 24, at A6; see also Duster, *supra* note 220, at 328. Some states have expungement procedures that include the biological sample. Rothstein & Talbott, *supra* note 50, at 158.

222. Rothstein & Talbott, *supra* note 50, at 159.

retain the biological sample for as long as two years or until law enforcement tells the state laboratory that the individual is no longer a suspect.²²³ Thus, at best, exonerated arrestees face the burdensome possibility of seeking the removal of this data, a right of which they may be unaware;²²⁴ at worst, they have no option to eliminate this data in some jurisdictions, raising serious privacy concerns.

3. Familial Searching

As we've seen, DNA profiling poses a set of privacy challenges.²²⁵ It is against the backdrop of these privacy threats that I turn to familial searching, which itself threatens the privacy interests of the person whose samples are in the database and the interests of individual family members.

An initial concern is that the offender or arrestee whose sample partially matches the crime scene evidence becomes a kind of "genetic informant" leading law enforcement to his family.²²⁶ Whether there are any constitutional limitations on the government's ability either to search for a partial match or to obtain the identity of the pivot person once a partial match is found is uncertain.²²⁷ But even if constitutional, these searches raise various privacy issues for the offender. Often the police will need to question the offender or arrestee to discover who his or her relatives are. As a result, the offender or arrestee becomes the "pivot" person, the one "pivotal to both the receipt and provision of information, from and to the police."²²⁸ In addition to any

223. *Id.* (citing CAL. PENAL CODE § 297 (West 2005)).

224. Wah, *supra* note 36, at 939.

225. See *United States v. Kincade*, 379 F.3d 813, 873 (9th Cir. 2004) (Kozinski, J., dissenting) (noting how, with such mission creep, "[t]he fishbowl will look like home"); Grimm, *supra* note 60, at 1175 (suggesting that "[t]his progressive growth increasingly threatens the privacy of the innocent"); see also Liu, *supra* note 167, at 109–12 (describing the problem of secondary use of genetic information and how it relates to familial searching).

226. Haimes, *supra* note 36, at 269, 276 (crediting Robin Williams with this phrase); cf. Williams & Johnson, *supra* note 31, at 244 (noting that familial searching will "bring the police into contact with a number of individuals who have not been prosecuted for a recordable offense, who will have no criminal record, and who are subject to interview only because they are genetically related to someone whose profile is on the NDNAD").

227. One commentator argues that it may not be constitutionally prohibited to search for partial matches, but she suggests that "Fourth Amendment analysis seems appropriate where law enforcement requests the identity of a pivot after a partial or familial match has been found." Gabel, *supra* note 51, at 37. She argues that even though offenders have "a minimal interest in their genetic information after conviction, the situation here has nothing to do with the reasons surrounding the offender's conviction" and therefore probable cause should be required to disclose the pivot person's identity with respect to a crime he is clearly innocent of. *Id.* She notes that some of the state guidelines for familial searching "seem to satisfy the strictures of probable cause." *Id.*

228. Haimes, *supra* note 36, at 269, 276 n.64 (observing parallels between the person in clinical genetic testing who is the first person diagnosed with an inherited condition and the

guilt or sense of culpability that the pivot person might feel in unintentionally exposing family members to law enforcement surveillance,²²⁹ he might also fear repercussions such as ostracization or loss of position and standing within the family.

More directly threatening to privacy is the possibility that familial searches may reveal personal information about the “informant” beyond just his identifying DNA. Relatives may not know of the offender’s conviction or, even more likely, of the arrestee’s arrest.²³⁰ While a conviction is technically public knowledge, it may be information hidden from some family members, which can be exposed by efforts to contact family members after discovering a partial match. In the case of arrestees, these concerns are significant. The arrestee may ultimately end up being exonerated, yet the shadow of an arrest, revealed to relatives who might not have otherwise known, will forever hang over them.

In addition, familial searches require the police to discover information about the pivot person’s family members. In many ways, this is more personal than one’s DNA fingerprint.²³¹ While many of us may not hesitate to disclose this information, some may be reluctant to do so when their genetic relationships are not the same as their social relationships.²³² Children may be adopted or conceived via assisted conception using donated sperm and/or eggs or through an adulterous relationship. Conversely, genetic relationships may exist where we don’t expect them. Someone may have a genetically related child who is not one’s social child if, for example, the child was placed for adoption, is illegitimate, or was conceived by the donation of one’s egg or sperm. In addition, a child born of incest may be both child and sibling to his mother. In other words, in some instances, the presumptions about genetic and social relatedness may be wrong — some individuals may not be genetically related and others may be genetically related in ways that are unknown or unexpected.

Sometimes, the disconnect between genetic and social relatedness is shrouded in secrecy. Parents may not want to disclose the fact that a

starting point for genetic testing of family members); *see infra* text accompanying notes 231–41.

229. Haimes, *supra* note 36, at 269.

230. *See* Williams & Johnson, *supra* note 31, at 244–45.

231. According to Solove, the family holds a special place in the privacy debate for “[t]oday, we often view the family as an institution of intimacy, where a nuclear family lives together in the home and has (or strives toward) a loving relationship.” SOLOVE, *supra* note 158, at 51. Moreover, although some aspects of law enforcement may know who an offenders’ family members are, the sheriff or police office probably doesn’t. Murphy, *supra* note 62, at 24.

232. Williams & Johnson, *supra* note 31, at 244 (noting the problems that arise when law enforcement requests the naming of relatives given that “genetic” and “social” relatedness do not perfectly overlap); *see also* Liu, *supra* note 167, at 122–24 (describing the problem of unsolicited knowledge raised by familial searching).

child has been adopted or born through assisted conception.²³³ And often adultery or incest is a dark secret. Discoveries about these hidden facts are far more personal and potentially stigmatizing than information about one's DNA fingerprint. An offender, for example, may not want it known that his legal and social son, conceived through artificial insemination, is not his biological son. Similarly, an offender may not want to mention that he has an illegitimate child or that his child was conceived through incest.²³⁴

When investigators ask the "partial match" who his family members are, it is unclear whether he is compelled to answer.²³⁵ Some question the legal obligation to help police investigators when a partial match essentially disqualifies the individual as a suspect, even if the partial match suggests that a biological relative may be a suspect.²³⁶ One commentator suggests that the partial match has an option to leave or refuse to answer the questions, invoking his or her Fourth Amendment rights.²³⁷

While not likely to be compelled under the law to share this information, offenders may nevertheless share the information due to ignorance or because they feel they have no real choice.²³⁸ In some instances, the pivot person may not know or understand that sharing names of family members could place the family at risk for police surveillance or that familial searching could uncover unexpected genetic ties or a lack thereof. If police explain that they are conducting a familial search and describe its basic principles, the partial match may not want to share information about certain family members for fear

233. Historically, adoption and artificial insemination by donor have been shrouded in secrecy and state action has supported this secrecy. Haimes, *supra* note 36, at 265–66. Norms are changing to some extent, however. The trend has been toward open adoptions in the United States, and several other countries have prohibited anonymous sperm donation. See Sonia M. Suter, *Giving in to Baby Markets*, 16 MICH. J. GENDER & L. 217, 263 (2009). The American Society for Reproductive Medicine, for example, encourages parents to disclose to their child that the child was conceived with the use of donor gametes. Ethics Comm. of the Am. Soc'y for Reproductive Med., *Informing Offspring of Their Conception by Gamete Donation*, 81 FERTILITY & STERILITY 527, 527 (2004). Nevertheless, many families still hide the fact of adoption or assisted conception to create notions that their nuclear family fits the traditional model of rearing parents being the same as genetic parents. Suter, *supra*, at 261, 264. Haimes points out that there are essentially countervailing trends in this area. One trend is moving toward "greater recognition of the importance of non-biological relationships (such as in adoption, assisted conception, surrogacy, step-families)" and the other emphasizes "greater weight attached to the sharing of DNA as fundamental to the definition of family relationships." Haimes, *supra* note 36, at 267.

234. See Haimes, *supra* note 36, at 269; see also Williams & Johnson, *supra* note 31, at 244.

235. Greely et al., *supra* note 24, at 254.

236. Williams & Johnson, *supra* note 31 at 244.

237. Wah, *supra* note 36, at 938 (observing that the person is free "to leave or to refuse to answer any of the investigator's questions." As long as there is no coercive intimidation to imply that leaving is not an option, there is no unlawful detention under the Fourth Amendment).

238. See *infra* text accompanying notes 268–74.

that discoveries about the truth of the “social” family will be revealed.²³⁹ In other cases, however, the partial match may share the information for fear that the police could otherwise learn about the family members and that failing to identify them could draw suspicion upon the relatives.

Just as familial searching may expose some of the pivot person’s personal information, it may also reveal information about which the “informant” has been unaware. For example, it may uncover the fact that an offender’s son is not biologically related to him, exposing possible adultery on the part of his partner or the use of a sperm donor. Or it may reveal that the offender was conceived through incest. Depending on how law enforcement handles this information, the “informant” could discover secrets about himself that have long been hidden.²⁴⁰

Professor Greely argues that disclosures of these genetic family secrets could only occur if law enforcers actually communicated such facts outright.²⁴¹ Whether or not police would disclose such information at all and whether they would do so intentionally is an open question. Police might, in some instances, wield these secrets as tools to try to elicit cooperation, divulging the information to the pivot person and threatening to share it with others unless the relative cooperates. Alternatively, the follow-up investigations might inadvertently expose these secrets. Investigators might state that they do not need to talk to a particular relative because he or she is not genetically related. Even their actions — demonstrating an interest in testing one relative and not another — might hint that certain relatives are not genetically related to the partial match. Given that familial searching is relatively new, rarely done in the United States, and virtually unregulated by formerly established procedures,²⁴² “very little is known . . . about what actually happens in practice in familial searching.”²⁴³

239. See Williams & Johnson, *supra* note 31, at 244.

240. See Haimes, *supra* note 36, at 269.

241. Greely et al., *supra* note 24, at 255; See also Jules Epstein, “Genetic Surveillance” — *The Bogeyman Response to Familial DNA Investigations*, 2009 U. ILL. J.L. TECH. & POL’Y 141, 165. Greely correctly asserts that the possibility that two siblings are not genetically related “cannot be conclusively disproved by existing DNA analysis with CODIS markers without information from a third person who is related to at least one of the two . . .” *Id.* He does concede, however, that it would be very unlikely for two siblings not to share any alleles. *Id.* Moreover, crime labs may well have more than one sample of the offender’s relatives, some of whom would be genetically related, so it would be possible to discern with some high degree of confidence that a putative genetic sibling was not in fact biologically related. Moreover, putative parent-child relationships could be definitely disproved with DNA profiles.

242. Wah, *supra* note 36, at 926–29 (describing the varied and incomplete regulations in most jurisdictions). Even in England, where familial searching has been done most widely, there are “conspicuous uncertainties about many of these matters,” Williams & Johnson, *supra* note 31, at 245. Additionally, in the U.K., there is no public dissemination of “the circumstances under which such searches will be carried out” or of how their results will be

Of course, DNA familial searches do not present the only, or even the greatest, risk that police surveillance might expose familial secrets. More ordinary physical searches of homes, documents, or computers may also uncover similar kinds of information, demonstrating one of the risks of collateral harms that can arise with police investigations generally.²⁴⁴ The potential unveiling of familial secrets — as well as the facts of one’s arrest — through familial searching (or other investigations) threatens privacy in a few ways. First, when it exposes intentionally hidden facts, it violates informational privacy. As suggested earlier, informational privacy interests can be central to personhood interests and the formation of one’s identity.²⁴⁵ Privacy allows individuals to create sanctuaries in which they can explore certain aspects of their identity without the threat of destroying other aspects of their identity. As Richard Warner has pointed out, our identity is constructed in part from the multiple social roles we play, some of which are not always in harmony.²⁴⁶ Many of the decisions individuals make privately may be controversial to, and disapproved of by, many members of society. Finding commonality as to what kinds of behaviors are acceptable, moral, or appropriate is unlikely.²⁴⁷ The erosion of privacy therefore threatens unwanted disclosures about aspects of someone’s life that could lead to loss of employment or social ostracization.²⁴⁸ Privacy protects against these harms. It allows us to construct a world in which individuals are not exposed to public scrutiny about matters that do not influence their abilities to perform or fulfill the expectations of public roles.²⁴⁹

“integrated into existing investigative procedures” because the agreed upon procedures are “operationally sensitive.” *Id.* at 243.

243. Haimes, *supra* note 36, at 272.

244. One of the points of this Article, however, is that there are ways to cabin the risks of the collateral harms caused by familial searches. *See infra* Part V.B. Whether there are equally effective means to limit the collateral harms of other kinds of police searches is not clear. Several searches by my research assistant and library liaison yielded virtually nothing on that precise issue. *But cf.* Darryl K. Brown, *Third-Party Interests in Criminal Law*, 80 TEX. L. REV. 1383 (2002) (addressing the collateral harms to third parties that arise in punishment and sentencing, but not in police searches or investigations).

245. *See supra* text accompanying notes 159–68.

246. *See* Richard Warner, *Surveillance and the Self: Privacy, Identity, and Technology*, 54 DEPAUL L. REV. 847, 856–58 (2005).

247. *Id.* at 858 (“[The appropriate view of social organization] takes deep and unresolvable differences on matters of fundamental significance as a permanent condition of human life.”) (citing John Rawls, *Kantian Constructivism in Moral Theory*, 77 J. PHIL. 515, 542 (1980)).

248. *Id.* at 857.

249. It allows, for example, “the exemplary elementary school teacher to combine that activity with whatever private passions the teacher wishes to indulge” including “a passion for pornography.” *Id.* at 857–58. Obviously there must be limits to privacy. Some information about personal behavior may be deemed highly relevant to one’s capacity to perform in certain areas. To return to the teacher example, we may not want a world in which all passions remain private. Pedophilic tendencies may be just the sort of behavior we would not want to be kept hidden when we make judgments about who should be teachers and who

Second and equally relevant to the identity aspects of privacy are the pivot person's discovery of previously unknown genetic connections or the absence of genetic connections. As Erica Haimes has argued, "issues about *identification* in forensic work have the potential to have a profound impact on matters of *identity* for individuals and families."²⁵⁰ Learning, for example, that one is not in fact the biological child of his legal and social father or that one's sister is not just a sibling, but also a biological parent will likely have a powerful effect on self-definition and identity, particularly if we understand self-definition in terms of our relationships and communities.²⁵¹ Unexpected revelations of these genetic secrets reframe one's role and position in a family²⁵² and will necessarily alter aspects of self-definition. While knowledge of our genetic connections (or lack thereof) are not, and should not be, everything in self-definition,²⁵³ this information is deeply relevant to our understanding of how we are connected to others and therefore to relational self-definition.

One may argue that revelations of genetic secrets through familial searching (or other police investigations) can complete the identities of the pivot person (or the family members who discover these secrets) by filling in missing pieces and correcting misconceptions regarding one's identity. But this kind of reshaping of identity is very sensitive and potentially risky if done through law enforcement mechanisms. Similar issues of identity arise in the context of clinical genetics. Someone may know from family history, for example, that she is at risk for a late-onset condition like Huntington's disease, a neurodegenerative disorder for which there is no cure or treatment, and which is ultimately fatal.²⁵⁴ Although a genetic test is available to

should not. Indeed, we have reached some societal consensus about the value of "outing" convicted pedophiles not only for decisions about roles like teachers, but to the public at large. Dan Markel et al., *Criminal Justice and the Challenges of Family Ties*, 2007 U. ILL. L. REV. 1147, 1153.

250. Haimes, *supra* note 36, at 269 (noting also "that genetic connections carry much cultural symbolic weight that goes beyond the immediate significance of their material reality, even though that symbolism plays out in a number of different ways").

251. Under this conception of identity, the self is understood in terms of the community, history, and culture of which she is a part. See ALASDAIR MACINTYRE, *AFTER VIRTUE: A STUDY IN MORAL THEORY* 217 (2d ed. 1984) (arguing that personal identity must be understood in terms of "a character abstracted from a history"); MICHAEL J. SANDEL, *LIBERALISM AND THE LIMITS OF JUSTICE* 150 (2d ed. 1998); Shlomo Avineri & Avner de-Shalit, *Introduction*, in *COMMUNITARIANISM AND INDIVIDUALISM* 1–3 (Shlomo Avineri & Avner de-Shalit eds., 1992); Suter, *supra* note 156, at 772–73; see also Gaia Bernstein, *Accommodating Technological Innovation: Identity, Genetic Testing and the Internet*, 57 VAND. L. REV. 965, 975–79 (2004) (contrasting two versions of life-narrative identities — "the liberal meta-narrative" and "the communitarian meta-narrative").

252. Haimes, *supra* note 36, at 269.

253. See Suter, *supra* note 234, at 223.

254. Haimes, *supra* note 36, at 270. Because it is an autosomal dominant disease, the children of an affected individual face a 50% risk of inheriting the gene and developing the disease.

determine whether someone has the Huntington's disease gene, the genetics community has been reluctant to make the test available without full genetic counseling and a psychological evaluation to ensure that the individual has carefully considered how much information he or she wants and can handle.²⁵⁵ Often, patients decide after this counseling that they do not want this information after all. If someone decides to take the test, a careful protocol has been established for the delivery of the results, including the setting, the timing, and the necessary support system.²⁵⁶ The consensus in the genetic counseling community is that all genetic information is not necessarily beneficial, and in some instances may even be toxic.²⁵⁷

Although learning that one has a gene for a neurodegenerative disease is clearly not the same as discovering an unexpected genetic relationship or lack thereof, both discoveries have the potential to affect identity in important ways.²⁵⁸ Similar care and counseling would be helpful if one's identity were redefined by the disclosure of these genetic secrets through familial searches. Since law enforcement is far less nurturing than genetic counseling, it is not the ideal environment for such disclosures; as I shall discuss in Part V, police disclosures might actually be harmful.²⁵⁹

As we've seen, DNA databases and familial searches threaten various aspects of the privacy interests of those whose samples are in the database. Even if we assume that the majority of courts are correct that the privacy and civil liberty interests of offenders are sufficiently minimized to justify the creation of DNA profiles, the long-term retention of samples containing highly personal genetic information poses serious privacy risks. Such retention leaves open the possibility that the government may be able to access information well beyond its explicit law enforcement needs. This risk is especially troubling in the many jurisdictions where there are inadequate restrictions on the mining of such data. Far more troubling is the collection of samples from arrestees who have not yet been, and may never be, convicted, and therefore have not forfeited any informational privacy or liberty inter-

255. David Craufurd & Audrey Tyler, *Predictive Testing for Huntington's Disease: Protocol of the UK Huntington's Prediction Consortium*, 29 J. MED. GENETICS 915 (1992). These protective measures have been implemented because of the possibility for both positive and negative results to have a significant effect on one's sense of self and ability to cope. Marlene Huggins et al., *Predictive Testing for Huntington Disease in Canada: Adverse Effects and Unexpected Results in Those Receiving a Decreased Risk*, 42 AM. J. MED. GENETICS 508, 508 (1992); Janet K. Williams et al., *Redefinition: Coping with Normal Results from Predictive Gene Testing for Neurodegenerative Disorders*, 23 RES. NURSING & HEALTH 260, 261 (2000); see also Rosen, *supra* note 47, at 52 (observing that not all information is beneficial).

256. Craufurd & Tyler, *supra* note 255.

257. See Sonia Mateu Suter, *The Routinization of Prenatal Testing*, 28 AM. J. L. & MED. 233, 233 (2002).

258. See Williams et al., *supra* note 255.

259. See *infra* text accompanying notes 514–16.

ests. Finally, familial searches raise additional privacy concerns by potentially revealing personal information about the pivot person's conviction and/or arrest as well as hidden familial relationships, which may expose secrets or reshape the partial match's identity. As we shall see in the next Section, many of these concerns and others are present with respect to the privacy interests of relatives, whose only connection to an investigation is their genetic relatedness to the partial match.

B. Privacy Interests of the Relatives

While courts and some of the public may be relatively unsympathetic to the privacy and liberty intrusions that DNA databases and familial searches impose on convicted offenders, the innocent relatives exposed to law enforcement surveillance through familial searches may generate more sympathy. As many have noted, the "informant's" relatives become suspects without a recordable offense, simply because of genetic relatedness.²⁶⁰ Or, to put it more hyperbolically, law enforcement might find "guilt by relation" via familial searches.²⁶¹ In short, familial searching "effectively increases police scrutiny and interest in people based on their relatives' past involvement with the criminal justice system."²⁶²

The fact that the DNA identification of one person can potentially bring police officers to the doors of his relatives to ask questions about their genetic relationship to the offender (or arrestee) and their whereabouts at the time of the crime might be troubling enough. Police might also question friends, neighbors and co-workers in ways

260. See Greely et al., *supra* note 24, at 256; Williams & Johnson, *supra* note 31, at 244; Nakashima, *supra* note 118; Grimm, *supra* note 60, at 1189. As Michelle Hibbert writes:

Gathering information about a databanked criminal's sibling runs afoul of the justification that databanked criminals, by virtue of being criminals, have surrendered a degree of privacy and, therefore, it is acceptable to have their genome digitized for all law enforcement officers to share. . . . But where a law enforcement agency, either purposefully or incidentally, gathers information about a non-banked individual by comparing a DNA artifact to his or her sibling's profile digitized in the system, the state is intruding on the privacy of an individual who likely has not committed any act warranting this level of genomic intrusion.

Hibbert, *supra* note 7, at 785–86. For the relative who turns out to be the perpetrator of the crime, of course, they have done something, in addition to being related to the "informant," that has led to their being investigated. But in the vast majority of instances, a great many individuals will be investigated who are in fact innocent.

261. Lina Alexandra Hogan, Note, *Fourth Amendment — Guilt by Relation: If Your Brother is Convicted of a Crime, You Too May Do Time*, 30 W. NEW ENG. L. REV. 543 (2008).

262. Greely et al., *supra* note 24, at 255. This is particularly troubling when familial searching is used to produce "a large pool of potential relatives of a suspect whose guilt may not always be corroborated . . . by other intelligence information." Williams & Johnson, *supra* note 31, at 243.

that tarnish the relative's reputation. And even if the relative's name is ultimately cleared of suspicion, nothing requires law enforcement to inform the friends, neighbors and co-workers that the relative is innocent.²⁶³ Living under a cloud of suspicion, even if temporary and even when dispelled, "has the potential to disrupt a career, destroy a marriage, or ruin a life."²⁶⁴ Even more intrusive would be the practically inevitable request by the police for a blood sample or cheek swab for DNA analysis.²⁶⁵ After all, without the analysis of the genetic samples of people related to the partial match, the full value of familial searches cannot be realized.²⁶⁶ All of these actions imply that the relative is a suspect or, at least, a person of interest, which itself can be threatening, intimidating, and intrusive. At best, such an investigation is a hassle or form of harassment. At worst, it violates the relative's privacy interests by subjecting them to a "lifetime [of] genetic surveillance."²⁶⁷

In addition, investigations based on presumed genetic relatedness may feel coercive to family members. While police likely cannot compel a relative to donate samples simply on the basis of a genetic link to a convicted felon,²⁶⁸ the police may put pressure on the relative to do so.²⁶⁹ Family members may not understand that they have the right to refuse; likewise, they may not understand the full implications of agreeing to give a sample to the police.²⁷⁰ Finally, they may believe that refusing to assist a police investigation would seem suspicious and be viewed as evidence of guilt. The potentially coercive effect of

263. Murphy, *supra* note 62, at 25–26.

264. *Id.* at 26 (noting the indignities suffered by Richard Jewell, Stephen Hatfill, and the Duke Lacrosse team, who were wrongly identified, respectively, as the Atlanta bomber, the anthrax mailer, and rapists).

265. Police might not request samples if the interview offers evidence that the person was not at the scene of the crime. But given the fact that they are looking for a partial match, they may be far more inclined to examine the DNA regardless of statements made by the relative, especially before they are verified.

266. Grimm, *supra* note 60, at 1172.

267. Frederick R. Bieber et al., *Finding Criminals Through DNA of Their Relatives*, 312 SCIENCE 1315, 1316 (2006); see also Williams & Johnson, *supra* note 31, at 244 (describing it as "request surveillance"); Grimm, *supra* note 60, at 1172. One commentator critiques the term "lifelong surveillance," arguing first that the term "'surveillance' is itself a misnomer, as no one is watching or re-testing the profile once it is collected." Epstein, *supra* note 241, at 164. Second, he believes the term is disproportionate because familial searching will only occur a limited number of times. *Id.*

268. Wah, *supra* note 36, at 941. One commentator suggests that whether a familial search "could give rise to probable cause such that the government could compel a DNA sample from a target" is a "murkier subject." Gabel, *supra* note 51, at 39. She suggests that some case law suggests that "in order to compel a target to submit a DNA sample there needs to be a 'nexus' [like corroborating information beyond the familial search] between the target and the source." *Id.* at 41.

269. See *supra* text accompanying notes 238–39.

270. Frederick R. Bieber & David Lazer, *DNA Sweep Must Be Accompanied by Informed Consent*, PROVINCE TOWN BANNER, Jan. 20, 2005, available at www.hks.harvard.edu/davidlazer/files/papers/Lazer%20&%20Bieber%20DNA%20Sweep.pdf.

being asked to give samples to prove one's innocence in this scenario is not unlike the coercive effects of dragnet searches.²⁷¹ One's failure to cooperate may lead the police to pursue more aggressive measures to achieve compliance, including arrest.²⁷² And once relatives "voluntarily" submit samples in response to requests or coercion, there is no legal requirement that law enforcement analyze the samples quickly. Instead, they could "get lost in a yearlong backlog during which the suspect's name is muddied or tarred."²⁷³ While there likely is no constitutional violation in questioning relatives and requesting their DNA samples, familial searching raises serious policy questions and ethical issues that law enforcement and society did not consider when DNA profiling was first implemented.²⁷⁴

One could argue these are not uniquely serious privacy threats. It is, after all, possible for someone without a recordable offense to become a suspect for reasons just as fortuitous as being genetically related to a convicted offender. One may own a car that fits the description of the offender's getaway, or one may resemble the assailant. In fact, one can become a suspect by resembling the assailant precisely *because* one is related to the assailant.²⁷⁵ Someone can also become a suspect after the police have searched one's home based on a warrant related to a family member, which can lead the police to discover incriminating evidence.²⁷⁶ Whether we should limit the extent to which familial ties can be used in criminal investigations is a question that has not often been analyzed.²⁷⁷

Erin Murphy and Jennifer Mnookin argue, however, that familial searches are discriminatory in a way that these other searches aren't because they "unjustly distinguish between innocent persons related

271. See, e.g., LORI ANDREWS & DOROTHY NELKIN, *BODY BAZAAR: THE MARKET FOR HUMAN TISSUE IN THE BIOTECHNOLOGY AGE* 102–03 (2001); Rothstein & Talbott, *supra* note 50, at 156.

272. Stephen Mercer, Presentation at the Genetic Privacy, DNA Databasing & Familial Searching Symposium (Mar. 17, 2008).

273. Murphy, *supra* note 62, at 26.

274. See Scott Michels, *Using a Relative's DNA to Catch Criminals*, U.S.NEWS.COM, Aug. 3, 2006, <http://www.usnews.com/usnews/news/articles/060803/3data.htm>. One commentator suggests somewhat tentatively, however, that a relative might have a constitutional right not to have her genetic profile "exposed" simply because a relative has a DNA profile stored in a data bank. Murphy, *supra* note 62, at 41–43.

275. Greely et al., *supra* note 24, at 257 (describing this as a "molecular version of this kind of family resemblance").

276. See *id.* at 256 ("Being compelled to assist the criminal justice system, in this or any other way, may be annoying, but is common.").

277. *Id.* at 257 ("We have found no general rules, or even any discussion, of whether family relationships may be considered in criminal investigation[s]."). But see Markel et al., *supra* note 249, at 1151–53 (describing how "the state does not always impinge upon family members in the course of investigating or prosecuting all the crimes about which it knows" and sometimes "defers to the decision of family members to prioritize their duties to family over their duties as citizens," but arguing for "a 'Spartan presumption' against family ties benefits in the criminal justice system").

to convicted offenders and innocent persons unrelated to convicted offenders.”²⁷⁸ The justification for singling out innocent relatives of convicted offenders as opposed to innocent relatives of unconvicted individuals is the belief that the former group of innocent relatives is more likely to have committed a crime than the latter group.²⁷⁹ But these claims are based on data that relatives of convicted offenders are more likely to have been *incarcerated*. Such data argue not for familial searches, but for searching the *existing* databases of convicted offenders.²⁸⁰ In other words, familial searching should not be based on the presumption that relatives of convicted offenders are especially likely to have been convicted (we do not need familial searching for these relatives, we can just search the databases). Instead, it must be based on the presumption that convicted offenders are more likely to have relatives who have never been convicted but are more likely to commit crime than never-before convicted relatives of non-offenders.²⁸¹ In other words, the most relevant data to assess the likely benefit of familial searching would be the relative incidence of first-time offenders who had relatives with prior convictions and who didn’t. While there may be some data suggestive of a familial link of antisocial behavior, Murphy argues that we do not have sufficiently powerful data to show that conviction leads to a “strong likelihood that all relatives of convicted person should now be treated as the ‘usual suspects.’”²⁸²

An even more striking intrusion of privacy and civil liberty interests is the possibility that law enforcement will circumvent direct interrogations of family members or requests for DNA by obtaining a relative’s DNA from abandoned material.²⁸³ This is what police did when following up on the partial match between the DNA of convicted felon Anthony Dennard Brown and evidence from the 1989 rape and murder of a journalist in North Carolina. Police obtained the DNA from Dennard’s brother, Willard Brown, to show he was a perfect match, not by requesting the sample from him but by extracting DNA from his discarded cigarette butts without his consent.²⁸⁴ Alternatively, police might conduct indirect familial searches by surreptitiously collecting DNA from relatives of suspects to look for markers in the relative’s DNA that match those from the crime scene sample in order to link the suspect indirectly to the crime.²⁸⁵

278. Murphy, *supra* note 62, at 13; *see also* Jennifer Mnookin, *Devil in the DNA Database*, L.A. TIMES, Apr. 5, 2007, at A-23. *But see* Epstein, *supra* note 241, at 162–63.

279. *See supra* notes 72–75 and accompanying text.

280. Murphy, *supra* note 62, at 14.

281. *Id.*

282. *Id.* at 15.

283. *See* Grimm, *supra* note 60, at 1189.

284. *See supra* text accompanying notes 94–96.

285. *See supra* text accompanying notes 67–69.

Whether such “surreptitious sampling” violates the Fourth Amendment prohibition against unreasonable searches and seizures is unclear.²⁸⁶ First, it is not obvious that this would be deemed a search. Two conditions must be satisfied for such sampling to be considered a search: First, the suspect must have “a subjective expectation of privacy in” his genetic material that is collected from discarded objects like used cigarettes; and second, this expectation must be “objectively reasonable.”²⁸⁷ This may be difficult to demonstrate because discarded cigarette butts seem much like abandoned garbage for which one has no reasonable expectation of privacy. As the Supreme Court concluded in *California v. Greenwood*,²⁸⁸ “the warrantless search and seizure of garbage left for collection outside the curtilage of a home” is not prohibited by the Fourth Amendment.²⁸⁹ The fact that we routinely leave our DNA in public — through lost hair or skin cells or saliva left on a glass or cigarette²⁹⁰ — may further suggest we have no true expectation of privacy in our DNA.²⁹¹

The Supreme Court has never examined the constitutionality of surreptitious searches of DNA,²⁹² and the few lower courts that have considered the issue have found such actions constitutional. In *Commonwealth v. Cabral*,²⁹³ for example, a police officer, hired by the family of a rape victim to act as a private investigator, collected the spittle of a suspect who had expectorated on a public street. The DNA analysis implicated the suspect who was ultimately convicted of the rape.²⁹⁴ Applying Fourth Amendment analysis, the *Cabral* court reasoned that the defendant had neither a subjective nor a reasonable expectation of privacy in the DNA from his saliva. By spitting onto a public street, “he no longer manifested such a subjective expectation,”²⁹⁵ and when he “did not retrieve the fluid, he voluntarily abandoned” the reasonable expectation of privacy he would have

286. Imwinkelried & Kaye, *supra* note 214, at 436–40. *But see* Nakashima, *supra* note 118 (“If I get a sample from you and I don’t tell you I want to put it in the database, that violates the scope of the Fourth Amendment.” (quoting Barry Scheck, a commissioner on New York’s Forensic Science Review Board)).

287. Maclin, *supra* note 7, at 168 (quoting *California v. Greenwood*, 486 U.S. 35, 40 (1988)).

288. 486 U.S. 35 (1988).

289. *Id.* at 37; WAYNE R. LAFAVE ET AL., CRIMINAL PROCEDURE 142 (3d ed. 2000).

290. Nakashima, *supra* note 118.

291. Maclin, *supra* note 7, at 168–69; *cf.* *United States v. Dionisio*, 410 U.S. 1 (1973) (holding that an order to produce a voice exemplar is not a search under the Fourth Amendment).

292. *See State v. Athan*, 158 P.3d 27, 36–37 (Wash. 2007) (noting that “[t]here is no United States Supreme Court opinion directly addressing this issue” and that “no cases have been cited dealing with the voluntary relinquishment of a bodily fluid which is collected without force or invasion and analyzed by the government”).

293. 866 N.E.2d 429 (Mass. App. Ct. 2007).

294. *Id.* at 432.

295. *Id.* at 435.

otherwise had in his saliva and other bodily fluids.²⁹⁶ As a result, the court concluded that “the investigator . . . did not infringe on any reasonable expectation of privacy when he recovered the spittle from the street.”²⁹⁷

In *State v. Athan*,²⁹⁸ the surreptitious sampling involved a much more elaborate ruse after the police reopened the murder case of a thirteen-year-old girl that had been cold for twenty years. Rather than wait for the key suspect, Athan, to relinquish his saliva by spitting or throwing out a used bottle, the police posed as a fictitious law firm that invited Athan to join in a class action lawsuit. When he returned the class action authorization form, the police collected his saliva from the sealed return envelope. DNA analysis of this saliva led to his arrest and ultimate conviction for second-degree murder.²⁹⁹ Just as in *Cabral*, the Washington Supreme Court found no violation of the Fourth Amendment (or the analogous portion of the Washington State Constitution). Employing similar reasoning, the court found that because the police did not use force in obtaining the sample, Athan’s licking of the envelope was “analogous to a person spitting on the sidewalk or leaving a cigarette butt in an ashtray,” under which circumstances, “any privacy interest is lost.”³⁰⁰

In addition, the court equated Athan’s depositing of his saliva on the envelope with “[p]eople constantly leav[ing] genetic material, fingerprints, footprints, or other evidence of their identity in public places.”³⁰¹ “Physical characteristics which are exposed to the public,” such as “discarded genetic material . . . fingerprints or footprints left in a public place,” the court concluded, “are not subject to Fourth Amendment protection”;³⁰² thus, the police’s ruse to obtain Athan’s DNA was not deemed a search.³⁰³

In one sense, the reasoning of these courts is consistent with the fact that, although the “public exposure” rationale has been used to justify the collection of only limited kinds of information, identifying information has been included within these limits.³⁰⁴ Such information is exactly the kind that the police gleaned from an abandoned cigarette butt, the expectorant on the street, and the saliva on the envelope: a suspect’s identifying genetic profile.

296. *Id.* at 433.

297. *Id.* at 434. Concluding that there was no invasion of privacy, the court never addressed whether the police officer, who was on extended sick leave, was a State or private actor. *Id.* at 434 n.13.

298. 158 P.3d 27 (Wash. 2007).

299. *Id.* at 31–32.

300. *Id.* at 33–34.

301. *Id.* at 37.

302. *Id.*

303. *Id.*

304. Maclin, *supra* note 7, at 169 (noting that the “public exposure” rationale also justifies the collection of information about chemicals transferred from stolen money).

Nevertheless, some of the arguments made by the *Cabral* and *Athan* courts could be challenged. First, as noted earlier, the equation of DNA with physical characteristics like thumbprints is not precise.³⁰⁵ As a concurring judge noted in *Athan*:

A person's DNA . . . in his saliva, in a droplet of blood, or in a strand of hair, is not, as the majority suggests, equivalent to a person's thumbprint or the cadence of his voice — physical characteristics that truly speak to our identity only. Rather, a person's DNA goes beyond who we are to what we are.³⁰⁶

While this suggestion that our genes determine all that we are may be too genetically deterministic,³⁰⁷ it captures the idea that DNA does not merely identify, but also contains personal information.³⁰⁸ As one of the dissenters pointed out, *Athan*'s privacy interest was not just his identity, but also "his bodily integrity and his genetic information,"³⁰⁹ which implicates far deeper privacy interests than identifying information.³¹⁰ Although the statutes in Washington³¹¹ and many other jurisdictions limit the kind of analysis the government may perform on DNA mandatorily collected from convicted offenders, no such statutory restrictions exist for DNA collected in this surreptitious manner,³¹² essentially giving the government free reign to explore not just identifying information, but far more intimate genetic information and possibly other biological information.

In addition, the *Athan* court too readily concluded that licking an envelope was a voluntary relinquishment of *Athan*'s privacy interest in his *genetic information*. While no one forced him to lick the envelope, he did so believing it was going to an attorney, not to a police

305. See *supra* text accompanying notes 153–58.

306. 158 P.3d at 44 (Alexander, C.J., concurring).

307. See *supra* text accompanying note 168.

308. See *supra* text accompanying notes 153–57.

309. *Athan*, 158 P.3d at 49 (Fairhurst, J., dissenting).

310. See *supra* text accompanying notes 152–68. Mark Rothstein comes to a similar conclusion in applying the tort of intrusion upon seclusion to genetic stalking. Mark A. Rothstein, *Genetic Stalking and Voyeurism: A New Challenge to Privacy*, 57 U. KAN. L. REV. 539, 549–50 (2009). Rothstein suggests that "a 'dignitary' as opposed to 'property' view of intrusion, independent of any physical intrusion or the widespread disclosure of the test results, is based on the sensitive nature of the information revealed by DNA testing." *Id.* at 549. Moreover, Rothstein makes the observation that even though courts have generally been hostile to finding a reasonable expectation of privacy in public places, "[w]here special factors exist, recovery may be warranted, such as where a newspaper published a photograph of a woman who was exiting the fun house at a county fair and her skirt was blown up by air jets under the platform . . . or where there was persistent surveillance amounting to harassment." *Id.* at 549–50.

311. *Athan*, 158 P.3d at 51 (Fairhurst, J., dissenting).

312. See *infra* text accompanying notes 348–51 (noting that many state laboratories create undocumented databases that are unregulated by statute).

officer in search of incriminating evidence. In light of the attorney-client privilege, one could imagine that Athan felt especially confident that any information he provided the “attorney” purportedly seeking to represent him would not later be used as evidence against him.³¹³ In *Ferguson v. City of Charleston*,³¹⁴ the Supreme Court found it unconstitutional for the police to analyze “consensually extracted bodily fluids of pregnant patients” without the patients’ knowledge because, although the patients voluntarily relinquished the bodily fluids to the hospital, they had no expectation that the hospital would provide incriminating evidence against them.³¹⁵ Both doctor-patient and attorney-client relationships are relationships built on trust and confidentiality, which suggests that Athan and the patients in *Ferguson* had both subjective and objective expectations of privacy in the information contained within material they voluntarily submitted (the saliva on the envelope and the bodily fluids, respectively). As one of the *Athan* dissenters argues, the holdings in *Athan* and *Cabral* essentially allow the government to analyze the “DNA in anyone’s saliva, however obtained, as long as it was not directly from the person’s mouth, and use the information to construct a DNA database that includes both felons and nonfelons”³¹⁶ (and, I would add, those who have not been convicted, arrested, or may not even be suspects).

Although we may not always think about the fact that our DNA exists within our saliva, the popularity of crime shows like “CSI” may help emphasize this reality.³¹⁷ As a result, one might argue, we know that we place our DNA in the public domain when we throw out a cigarette butt or spit onto the street. But what about the unintentional and inevitable creation of a DNA trail simply by being in public? After all, through everything we do, “we leave behind a trail of genetic evidence: cells that are naturally shed over time,” whether we want to or not.³¹⁸ We can refrain from spitting or tossing out cigarette butts,

313. Athan made just such an argument, contending that “he reasonably relied on the detectives’ representations that they were attorneys, and thus he should be entitled to rely on the attorney-client privilege to protect his communications as a ‘private affair.’” *Athan*, 158 P.3d at 34. Because Athan had not objected “to the letter, or its contents, being admitted during the trial,” the court reasoned that it “need only decide if the saliva on the envelope flap is a ‘communication’ subject to protection by the attorney-client privilege.” Deciding that saliva is not a communication, the court concluded that it did not need to determine whether “an attorney-client relationship was even established.” *Id.*

314. 532 U.S. 67 (2001).

315. *Athan*, 158 P.3d at 52 (Fairhurst, J., dissenting) (citing *Ferguson v. City of Charleston*, 532 U.S. 67, 78 n.13 (2001)).

316. *Id.* at 49.

317. See Nakashima, *supra* note 118 (describing how DNA can be found from “saliva traces on a water glass”).

318. Imwinkelried & Kaye, *supra* note 214, at 437 (“Leaving a trail of DNA . . . is not a conscious activity.”); Joh, *supra* note 184, at 867 (“[L]eaving DNA in public places cannot be avoided.”); Rachel Ross, *A Trail of Genetic Evidence Follows Us All*, TORONTO STAR, Feb. 2, 2004, at D03.

but we cannot refrain from involuntarily shedding hair or skin cells in public unless we never enter the public domain. In those cases, it is difficult to speak of voluntarily making our DNA available.

Furthermore, whether one intentionally spits on the street or inadvertently sheds some hair cells, the necessity of using “specialized equipment” to analyze one’s DNA suggests that the relinquishment of genetic information in these contexts is *not* intentional or expected.³¹⁹ The involuntary shedding of cells hardly seems like a voluntary exposure of our DNA to the public in the way that we knowingly, and in a sense voluntarily, expose the soles of our shoes through footprints or the sounds of our voice through talking.³²⁰

The Supreme Court’s decision in *Kyllo v. United States*³²¹ addresses the impact of requiring special technology to gather information. In *Kyllo*, the Court determined that the novel thermal imaging technology used to scan a home for evidence that marijuana was being grown indoors with high-intensity lamps constituted a search under the Fourth Amendment.³²² It held that, when “the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a ‘search’ and is presumptively unreasonable without a warrant.”³²³

Although *Kyllo* deals with the use of advanced technologies to access otherwise unattainable information, it is potentially distinguishable from surreptitious DNA searches since the home has received special protection under the Fourth Amendment.³²⁴ Even so, the nonconsensual collection of bodily fluids can implicate similar privacy interests.³²⁵ Thus the rationale of *Kyllo* might apply to DNA analysis — especially of cells that were involuntarily shed — since DNA analysis is not yet in general public use and the results have generally been unknowable without physical intrusion.³²⁶ On the other hand, given that it is becoming easier to perform DNA analysis,³²⁷ it

319. *Athan*, 158 P.3d at 52 (Fairhurst, J., dissenting).

320. See James F. Van Orden, *DNA Databases and Discarded Private Information: “Your License, Registration and Intimate Bodily Details, Please”*, 6 N.C. J.L. & TECH. 343, 351–52 (2005).

321. 533 U.S. 27 (2001).

322. *Id.* at 27.

323. *Id.* at 40.

324. See, e.g., STEPHEN A. SALTZBURG & DANIEL J. CAPRA, *AMERICAN CRIMINAL PROCEDURE INVESTIGATIVE: CASES & COMMENTARY* 182 (8th ed. 2007) (noting that Justice Stevens’s majority opinion in *Payton v. New York*, 445 U.S. 573 (1980), “emphasized that the home has always been viewed as an especially private place”).

325. *State v. Athan*, 158 P.3d 27, 33 (Wash. 2007).

326. See Maclin, *supra* note 7, at 169.

327. See, e.g., Peter Aldhous & Michael Reilly, *Who’s Testing Your DNA?*, *NEW SCIENTIST*, Jan. 21, 2009, available at www.gtldna.com/NewScientistArticle.pdf (describing the ability of individuals to test partners for infidelity, surreptitiously, by sending samples of underwear to various labs, like Test Infidelity, and paying \$275 for DNA analysis); Amy

is possible to imagine a not-so-distant future when DNA analysis could be considered to be “in general public use.” Recently, the company 23andMe made available a genetic test that analyzes one’s ancestry and over 90 traits and diseases for only \$399.³²⁸ In addition, as DNA samples are increasingly obtained without any physical intrusion — but rather through traces of DNA found in shed hair or saliva on glasses, for example — the *Kyllo* rationale may ultimately fail to apply in this context.

Even if the Court were to find that “surreptitious sampling” constitutes a search, however, it may not necessarily violate the prohibition against suspicionless searches. First, the typical familial search may not be considered a suspicionless search because the partial match between the offender (or arrestee) and crime sample suggests a relative may be involved.³²⁹ The partial match alone would not likely satisfy the probable cause test — that there be a “fair probability that contraband or evidence of a crime will be found”³³⁰ — because the probability that a partial match indicates a genetic link between the offender (or arrestee) and the perpetrator of the crime varies may not be sufficiently high.³³¹ And even if the partial match was highly suggestive of a true familial link, it would not necessarily demonstrate probable cause with respect to a *particular* relative, or “individualized suspicion.”³³² Of course, indirect familial searches — where the police clandestinely collect DNA from the relative of a suspect as a way to assess whether the suspect’s DNA matches the crime scene sample³³³ — would be a search without individualized suspicion.³³⁴

Harmon, *My Genome, Myself: Seeking Clues in DNA*, N.Y. TIMES, Nov. 17, 2007, at A1 (describing the start-up company 23andMe, which analyzes one’s DNA for only \$1000).

328. Cf. Robert Pear, *Growth of Genetic Tests Concerns Federal Panel*, N.Y. TIMES, Jan. 18, 2008, at A12 (noting that consumers may also pay for a service that allows them to participate in research programs and share their genetic information with family members and friends).

329. As the Supreme Court has written:

The degree of individualized suspicion required of a search is a determination of when there is a sufficiently high probability that criminal conduct is occurring to make the intrusion on the individual’s privacy interest reasonable. . . . [T]he Fourth Amendment ordinarily requires the degree of probability embodied in the term ‘probable cause’

United States v. Knights, 534 U.S. 112, 121 (1981).

330. *Alabama v. White*, 496 U.S. 325, 330 (1990) (quoting *Illinois v. Gates*, 462 U.S. 213, 238 (1983)).

331. See *supra* text accompanying note 64–66.

332. See Grimm, *supra* note 60, at 1192.

333. See *supra* text accompanying note 67–69.

334. Of course, that doesn’t necessarily make a search invalid. In *Zurcher v. Stanford Daily*, 436 U.S. 547 (1978), for example, the Supreme Court upheld the validity of a search of the property of someone whom the police did not believe was implicated in a crime but on whose property the government had “probable cause to believe that fruits, instrumentalities, or other evidence of crime [was] located” *Id.* at 553. As the Court pointed out, the “critical element in a reasonable search is not that the owner of the property is suspected of

But even if surreptitious searches of family members were deemed suspicionless, the Court might nevertheless allow these searches under the special needs exception. It is difficult to gauge how the exception would apply to individuals who have not been convicted of crimes because the Court has not offered a coherent or consistent theory as to precisely what the exception requires.³³⁵ We have little guidance, for example, as to how this exception plays out with respect to mandatory collection of samples from arrestees. Some have argued that it should not apply because the search is clearly done for law enforcement purposes, as opposed to some other special need; the samples are directly available to law enforcement, and the police are directly involved in the search.³³⁶ On the other hand, some have argued that the administrative purpose of discerning true identities of arrestees would provide a basis for the special needs exception.³³⁷

While the Court could distinguish arrestees from the relatives of a partial match and therefore allow the suspicionless search of one and not the other, both sets of individuals are presumed innocent. Thus, one could apply the arguments for and against the special needs exceptions for arrestees to the surreptitious search of the relatives of partial matches. As a result, if the Court interprets the Fourth Amendment to allow arrestees to have their DNA searched without probable cause, a point over which the few courts to address this issue are divided,³³⁸ it may also allow surreptitious searches of family members of partial matches.

Rather than fully resolve the Fourth Amendment issues raised by these searches, I want to emphasize the current uncertainty as to whether the police may legally collect DNA from relatives clandestinely.³³⁹ The fact that law enforcement has the technological capacity

crime but that there is reasonable cause to believe that the specific ‘things’ to be searched for and seized are located on the property to which entry is sought.” *Id.* at 556. Whether there is “reasonable cause” to believe that DNA analysis of the relative of a suspect will show the suspect is the source of the crime scene DNA would, of course, be central to the analysis. *See supra* text accompanying notes 143–46 (discussing the special needs exception).

335. SALTZBURG & CAPRA, *supra* note 326, at 412 (suggesting that the jurisprudence in this area has led to contradictory lower court decisions); Maclin, *supra* note 7, at 170, 172 (finding no “overarching theory that clearly identifies which searches will satisfy the Court’s constitutional scrutiny”).

336. Maclin, *supra* note 7, at 178–81.

337. Maclin, *supra* note 7, at 181; *see Anderson v. Commonwealth*, 650 S.E.2d 702, 705 (Va. 2007) (reasoning that obtaining a DNA sample from an arrestee “is no different in character than acquiring fingerprints upon arrest” as part of the routine booking process).

338. *See supra* text accompanying notes 205–12.

339. It is worth pointing out that the great uncertainty about the Fourth Amendment validity of these kinds of searches may argue for protecting the privacy and civil liberty interests through the legislature rather than the courts. As Orin Kerr notes:

When technology is changing quickly, it is ideal for the law to change quickly along with it. Congress can legislate comprehensively, updating rules when technology changes. Congress can enact

to obtain our genetic profile, and any other personal genetic information, without our consent or even knowledge raises privacy and civil liberty concerns. Even more troubling is the uncertainty as to whether the Fourth Amendment allows familial searches to expose family members to the collection of and analysis of their DNA without their consent or knowledge, simply because they are related to convicted individuals or arrestees.³⁴⁰ To be sure, some state laws provide strong privacy protections of genetic information, prohibiting the analysis of someone's DNA without his or her consent.³⁴¹ But there is wide divergence in the degree of privacy protections.³⁴² Moreover, many privacy statutes have exceptions for law enforcement purposes, which could easily be construed to include DNA profiling of relatives as part of familial searching.³⁴³

much clearer rules, soliciting expert input and acting when the technology is still current. The absence of a case and controversy requirement allows Congress to set the best rule for current technology; in contrast, judicial efforts to hit a moving target force the courts to keep the law uncertain to maintain flexibility for future technological change.

Orin S. Kerr, *Panel VI: The Coexistence of Privacy and Security: Congress, the Courts, and New Technologies: A Response to Professor Solove*, 74 *FORDHAM L. REV.* 779, 783 (2005). Moreover, as he points out, "[i]f the court misunderstands the technology, the court usually will not know that until after the opinion is released and has become binding law. In contrast, Congress can reach decisions by seeking expert input, holding hearings, and receiving responses concerning proposed bills and statutory text." *Id.* at 783; see also *infra* text accompanying notes 449–50.

340. In discussing the recent trend of obtaining and selling celebrity DNA, Mark Rothstein points out:

[C]onstitutional case law is not directly applicable to the issue of genetic stalking. First, there is the matter of state (or governmental) action. Federal constitutional requirements under the Fourth and Fourteenth Amendments are relevant only when the government is conducting the search and seizure. Second, there are six states with constitutional privacy protections applicable to both public and private actors. Although these states prohibit unreasonable searches and seizures by both governmental and private actors, it is not clear whether taking and analyzing abandoned property would be considered unreasonable in these states. Finally, there is the matter of fashioning an appropriate remedy. In genetic stalking, often the person seizing the property will be the least easily identifiable and least solvent party. Consequently, aggrieved individuals and policy makers should look beyond constitutional search and seizure law to address the issue of nonconsensual genetic testing and publication of the results.

Rothstein, *supra* note 310, at 546.

341. See, e.g., New Mexico Genetic Information Privacy Act, N.M. STAT. ANN. §§ 24-21-3(A) (West 1998) ("[N]o person shall obtain genetic information or samples for genetic analysis from a person without first obtaining informed and written consent from the person or the person's authorized representative.").

342. See NCSL, STATE GENETIC PRIVACY LAWS (Jan. 2008), <http://www.ncsl.org/programs/health/genetics/prt.htm>.

343. See, e.g., N.M. STAT. ANN. §§ 24-21-3(C) (West 1998) (creating an exception to the prohibitions of genetic analysis without consent when such analysis is "to identify a person in the course of a criminal investigation by a law enforcement agency"). The recently en-

Even if we assume that the Fourth Amendment protects against unwarranted searches of relatives' abandoned DNA (a rather large assumption), familial searches still raise potential threats to privacy and civil liberties when a relative voluntarily provides a DNA sample to the police for genetic profiling. Just as we saw with arrestees, the long-term retention of the profile and/or sample raises a second set of privacy concerns apart from the initial collection of the samples.³⁴⁴ The fact that the partial match provides a rationale for the police to compare the relative's profile to the crime scene sample is irrelevant with respect to any other criminal investigations. Long-term retention of the relative's DNA *profile* would effectively place the relative under indefinite surveillance for all other crimes, which seriously undermines privacy and civil liberty interests by making the relative an object of continued police scrutiny. If the retention of an arrestee's DNA profile in the long-term database is problematic without a finding of guilt,³⁴⁵ the inclusion of relatives' profiles in the database simply because of their misfortune in sharing DNA with someone who has been convicted or arrested is similarly or even more troubling.³⁴⁶

In addition, an even greater threat to privacy is the long-term retention of the DNA *samples*, whether collected through legitimate surreptitious searches (if the Fourth Amendment allows it) or through voluntary donations of samples. Although the federal government does not allow the inclusion of some voluntary samples in the federal database,³⁴⁷ many state crime laboratories create undocumented databases that comprise voluntarily collected samples and presumably would also include DNA obtained surreptitiously. Often these samples are retained indefinitely.³⁴⁸ The government's long-term possession of such biological material increases the ease of governmental access to

acted Genetic Information Nondiscrimination Act treats genetic information as health information under HIPAA. Genetic Information Nondiscrimination Act of 2008, Pub. L. No. 110-233, § 105(a), 122 Stat. 881 (2008). HIPAA applies to specific covered entities, such as health plans, health providers, and health care clearinghouses, not to law enforcement agencies generally. OFFICE FOR CIVIL RIGHTS, DEPARTMENT OF HEALTH AND HUMAN SERVICES, SUMMARY OF THE HIPAA PRIVACY RULE 2-3 (2003), <http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/privacysummary.pdf>. Moreover, it contains exceptions for law enforcement purposes. *Id.* at 7.

344. Grimm, *supra* note 60, at 1172-73. See Rothstein & Talbott, *supra* note 50, at 158; *supra* text accompanying notes 213-24.

345. See *supra* text accompanying notes 216-17.

346. Wah is untroubled by the use of relatives' DNA in familial searching if they consent, arguing that if the actual perpetrator is later convicted, the innocent family member could not be implicated. Wah, *supra* note 36, at 941-42. But this does not acknowledge the fact that if the profiles are retained, the relatives are subjected to continued surveillance as long as the profile is in the database. Moreover, it doesn't acknowledge the fact that it may be a long while before the relative is actually shown to be innocent if law enforcement allows the relatives' samples to get lost in backlogs. As a result, the relatives may hang under a cloud of suspicion for some time. See *supra* text accompanying note 273.

347. DNA Identification Act of 1994, 42 U.S.C. § 14132 (2006).

348. Rothstein & Talbott, *supra* note 50, at 158; see also Nakashima, *supra* note 118.

a wealth of personal information contained in the tissues samples.³⁴⁹ When one considers the fact that the retention, use, and analysis of these samples are neither regulated nor formally recognized,³⁵⁰ the collection of relatives' DNA surreptitiously, or even with their consent, raises even greater privacy and civil liberty concerns since often nothing explicitly prohibits the mining of personal data from these samples. Unregulated databases that store important genetic and biological material that could potentially be accessed at any time raise the specter of "a society in which government may intrude into the secret regions of man's life at will."³⁵¹

As mentioned earlier, in some states, exonerated individuals have the right to have samples destroyed and records purged.³⁵² Unfortunately, this usually requires affirmative action on the part of the individual seeking to destroy his samples.³⁵³ Many people may not know this is their right or may not have adequate resources to ensure the destruction of their samples.³⁵⁴ Indeed, those whose DNA was collected surreptitiously likely would not even know there was a sample and DNA record that needed to be expunged. It seems inappropriate to put the burden of ensuring the destruction of samples on the part of individuals who have complied with law enforcement and who are innocent of wrongdoing or who do not even know their DNA was collected and analyzed. Without legal requirements that the government affirmatively purge the DNA records and destroy the actual samples upon discovery of an individual's innocence, we place the relatives at risk of constant surveillance and government access to deeply personal information that is unrelated to the crime that led police to the relative. Given that exonerated individuals clearly retain full privacy and liberty interests, this is a serious concern.

Finally, the same threats to identity that the pivot person faces from familial searches³⁵⁵ exist with respect to the individual relatives who are investigated as a result of partial matches. Just as a partial match's family secrets may be exposed,³⁵⁶ so may a relative's. And just as the pivot person may ultimately discover that he or she is not genetically related to a social family member,³⁵⁷ so might the individ-

349. See *supra* text accompanying notes 169–73.

350. Nakashima, *supra* note 118 (Some "states and localities maintain 'offline' DNA databanks of samples taken from victims or suspects never charged with a crime. . . . Such local databases 'have literally no oversight and regulation and yet are pushing the boundaries further than anyone could imagine.'"); see also Prof. Barry Scheck, Presentation at the Genetic Privacy, DNA Databasing & Familial Searching Symposium (Mar. 17, 2008).

351. See *supra* text accompanying note 198.

352. See *supra* text accompanying notes 219–24.

353. See *supra* text accompanying notes 221–24.

354. See *supra* text accompanying notes 221–24.

355. See *supra* text accompanying notes 240, 245–58.

356. See *supra* text accompanying notes 231–39.

357. See *supra* text accompanying notes 240–43.

ual relatives. As a result, all of the threats to identity and privacy interests discussed with respect to the partial match are present here; but they are intensified because the relatives have not been convicted and therefore have lost no expectations of privacy. As noted earlier, although we may worry whether secrets and deceptions in families are healthy for the individuals and families as a whole, probing around the edges of these secrets, even if inadvertently, through familial searches risks exposures in the most hostile kind of environment — criminal surveillance. The nature of these issues requires a kind of sensitivity and care that may well be lacking in the context of a police investigation, as we shall see in more detail in Part V.³⁵⁸ For all of these reasons, familial searching raises significant concerns about the privacy and civil liberty interests of the relatives of the partial match.

C. Family Privacy

In addition to threatening the privacy interests of the partial match and his or her relatives, familial searching poses privacy threats to the family as a whole. I intentionally distinguish the privacy interests of the individual relatives from the privacy interests of the family per se. In so doing, I am relying on a notion of family privacy that is less individualistic and more relational. Under this view, family privacy is not simply privacy as it applies to the individual in making decisions about the family, but instead privacy that protects the integrity of the family as an entity unto itself.

Although my focus is not on the constitutional dimensions of privacy per se,³⁵⁹ the Court's jurisprudence concerning family privacy offers some different visions of how we might conceptualize family privacy. Overall, the Court's description has tended to be individualistic, focusing on the right of the individual to make decisions concerning one's family free of governmental interference.³⁶⁰ This notion is really an expansion of individual autonomy as expressed in the context of intimate and close relationships. "It sees the family as a locus of expression for the individual and thus protects an individual's deci-

358. See *infra* Part V.B.3.

359. As Greely points out, it seems too great a leap "to go from constitutional protection from state interference for decisions about child-rearing or child-bearing to constitutional protection from state use of family resemblances in DNA in criminal investigations." Greely et al., *supra* note 24, at 257–58.

360. See, e.g., *Pierce v. Soc'y of Sisters*, 268 U.S. 510, 534–35 (1925) (recognizing that due process protects "the liberty of parents and guardians to direct the upbringing and education of children under their control"); *Meyer v. Nebraska*, 262 U.S. 390, 399 (1923) (noting that the liberty interest protected by the Due Process Clause denotes "the right of the individual . . . to marry, establish a home and bring up children").

sions with respect to familial relations against state interference.”³⁶¹ But the family is more than the sum of its parts, and exists as an entity in its own right with integrity independent of the integrity of each of the individual family members. I have suggested earlier that “family privacy can also be understood as a form of relational privacy, which protects the sanctity of the family by working to support the relationships that are constitutive of the family.”³⁶² Indeed, the Court’s description of “a private realm of family life which the state cannot enter,”³⁶³ is consistent with this relational conception of family privacy. While this idea may also support the notion that the government should not interfere with individual decisions concerning the family, it also seems to suggest the idea that the state may not ordinarily disrupt the integrity of the family as a whole. As I have suggested, this relational notion of familial privacy “would not only generally shield family decisionmaking from state interference, but would also evaluate state action in terms of its effect on the integrity of the family, tending to uphold state actions that cultivate family relationships and to prohibit those that do not.”³⁶⁴

With respect to familial searching, one risk to the integrity of the family is the added burden and disruption that investigations of relatives may impose on families already vulnerable because a member of the family has been convicted. These families may have already suffered financial losses through legal fees, theft, or the loss of a working member of the family. The family may be stigmatized. The integrity of the family may be disrupted because of the relative’s conviction, leaving other family members with possible feelings of loss, betrayal, and/or abandonment. In some cases, the convicted offender may even have caused harm to members of the family.³⁶⁵ Investigating other family members, simply because they are related to a convicted offender, can intensify the wounds, rifts, betrayal, and distrust within the family. In addition, it can create possibly lasting clouds of suspicion on other members of the family, which may never be eradicated.³⁶⁶ The fact that all of these intrusions are the result of a relative’s conviction may create or enhance rifts in relationships between the offender and other family members.³⁶⁷ If familial searches yield several partial matches, multiple families may be investigated and suffer these harms. At most, only one family will have a relative

361. Sonia M. Suter, *The “Repugnance” Lens of Gonzales v. Carhart and Other Theories of Reproductive Rights: Evaluating Advanced Reproductive Technologies*, 76 GEO. WASH. L. REV. 1514, 1549 (2008).

362. *Id.*

363. *Id.* (citing *Prince v. Massachusetts*, 321 U.S. 158, 166 (1994)).

364. *Id.* at 1550.

365. Murphy, *supra* note 62, at 27.

366. *See supra* text accompanying notes 263–64, 273.

367. Murphy, *supra* note 62, at 27–28.

who actually is the perpetrator of the crime. All of the other families will have endured the intrusiveness of the investigations and all that follows despite their complete innocence.

An additional threat to the integrity of the family is the potential of familial searching to uncover genetic secrets about the social family.³⁶⁸ Not only does this challenge the identities of the pivot person or his or her relatives by restructuring their understanding of their biological connections to others,³⁶⁹ it also has the potential to affect the integrity of the family as a whole. As some have suggested, if familial searches expose hidden facts about who is genetically related (or not) to whom, as well as the fact that secrets and possibly deception have existed within the family, they have the potential to fragment the family.³⁷⁰ At a minimum, these discoveries redefine the family. This literal and figurative redrawing of the family tree may affect the “moral economy,” upsetting the previously established roles with respect to finances, housing, power, loyalty, etc.³⁷¹ Such a reshaping of the family is potentially disruptive and destabilizing. At the extremes, those deceived by the family secrets might do harm, physically or emotionally, to those who deceived them, or perhaps even to those with whom the presumed genetic relationships no longer exist.

Families are unique and inevitably will react differently depending on the existing strengths or weaknesses of the family and the reactions of individual family members. Some will absorb these redefinitions and continue, with new identities, but largely intact. Others may be irreparably damaged by the shifting nature of relationships and the unveiling of family secrecy and deception. In addition, physical, emotional, or social harms may result as some members of the family react aggressively in discovering this new information about the family. How great a risk familial searches present to the integrity of families is an empirical question that depends on a number of factors: the percentage of such secrets among families; why and from whom the information was hidden; the surrounding circumstances that led to secrecy; the probability that police investigations will uncover such secrets; and whether and how law enforcement would reveal such information to the family.³⁷²

Once again the field of clinical genetics offers some insight into these problems. In the process of doing family tests, geneticists sometimes inadvertently discover misattributed paternity,³⁷³ which is esti-

368. See *supra* text accompanying notes 231–34, 240, 250–51.

369. See *supra* text accompanying notes 240, 245–58.

370. See Haimes, *supra* note 36, at 270.

371. D.H.J. MORGAN, FAMILY CONNECTIONS (1996).

372. See *supra* text accompanying notes 241–43.

373. Jean McEwen, *Genetic Information, Ethics and Information Relating to Biological Parenthood*, in 1 ENCYCLOPEDIA OF ETHICAL, LEGAL, AND POLICY ISSUES IN BIOTECHNOLOGY 356, 359–62 (Thomas H. Murray & Maxwell J. Mehlman eds. 2000);

mated to be as high as 10–30%,³⁷⁴ although more recent findings suggest the numbers vary considerably among communities and may be closer to 5% on average.³⁷⁵ The discovery that a child is not the biological child of the father poses a dilemma for genetic counselors: should this fact be disclosed, and if so, to whom? Surveys suggest that the genetics community has not reached a consensus as to how to handle these dilemmas. Some advocate full disclosure under the rationale that this best supports patient autonomy.³⁷⁶ Although revealing these inadvertent discoveries is consistent with the tendency to disclose a great deal of information in genetic counseling,³⁷⁷ many are reluctant to do so, fearing that it gives “insufficient allegiance to the integrity of the family unit.”³⁷⁸ Under this view, the genetic counselor has greater loyalty to the family as a whole than to any one member.³⁷⁹ In addition, many worry that some women (and their children), especially if the women are in abusive relationships or are otherwise powerless, might suffer physical, emotional, social and/or economic harm if such secrets were revealed in the clinical setting.³⁸⁰

While one may wonder about the integrity of a family built on deceptions and lies, forcing the unveiling of such secrets, even in a supportive and nurturing setting like genetic counseling, may not be advisable. Long-term relationships have not been established with the genetic counselor. As a result, she likely has only a superficial sense of the family dynamics and undoubtedly little to no knowledge of the circumstances surrounding the secrets. Without such knowledge, it is difficult to know how best to disclose such information, let alone whether unveiling the truth will be harmful to certain members of the family or the family as a whole.

For these reasons, many genetic counselors find ways around open disclosure of non-paternity. One survey found that, if asked by the putative father, two-thirds of geneticists from the United States

Haimes, *supra* note 36, at 270. The problem arises most typically when a child has a recessive genetic disease and genetic testing is done to establish the risk of recurrence. Haimes, *supra* note 36, at 270.

374. McEwen, *supra* note 373, at 360.

375. Steve Olsen, *Who's Your Daddy?*, ATLANTIC, July/Aug. 2007, at 36, 36–37 (describing reports of misattributed nonpaternity as low as 2% and as high as 30%).

376. U.S. PRESIDENT'S COMM'N FOR THE STUDY OF ETHICAL PROBLEMS IN MED. AND BIOMEDICAL AND BEHAVIORAL RES., SCREENING AND COUNSELING FOR GENETIC CONDITIONS: A REPORT ON THE ETHICAL, SOCIAL, AND LEGAL IMPLICATIONS OF GENETIC SCREENING, COUNSELING, AND EDUCATION PROGRAMS (1983) [hereinafter PRESIDENT'S COMM'N].

377. See Suter, *supra* note 257, at 243–44.

378. McEwen, *supra* note 373, at 361.

379. *Id.*

380. See DOROTHY C. WERTZ ET AL., GUIDELINES ON ETHICAL ISSUES IN MEDICAL GENETICS AND THE PROVISION OF GENETIC SERVICES (1995).

would not tell a man he was not the genetic father.³⁸¹ Some advocate misrepresentation of the test results or only partial disclosure, which would avoid discussions of misattributed genetic parentage.³⁸² How legitimate active misrepresentation would be ethically or legally would depend on whether there were valid concerns about the safety of the woman. Even partial disclosure raises ethical problems if it leads to confusion about the risks of inheritance and results in reproductive decisions based on faulty assumptions.³⁸³

The Institute of Medicine's Committee on Assessing Genetic Risks recommends an approach that avoids many of these problems. It suggests that genetic counselors disclose the fact of non-paternity only to the mother, leaving her with the choice of whether and how to inform her partner.³⁸⁴ This avoids confusion about patterns of inheritance, misrepresentation, and partial disclosure, while protecting women and children who might be vulnerable to the disclosure of this information. It also makes no presumptions about what is best for the family and therefore imposes no decision as to whether the secrets should be unveiled openly or not.

The fact that there is such concern about disclosing non-paternity to the family in genetic counseling, clearly a more "nurturing" and supportive environment than law enforcement, suggests that law enforcement should be particularly cautious about revealing inadvertent discoveries from familial searches. As noted earlier, the lack of regulation and experience in this area leaves many questions about the degree of risk that familial searching poses to the integrity of the family and family privacy generally. As I shall discuss in more detail in Part V, important differences between genetic counseling and law

381. Dorothy C. Wertz, *Society and the Not-So-New Genetics: What Are We Afraid Of? Some Future Predictions from a Social Scientist*, 13 J. CONTEMP. HEALTH L. & POL'Y 299, 314 (1997).

382. McEwen, *supra* note 373, at 360–61.

383. For example, the failure to explain the presence of non-paternity and to avoid discussions of the patterns of inheritance in the family may lead some to conclude that both parents are carriers and that there is an increased risk of having another affected child, when in fact, the lack of genetic fatherhood for the affected child means that this couple has no increased risk for a recurrence of the autosomal recessive condition. Informing the family that there is no recurrence risk of the autosomal recessive condition may avoid this problem, but may also confuse families as to why the child is affected. *See* PRESIDENT'S COMM'N, *supra* note 376; McEwen, *supra* note 373, at 361 (noting also that families may sense that important information is being withheld).

384. INST. OF MED., COMM. ON ASSESSING GENETIC RISKS, *ASSESSING GENETIC RISKS: IMPLICATIONS FOR HEALTH AND SOCIAL POLICY* (1994). This approach is consistent with many professional recommendations that genetic counselors have a duty to inform patients that their inheritance of a genetic mutation may mean that other family members are also at risk, but that they generally do not have a duty to warn relatives directly about these genetic risks except in extreme cases. AMERICAN SOCIETY OF HUMAN GENETICS, *PROFESSIONAL DISCLOSURE OF FAMILIAL GENETIC INFORMATION* (1998); Sonia M. Suter, *Whose Genes Are These Anyway? Familial Conflicts over Access to Genetic Information*, 91 MICH. L. REV. 1854, 1855–56 (1993).

enforcement demonstrate the need to protect against the possibility of these kinds of revelations during law enforcement investigations.

Once again, I want to emphasize that the risks of familial searches are not entirely unique. Familial searches are not the only kinds of police investigations that can potentially disrupt the integrity of the family. Indeed, they may not even present the greatest risk of such a disruption, which can occur through surveillance of suspects or searches of personal documents or property that uncover infidelities, adoptions, etc.³⁸⁵ Moreover, various forms of police surveillance can create equally troubling collateral harm to the family, for example, when children witness the arrest of their parents or the violent entrances of a SWAT team.³⁸⁶ My point in this Section and Part III as a whole is to address the various threats to privacy and civil liberties that familial searches present to the “genetic informant,” to the relatives, and to the family as a whole, whether or not they are unique. Having thus explored these concerns, I turn briefly to an additional concern regarding familial searching: exacerbation of racial inequities.

IV. RACIAL DISPARITIES

As many commentators have noted, the statistics concerning race and crime are deeply troubling.³⁸⁷ African Americans, who make up 13% of the general population, represent, on average 40% of convicted felons, three times greater than one would expect if race were not a factor in criminal convictions.³⁸⁸ Hispanics are also over-represented in prisons, although not to the same extent as African Americans. The probability that an African American, Hispanic, and non-Hispanic white person will be incarcerated in his lifetime, respectively, is 18.6%, 10%, and 3.4%.³⁸⁹

Not only are minority groups convicted at disproportionate rates, but there is also evidence that they are arrested disproportionately and

385. See *supra* text accompanying note 244.

386. See e.g., RADLEY BALKO, OVERKILL: THE RISE OF PARAMILITARY POLICE RAIDS IN AMERICA (Cato Institute 2006), available at http://www.cato.org/pub_display.php?pub_id=6476 (describing the collateral harms that can result from paramilitary police raids).

387. See Rosen, *supra* note 114.

388. Greely et al., *supra* note 24, at 258; Wah, *supra* note 36, at 952; Lazer & Meyer, *supra* note 60, at 375 (“Each year approximately 1.2 percent of the African American population is convicted of a felony (as compared to 0.25 percent of Caucasians).”).

389. Kaye & Smith, *supra* note 51, at 454 (explaining that on any given day, a black American is five times more likely to be in jail than is a white,” and “four times more likely to be under some form of correctional supervision, six-and-a-half times more likely to be incarcerated somewhere, and eight times more likely to be in prison than his white counterpart.”); Grimm, *supra* note 60, at 1177.

evidently with less basis than non-Hispanic Caucasians.³⁹⁰ For example:

A study released by the California State Assembly's Commission on the Status of African American Males in the early 1990's revealed that 64 percent of the drug arrests of whites and 81 percent of Latinos were not sustainable, and that an astonishing 92 percent of the black men arrested by police on drug charges were subsequently released for lack of evidence or inadmissible evidence.³⁹¹

Another study showed that although "the marijuana arrest rates for blacks to whites are eight to one in New York City. . . . government statistics have consistently shown that for all categories of age ranges, marijuana use among blacks is significantly lower than for whites, sometimes about half."³⁹² These findings suggest that conviction or arrest rates are probably not directly correlated with the actual rate that crimes are committed. These disparities in conviction and arrest rates may also be represented in the racial composition of DNA data banks because the vast majority of profiles come from convicted offenders and arrestees.³⁹³

While DNA profiles themselves are racially neutral, the decisions that determine whose profiles will end up in the DNA databases — decisions about whom to investigate, arrest, prosecute and/or convict — are not. Indeed, they may reflect a number of different factors, including possible racial and socioeconomic biases. In a culture that has long battled discrimination, race is clearly not a neutral factor in the criminal justice system.³⁹⁴

390. Steinhardt Testimony, *supra* note 170, at 182.

391. *Id.*

392. Tania Simoncelli, Remarks at the Genetic Perspectives on Policy Seminar: A Perfect Match? DNA in Law Enforcement 10 (Oct. 1, 2007) (transcript available at http://www.dnapolicy.org/resources/GenePOPSforensics_transcript.pdf).

393. Greely et al., *supra* note 24, at 258 (noting that they have not been able to confirm this fact, but that they assume the percentages are reflected in the databases); Rothstein & Talbot, *supra* note 50, at 155; *cf.* Kaye & Smith, *supra* note 51, at 458 (describing the problems presented by the racial disproportion reflected in the DNA databases).

394. As The Sentencing Project notes:

So long as racism exists within society at large, it will be found within the criminal justice system. Racism fuels the overt bias which can show in the language, attitudes, conduct, assumptions, strategies and policies of criminal justice agencies. Instances of overt bias can lead in turn to the improper use of discretion among actors in the criminal justice system. . . . Despite safeguards now in place to reduce or eliminate overt racism, it can still flourish behind the scenes in more subtle ways. . . . Bias in the criminal justice system may take many forms. For example, in policing, it can manifest itself in poor interactions with the community which denote lack of respect. In the

The fact that minority groups are over-represented in DNA databases necessarily means that the pool of individuals subject to future searches for matching DNA profiles in criminal investigations will disproportionately include minorities.³⁹⁵ As a result, any of the underlying biases that influence arrest and conviction rates of minorities will be further magnified. Familial searching threatens to compound these problems and exacerbate racial disparities in the criminal justice system even further. The principle is simple. If certain minorities are over-represented in DNA databanks, then family searches will lead to a similarly disproportionate percentage of minority family members being subjected to investigations. One group estimates that familial searches would result in more than four times the percentage of African Americans identified as suspects (17%) as compared to Caucasians (4%).³⁹⁶ This, of course, is likely to magnify even further the disparity in conviction rates between some minority groups and non-Hispanic whites because it will increase the odds of identifying suspects in minority communities based on DNA profiles. The cumulative effect is to push ever closer toward a universal databank for minorities.³⁹⁷

courtroom, the ways in which minority defendants or attorneys are addressed can communicate attitudes suggesting second-class status. In the prison, officials who have negative interactions with inmates' family members can increase levels of hostility for inmates, families, and staff.

THE SENTENCING PROJECT, REDUCING RACIAL DISPARITY IN THE CRIMINAL JUSTICE SYSTEM: A MANUAL FOR PRACTITIONERS AND POLICYMAKERS 9 (2000); *see also id.* at 6 ("On the whole, study findings suggest that a variety of factors, including law enforcement practices, crime rates, and punitive sentencing policies, contribute to racial disparities in criminal justice involvement.").

395. Grimm, *supra* note 60, at 1176; *see also* Liu, *supra* note 167, at 127–28 (discussing the problem of racial disproportionality in DNA databases).

396. Greely et al., *supra* note 24, at 259; *see* Grimm, *supra* note 60, at 1177 (suggesting that "[t]he Hispanic community will be uniquely victimized by the multiplication of data outputs" because the problem with blacks has to do with data input and retention that began years ago while predictive demographic trends suggest that Hispanics will "be more likely than any other group to be entered into DNA databanks and will face a higher risk of being wrongfully ensnared in the criminal justice system once a relative has been entered.").

397. Some have argued that the solution to disproportionate representation of minorities in the DNA database is to create a universal data bank. By creating profiles of everyone, the argument goes, no group would be overrepresented in the database. *See, e.g.,* David H. Kaye & Michael E. Smith, *DNA Databases for Law Enforcement: The Coverage Question and the Case for a Population-Wide Database*, in *DNA AND THE CRIMINAL JUSTICE SYSTEM* 247, 269–71 (David Lazer ed., 2004). Others argue convincingly, however, that creating "a more egalitarian, universal database" does not really address racial justice concerns since "having a disproportionate number of minority criminals and suspects is a social problem . . . not a DNA database problem." Rothstein & Talbot, *supra* note 50, at 155. The real equality gained in the universal database would be the shared risk to civil liberties because of the shared "indignity of inclusion in the DNA database while simultaneously giving greater power to the police." *Id.* As Erin Murphy points out, the fact that there is such discomfort with universal databanking generally suggests that mandatory testing of "otherwise innocent people" is problematic to our society. Murphy, *supra* note 62, at 21.

The effect of familial searching on different ethnic groups is even more complicated when one factors in the use of Y-STR analysis, which is the use of markers on the Y-chromosome to further refine familial searching.³⁹⁸ Recent modeling of familial searching reveals that, because Y-STR typing is not equally discriminating among different ethnic groups, it can lead to increased or decreased attention to certain populations. Because it is not very discriminating in the Hispanic population, for example, the already over-represented Hispanic profiles will not be culled out as well with Y-STR as European profiles.³⁹⁹ Y-STR analysis is also relatively undiscriminating for Asian profiles, but because they are underrepresented in the data banks, this group benefits from Y-STR typing. While, Y-STR analysis draws “disproportionate attention to Hispanics and against Asians, [it] moderately affect[s] African-Caucasian-Americans.”⁴⁰⁰

The perpetuation of minority over-representation in criminal investigations is per se problematic, and it also results in corollary harms. First, it heightens long-standing disparities and inequalities among racial groups generally. Second, regardless of the degree to which these disproportionate percentages are due to underlying biases in the criminal justice system, the statistics may reinforce perceptions that are harmful in race relations. It can heighten suspicion in some minority communities that law enforcement is prejudiced against and targets minorities.⁴⁰¹

Equally troubling is that these statistics may reinforce stereotypes about criminality and race. Familial searches would result in disproportionate numbers of minority suspects and consequently lead to even greater disproportionate rates of arrest, prosecution, and conviction of minorities, which might be seen as a causal connection between race and crime, not between race and *arrest and conviction*. Given that DNA profiles would play a role in identifying disproportionately more minority criminals and that some studies show that crime runs in families,⁴⁰² people might conclude that the effects of this “neutral” technique demonstrate a correlation between criminal behavior and genetics.⁴⁰³

398. See *infra* note 495 and accompanying text.

399. Erin E. Murphy, Yun S. Song, & Montgomery Slatkin, *Equality, Efficiency & Familia DNA Search Policies* (unpublished manuscript), cited in Murphy, *supra* note 62, at 30.

400. *Id.* at 30–31.

401. THE SENTENCING PROJECT, *supra* note 394, at 1 (“Racial and ethnic disparity foster public mistrust of the criminal justice system and this impedes our ability to promote public safety.”); Murphy, *supra* note 62, at 31.

402. See *supra* text accompanying notes 72–74.

403. All that the disproportionate rates of conviction and arrest prove is the fact that certain minority groups are more likely to be arrested and convicted. This tells us nothing about the reasons for this disparity. Many might interpret the data as proof that certain minorities actually *commit* crimes at a disproportionate rate, and that this is based on genetics. Cf. THE SENTENCING PROJECT, *supra* note 394, at 6 (“While some claim that minority overrepresentation in the justice system is solely the result of people of color committing more crime,

Such reasoning would resonate with tendencies to seek genetic explanations for many social ills both today⁴⁰⁴ and in the eugenics era of the last century.⁴⁰⁵ The fact that genetics and statistics seem objective and neutral may only intensify the perception that these views are accurate, just as the “objectivity” of eugenics science was relied upon to reach discriminatory conclusions about predispositions to criminal and other anti-social behaviors in various ethnic and socially devalued groups.⁴⁰⁶ While modern science is more sophisticated and advanced than that of the eugenics era,⁴⁰⁷ even today it can be misinterpreted to support simplistic notions about genes and behavior.⁴⁰⁸ DNA profiling may be neutral, but the human decisions surrounding its use are not. Familial searching, therefore, runs the risk of using DNA in ways that accentuate the underlying biases of law enforcement and our society, while cloaking the results as objective measures of truth. Although these disparities exist whether or not we use familial searching,⁴⁰⁹ its potential to magnify these effects means we should exercise great caution.

V. BALANCING THE INTERESTS

As we have seen, familial searches, in combination with practices related to DNA profiling generally, raise numerous privacy and civil liberty concerns for the convicted offenders or arrestees, their relatives, and their families as a whole. In addition, they exacerbate racial inequities. But of course, familial searches also offer great promise. As illustrated by some of the success stories described in Part II, when the technique works, the benefits to society are great. Familial search-

empirical analyses do not support this claim.”); *see also* Gabel, *supra* note 51, at 44; Murphy, *supra* note 62, at 32.

404. *See, e.g.*, RICHARD J. HERRNSTEIN & CHARLES MURRAY, *THE BELL CURVE* (1994) (asserting that differences in crime rates among races are genetic in origin); PHILLIPE RUSHTON, *RACE, EVOLUTION & BEHAVIOR* (1994) (arguing that racial differences are genetically, not environmentally, based); Sonia M. Suter, *A Brave New World of Designer Babies?*, 22 *BERKELEY TECH. L.J.* 897, 943 n.228 (2007) (describing websites that rely on genetic claims to support claims of racial superiority and inferiority); *id.* at 939 (noting the appeal in popular culture of seeking genetic explanations for behavior).

405. Duster, *supra* note 220, at 328.

406. *See* Suter, *supra* note 404, at 902–04.

407. *Id.* at 939.

408. *See* Joh, *supra* note 184, at 876–77 (worrying that DNA testing could be used to attempt to understand behavior in terms of genetics); Tania Simoncelli, *Dangerous Excursions: The Case Against Expanding Forensic DNA Databases to Innocent Persons*, 34 *J.L. MED. & ETHICS* 390, 392 (2006) (“Repeated claims that human behaviors such as aggression, substance addiction, criminal tendency, and sexual orientation can be explained by genetics render law enforcement databases especially prone to abuse.”); Murphy, *supra* note 62, at 29 (“[T]his widespread acceptance of racial and ethnic categorization as a means of quantifying DNA results . . . opens the door to a kind of twenty-first century racial eugenics in which crime and criminology are viewed largely as functions of genetics and biology.”).

409. *See* Wah, *supra* note 36, at 953.

ing allows investigators to solve crimes that would otherwise be difficult or impossible to solve, fulfilling several very important public goals. The ability to remove offenders from the streets who might have otherwise committed more violent crimes clearly serves the public's interests in safety.⁴¹⁰ Familial searching may also deter crime in other ways. The more people whose DNA profiles are on file, the more people who may avoid committing violent crimes for fear their genetic profiles could link them to the crime. The additional knowledge that one's conviction or arrest could place family members under police surveillance through familial searching might further deter some people from committing crimes.⁴¹¹

Victims also have significant interests in the resolution of crimes committed against them, quite apart from any concerns they may have about whether they could become a victim again.⁴¹² And because minorities are most often victims of crimes committed by minorities, the over-representation of minority families investigated through familial searching might actually benefit minority groups. Familial searching could increase the ability to find criminals who have victimized minority communities, thereby increasing the safety of these communities and honoring their interests as victims.⁴¹³ Finally, to the extent that familial searches increase our ability to identify the true perpetrators of crimes, they can exonerate individuals who have been wrongfully convicted as was powerfully demonstrated in the North Carolina case, when Darryl Hunt was released from prison after serving eighteen years for a rape and murder he did not commit.⁴¹⁴

410. Amy Herdy, *New DNA Testing Could Involve Shaking Down Family Tree*, 9NEWS.COM, May 24, 2007, <http://www.9news.com/news/article.aspx?storyid=70705>; see also Williams & Johnson, *supra* note 31, at 235. In proposing to expand Virginia's first and largest database in the country to include arrestees, Attorney General Jerry W. Kilgore argued that such expansion "will help us solve cases much quicker and ensure public safety by making sure somebody's not released back into the general public who has committed a string of crimes." Francis X. Clines, *Virginia May Collect DNA in Every Arrest for a Felony*, N.Y. TIMES, Feb. 17, 2002, at A22.

411. See Williams & Johnson, *supra* note 31, at 235. This idea is consistent with the view that privacy interests generally can be in opposition to the enforcement of social norms. "Privacy makes it harder for society to enforce norms, which decreases the power of social control. If people cannot monitor and share information about each other's private lives, a zone opens up where people can act contrary to a society's norms without repercussion." SOLOVE, *supra* note 158, at 94-95.

412. The resolution of cold cases "helps bring closure to countless victims of crime who long have languished in the knowledge that perpetrators remain at large." *United States v. Kincade*, 379 F.3d 813, 839 (9th Cir. 2004); see also *DNA Traps Rapist*, *supra* note 1 (noting that when the shoe rapist was caught and convicted, the victims were "absolutely over the moon").

413. Rockne Harmon, Presentation at the Genetic Privacy, DNA Databasing & Familial Searching Symposium (Mar. 17, 2008).

414. See *supra* text accompanying notes 95-96. Hunt had been convicted and sentenced to life before DNA testing was widespread, even though the semen didn't match his blood type. When his DNA was tested ten years later and did not match the semen, the judge ruled that it was still possible that he committed the rape and he remained in prison. Shorn, *supra*

For all of these reasons, it is hard to oppose a technique that has been used to identify and convict criminals who have committed heinous crimes. Not surprisingly, law enforcement's defense of DNA profiling generally, and familial searching in particular, is impassioned. People work hard in law enforcement and crime labs, often with limited resources and overwhelming workloads, to try to protect the public by identifying criminals. As a result, they often perceive concerns about privacy and the constitution as burdensome obstacles, preventing them from fighting the "good fight" against crime.⁴¹⁵ To many in law enforcement, there is not much to debate with respect to familial searches because they strongly believe that they have a moral obligation to pursue the partial leads. As a New York state district attorney stated, the failure to use familial searching is "insanity. It's disgraceful. If I've got something of scientific value that I can't share because of *imaginary* privacy concerns, it's crazy. That's how we solve crimes."⁴¹⁶ According to a genetic expert, the failure to investigate such leads "would be like getting a partial license plate number on a getaway car and saying, 'Well, you didn't get the whole plate so we're not going to investigate the crime.'"⁴¹⁷ From this perspective, if the technology keeps a few rapists and murderers off the street, it has fulfilled its promise. What more must be said?

Many of the privacy proponents and civil liberty advocates are just as impassioned the other way, resisting attempts to move these new forensic technologies forward. This group sees great danger in a society that fails to protect the civil liberties of its citizens and that is too ready to dismiss privacy concerns for the well-being of society. For them the solution is not ever-expansive uses of technologies simply because they can catch more criminals. Instead the focus must be

note 1. Hunt, not surprisingly, has become a huge proponent of familial searches. Finding civil libertarians' complaints about the technique to be "infuriating," he argues that "[a]nything that science is capable of doing should be used [to exonerate the innocent], because you're talking about a person's life." Smalley, *supra* note 57. Hunt now runs The Darryl Hunt Project for Freedom and Justice, a non-profit organization to help other inmates use DNA to prove their innocence. Wah, *supra* note 36, at 958; Smalley, *supra* note 57. Of course this story tells us more about the dangers of using DNA evidence incorrectly in the first instance, than in the value of familial searching per se. While familial searching was the final straw to undo his conviction, arguably there was sufficient evidence to have exonerated him with or without familial searching. See Murphy, *supra* note 62, at 16 (observing that Daryl Hunt was not just wrongfully incarcerated, but also that "the state refused to recognize his innocence despite his having demonstrably shown that [his] DNA did not match [the crime scene sample]").

415. In presenting some of the ideas in this Article to a group of individuals who work with these DNA forensic technologies in state and federal criminal labs, I was struck by how adamantly and roundly the group rejected any arguments raised about the risks associated with these technologies.

416. Nakashima, *supra* note 118.

417. Weiss, *DNA Bank*, *supra* note 24 at A6 (quoting Frederick Bieber, a Harvard geneticist who studies familial profiling).

on guarding the citizens at large from undue government interference.⁴¹⁸

In some ways, the conflict seems insoluble. Proponents and opponents of familial searching are both fighting the “good fight.” Both are motivated by defensive postures. Proponents want to fight crime; opponents want to fight violations of civil liberties.⁴¹⁹ When each side is so deeply passionate about its underlying goals, it becomes difficult not only to find a compromise, but even to agree upon a common approach to resolving this and other difficult dilemmas. In short, we face the challenge of there being a plurality of important values, some of which collide. How do we handle this collision and the possibility that some of the values may have to give way in certain contexts?

The proponents of familial searches tend to rely on a narrow version of consequentialism that justifies all actions that serve the goals of public safety and security and that tends to undervalue more amorphous values like privacy. This approach is destined to push in favor of ever-expansive uses of DNA forensics because the benefits seem so concrete and tangible. The social value of identifying murderers and rapists is palpable and visceral — it keeps them off the street, it provides peace and resolution to the victims and their families, and it vindicates public justice. These benefits are also “in some sense measurable in economic terms.”⁴²⁰ In contrast, the risks of using DNA fingerprinting are more abstract. Invasions of privacy, threats to civil liberties, and exacerbation of racial inequities are more amorphous concerns and are therefore less viscerally compelling. “It is [simply] difficult to quantify or demonstrate empirically the costs of privacy violations or the benefits of protecting privacy,”⁴²¹ especially in comparison to the benefits of identifying and punishing a murderer. While we may have a vague sense of the worth of privacy, under this version of consequentialism, the scales will almost always tip strongly in favor of expanding the reach of DNA fingerprinting technology. This would be true of familial searching as well because familial searching seems to offer the clear and concrete promise of identifying criminals who might have otherwise evaded capture, while posing vague privacy risks and vague concerns about racial disparities that exist whether or not we use the technology.⁴²²

418. Cf. Rosen, *supra* note 47.

419. Weiss, *DNA Bank*, *supra* note 24, at A1, A6 (noting that debates over DNA profiling are “part of a larger, post-Sept. 11 tug of war between public safety and personal privacy that has intensified amid recent revelations that the government has been collecting information on personal phone calls”).

420. Sonia Suter, Book Review, *Genetic Testing and the Use of Information*, 41 JURIMETRICS 261, 271 (2000).

421. *Id.*

422. See Wah, *supra* note 36, at 953.

An alternative approach to evaluating technologies like familial searches tends to focus primarily on values like privacy, civil liberties, or justice. Such an approach favors significant restraints on the use of DNA databases. It would likely argue against any long-term retention of collected samples; the collection of samples from arrestees whose privacy interests have not been reduced; and familial searches, given that they threaten the privacy interests of a multitude of individuals and the family as a whole. Under this view, the public safety benefits of DNA profiling are given little weight, as long as these techniques challenge privacy, liberty, or justice.

Neither of these approaches, however, fully considers all that is at stake. Under the security consequentialist approach, privacy, liberty, and justice are undervalued. These amorphous values lack real currency in an analysis that focuses on tangible, measurable costs and benefits. In contrast, a privacy-centric perspective undervalues competing social goods — like public safety, honoring victims' interests, and the exoneration of the innocent.

A. Assessing Prima Facie Duties

I advocate a compromise approach that does not focus exclusively on one or just a few values or desirable consequences. Instead, it recognizes the competing goods at stake: on the one hand, public safety, honoring victims' interests, exonerating the innocent; and on the other hand, privacy and racial equity. It ensures that privacy and justice “[are] not undervalued and too easily trumped by the measurable benefits” of familial searching, “while also keeping in view relevant competing interests.”⁴²³ The goal with this approach is to avoid the impasse that arises with the other two approaches — the kind of impasse that leads the proponents of DNA profiling to dismiss the concerns of the privacy proponents and that leads privacy proponents to dismiss any expansions of DNA profiling. Rather than simply balance the competing values and declare some the winners and others the losers, however, this approach attempts to recognize that the overridden values remain significant and continue to exert force and obligations on our actions and deliberations. In other words, the overridden values do not go away; they retain “moral traces.”

This approach borrows from the philosopher W.D. Ross, who starts with the premise that we have many kinds of obligations or duties to act in certain ways (honor promises, avoid harm, etc.). None of these duties, however, is absolute or unconditional. Instead, these obligations are prima facie or conditional duties that would be “dut[ies] proper” except for the possibility of other conflicting prima facie du-

423. Suter, *supra* note 420, at 272.

ties.⁴²⁴ In Ross's view, we must fulfill our prima facie duties unless they conflict, in a particular circumstance, with an equal or more stringent prima facie duty.⁴²⁵ If we view a moral duty — e.g., the duty to protect the public or to promote privacy — as always absolute, it could not “be overridden under any circumstances” and would have “priority over all other obligations with which it might come into conflict.”⁴²⁶ Under Ross's approach, although a prima facie duty may provide a “strong moral reason” to act in a certain way, “this reason may not always be decisive or triumph over all other [moral] reasons”⁴²⁷ or prima facie duties.

This is not to say, as James Childress points out, that prima facie duties are merely “rule[s] of thumb”⁴²⁸ and not prescriptive. They are, in fact, “intrinsically binding,”⁴²⁹ but they are not always determinative of how we should act in any given instance. Ross's approach will often result in our feeling pulled by competing prima facie duties, which requires us to determine which of the prima facie duties, in that particular context, is our actual duty. Whether we are in fact morally bound by a particular prima facie duty — that is, whether the prima facie duty will become an actual duty — depends on the “the total situation, including various possible courses of action with all their features of prima facie rightness and wrongness.”⁴³⁰ Ross does not offer a general rule for the relative stringency of the various prima facie duties. Instead we can only determine what our actual duty is in any circumstance by full reflection.⁴³¹ The analysis requires us to find “the greatest balance” of right over wrong⁴³² to determine which prima facie duty should override the competing prima facie duties⁴³³ “in virtue of the totality of its ethically relevant characteristics.”⁴³⁴

424. W.D. ROSS, *THE RIGHT AND THE GOOD* 19 (1988). See JAMES E. CHILDRESS, *MORAL RESPONSIBILITY IN CONFLICTS* 68 (1982) (noting that “[p]rima facie does not mean ‘apparent’ in contrast to ‘real,’ for prima facie duties are real although they are distinguished from ‘actual’ duties”).

425. TOM L. BEAUCHAMP & JAMES F. CHILDRESS, *PRINCIPLES OF BIOMEDICAL ETHICS* 33 (4th ed. 1994).

426. CHILDRESS, *supra* note 424, at 68.

427. *Id.*

428. *Id.*

429. *Id.*

430. *Id.* at 67.

431. See ROSS, *supra* note 424, at 42.

432. BEAUCHAMP & CHILDRESS, *supra* note 425, at 33 (citing ROSS, *supra* note 424, at 41).

433. ROSS, *supra* note 424, at 46. Ross elaborates by stating that “[t]he more correct answer would be that the ground of the actual rightness of the act is that, of all acts possible for the agent in the circumstances, it is that [act] whose *prima facie* rightness in the respects in which it is *prima facie* right most outweighs its *prima facie* wrongness in any respects in which it is *prima facie* wrong.” *Id.*

434. W.D. ROSS, *FOUNDATIONS OF ETHICS* 86 (1939). Ross relies on a kind of intuitionism in suggesting that our determination depends not on science, but on our thinking about what is right and good. See *infra* notes 438–42 and accompanying text; see also H.A. Prich-

This focus on prima facie duties in the context of evaluating DNA forensics helps emphasize the value of not only concrete and measurable goods like public safety, victims' interests, and exonerating the innocent, but also more abstract goods like privacy and racial equity. In addition, the idea that we have prima facie duties, some of which may in some instances be overridden by competing prima facie duties, emphasizes that we have some continuing obligation to or pull in the direction of the overridden prima facie duty. In other words, the overridden prima facie obligations are not abandoned or forgotten. They leave "residual effects" or "moral traces," as they continue to exert force on our subsequent attitudes and actions.⁴³⁵ Even if we break a promise because a competing prima facie duty compels it, for example, "we do not for a moment cease to recognize a *prima facie* duty to keep our promise, and this leads us to feel . . . compunction . . . ; we recognize, further, that it is our duty to make up somehow to the promisee for the breaking of the promise."⁴³⁶ As we pursue the actions compelled by our actual duty, the pull of the outweighed prima facie duty requires us to "approximate as closely as possible the values enshrined in the overridden duty."⁴³⁷

Admittedly, this methodology does not offer conclusive answers to most moral questions, including the question of whether law enforcement should pursue familial searches. That this approach does not offer a precise calculus for resolving these conflicts⁴³⁸ and that it requires "some intuitive judgments and subjective weightings . . . does not reduce the process of balancing and overriding to arbitrary or merely subjective preferences."⁴³⁹ We are guided by "the cumulative product of the moral reflection of many generations, which has developed an extremely delicate power of appreciation of moral distinc-

ard, *Does Moral Philosophy Rest on a Mistake?*, in *MORAL OBLIGATION: ESSAYS AND LECTURES 1* (Oxford Univ. Press 1957) (1949).

435. CHILDRESS, *supra* note 424, at 69 (citing Robert Nozick, *Moral Complications and Moral Structures*, 13 *NAT. L.F.* 1 (1968)); RICHARD B. MILLER, *CASUISTRY AND MODERN ETHICS: A POETICS OF PRACTICAL REASONING* 47 (1996).

436. ROSS, *supra* note 424, at 28; *see also* A.C. EWING, *SECOND THOUGHTS IN MORAL PHILOSOPHY* 110 (1959) (arguing that our prima facie duty to keep the promise "should always affect our mental attitude towards an action" even to the point of experiencing regret).

437. MILLER, *supra* note 435, at 47.

438. This kind of methodology is not subject to a decision procedure through some sort of algorithm or calculus. BEAUCHAMP & CHILDRESS, *supra* note 425, at 36 (noting that "the process of balancing cannot be rigidly dictated by some formulaic 'method' in ethical theory"). *See generally* Prichard, *supra* note 434. Philosophers like Jeremy Bentham advocated a hedonistic calculus, which presumes that a quantitative approach and decision procedure is possible to determine what is morally right or wrong. But such a calculus is ultimately unworkable. *See* RONALD SUTER, *ARE YOU MORAL?* 94 (1984).

439. BEAUCHAMP & CHILDRESS, *supra* note 425, at 35–36 (noting also that the balancing of the relative rightness and wrongness of competing norms "is further complicated by the wide range of relevant considerations").

tions.”⁴⁴⁰ In the process of balancing our competing prima facie duties, we must “check decisions from general principles against more intuitive judgments about proper outcomes for particular cases,” in short, engage in Rawls’s “reflective equilibrium.”⁴⁴¹ Indeed, this kind of moral reflection “conform[s] closely with our experience as moral agents.”⁴⁴²

Applying such analysis to the question of whether we should pursue DNA familial searches tends to avoid extreme outcomes. Under this methodology, it is difficult to conclude that the prima facie duties to further public security, honor victims’ interests, and exonerate the innocent should lead to unlimited uses of familial searching because these prima facie duties are not absolute. They collide with the prima facie duties to protect privacy and civil liberties and to promote racial justice. Similarly, one cannot conclude that the prima facie duties to promote privacy, civil liberties, and racial justice render familial searching per se unethical because these duties too are not absolute. Instead, the approach I advocate requires first, an exploration of which of the prima facie duties should override the competing prima facie obligations in particular circumstances, and second, a determination of the appropriate actions to address the moral traces of the outweighed prima facie duties. If, for example, we conclude that in some instances the prima facie duty to protect the public overrides the prima facie duty to protect privacy, we must ask whether there are safeguards or particular approaches to familial searching that can maximize its potential to promote public safety, exonerate the innocent, and honor victims’ interests, while also minimizing the threats it presents to privacy and racial equity.

Although the approach I advocate requires consideration of all of the relevant values at stake, as the discussion in Part III suggests, courts tend to minimize the privacy concerns when adjudicating the Fourth Amendment issues of DNA forensics generally. This is largely due to the fact that courts focus on the specific case or controversy before them,⁴⁴³ which limits their consideration of collateral and more far-reaching privacy implications of ruling that certain uses of DNA profiling are constitutional. When considered so narrowly, the privacy interests barely register against the weight of the public utility of this technology. For example, in considering whether surreptitious collection of DNA samples from a suspect by the police posing as a law firm violated the Fourth Amendment or the state constitution’s analo-

440. ROSS, *supra* note 424, at 41; *see also* Prichard, *supra* note 434.

441. JOHN RAWLS, A THEORY OF JUSTICE 19–21, 46–51 (1971).

442. BEAUCHAMP & CHILDRESS, *supra* note 425, at 36 (noting that although “plural and conflicting values make comparisons difficult . . . [a] plurality of value and judgments does not by itself stifle sound deliberation, balancing, justification, and decisionmaking”).

443. Article III of the Constitution confines the judicial power of the federal courts to actual “Cases” and “Controversies.” U.S. CONST. art. III, § 2.

gous provision, the *Athan* court found little force in the privacy arguments asserted by the defendant.⁴⁴⁴ The court acknowledged that the ACLU had argued that “DNA has the potential to reveal a vast amount of personal information, including medical conditions and familial relations, therefore DNA should constitute a privacy interest.”⁴⁴⁵ But, the court pointed out, the government did not use DNA to glean such information, but merely for “identification purposes.”⁴⁴⁶ As the court stated, “[t]he concerns raised by the ACLU, while valid, are not present in *this* case.”⁴⁴⁷ Similarly, the court found that in mailing an envelope to police posing as attorneys who were offering to represent him, Athan had a limited privacy interest in the DNA from his saliva because it was “not a communication” and thus not protected by the attorney-client privilege (whether or not an attorney-client relationship existed).⁴⁴⁸ Evaluating the conflicting interests solely with respect to Athan’s case, as the court seemed to acknowledge, raised only minimal privacy concerns, which were easily outweighed by the value of using DNA technology to convict Athan of second-degree murder.

Had the court’s privacy analysis been more focused on the collateral privacy threats raised by DNA forensics, it would have considered a broader range of issues, including that DNA samples contain a vast amount of personal information, which law enforcement could potentially mine when they create the DNA profile; that there are inadequate limitations on legitimate law enforcement analysis and broad and vaguely defined authorizations to analyze such samples for law enforcement purposes; and that the long-term or indefinite retention of such samples increases the risks of both authorized and unauthorized probing of the DNA samples for personal information that is not merely identifying. The court would also have considered that the problem of mission creep is growing and that mission creep includes the involuntary collection of DNA samples for DNA profiling from individuals who have not been convicted of offenses, including arrestees or others who have been deemed to have abandoned their DNA by spitting on the street, licking an envelope, or having a strand of hair fall to the floor, whether or not they realized they were subjecting themselves to DNA surveillance. Were a court to evaluate the constitutionality of surreptitious sampling of a relative in the context of familial searching, this broader consideration of privacy interests would also contemplate the collateral harms of long-term surveillance of family members; the potential revelation of the presence or absence of

444. See *State v. Athan*, 158 P.3d 27, 32–34 (Wash. 2007).

445. *Id.* at 34.

446. *Id.*

447. *Id.* (emphasis added).

448. *Id.*

biological relationships within the family and the effect that may have on individual identity and family dynamics; and the risk of racial inequity in disproportionately subjecting minority groups to long-term surveillance.

The fact that courts focus narrowly on the concerns of the particular case or controversy may suggest that legislatures should set limits on when and how particular DNA technologies may be used.⁴⁴⁹ Since legislatures are not bound by a “case and controversy requirement,” they may be better able to “set the best rule” for the uses of this technology.⁴⁵⁰ If, however, legislatures do not take on this task, the only way to value the full scope of privacy interests adequately is for courts to consider both the specific privacy threats faced by the defendant and all of the collateral privacy threats posed by the technology.

This approach would not be unlike the approach taken by courts under the First Amendment overbreadth doctrine, which “tests the constitutionality of legislation in terms of its *potential* applications,” not just its application to the defendant’s own case.⁴⁵¹ The overbreadth doctrine in the First Amendment context is justified by the “transcendent value to all society of constitutionally protected expression” and therefore allows a defendant to challenge a statutory prohibition of speech even if the defendant’s speech could be constitutionally proscribed by a more specific statute.⁴⁵² Moreover, it allows courts to consider the interests of others affected by the statute, contrary to “the general rule that an individual has no standing to litigate the rights of third persons.”⁴⁵³

Like the First Amendment overbreadth doctrine, my suggested approach would stand as an exception to the case or controversy requirement. Under this approach courts should recognize the “tran-

449. See Kerr, *supra* note 339, at 783.

450. *Id.* Kerr has observed that the Fourth Amendment offers limited privacy protections with respect to new technologies.

[C]ourts rarely accept claims to Fourth Amendment protection in new technologies that do not involve interference with property rights, and have rejected broad claims to privacy in developing technologies with surprising consistency. The result is a critical gap between privacy rules the modern Fourth Amendment provides and privacy rules needed to effectively regulate government use of developing technologies.

Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 807 (2004). He concludes, therefore, that “[a]dditional privacy protections are needed to fill the gap between the protections that a reasonable person might want and what the Fourth Amendment actually provides.” *Id.* at 838.

451. GEOFFREY R. STONE ET AL., *THE FIRST AMENDMENT* 113 (3d ed. 2008).

452. *Gooding v. Wilson*, 405 U.S. 518, 521 (1971); see also *Broadrick v. Oklahoma*, 413 U.S. 601, 615 (1972) (limiting *Gooding*’s overbreadth analysis to cases in which “the overbreadth of a statute [is] . . . not only real, but substantial as well”).

453. STONE ET AL., *supra* note 451, at 113 (citing *United States v. Raines*, 362 U.S. 17 (1960)).

scendent value” of privacy and grant it greater weight in their Fourth Amendment analysis of DNA technologies by considering not just the specific injuries to the defendant in the case before them, but also the potential future threats to him and others that this technology poses. Thus even if Athan’s particular privacy interests may not outweigh the public value of convicting a murderer, a consideration of the fuller privacy threats associated with surreptitious sampling may outweigh the public safety value of DNA profiling overall.

In considering whether, when, and to what extent DNA forensics and familial searching are justified based on the relative weight of the conflicting prima facie duties, it is useful to explore how we might handle the collision of competing prima facie duties in other contexts. In determining whether a war is just, for example, we begin with the principle that we have a prima facie duty not to harm others. Going to war, however, violates this prima facie duty by killing and injuring others, and is therefore prima facie wrong.⁴⁵⁴ Yet, although war is prima facie wrong, there may be other serious and weighty prima facie duties (e.g., protecting the innocent, upholding justice, and self-defense) that override the prima facie duty of nonmaleficence and therefore justify going to war.⁴⁵⁵ Even if we conclude in certain instances that a competing prima facie duty is more stringent than the duty to do no harm, the overridden prima facie duty to do no harm compels us to conduct the war in a way that minimizes harm.⁴⁵⁶ Thus, there must be clear, justifiable reasons for going to war;⁴⁵⁷ war must be the last resort for fulfilling the overriding prima facie duty (such as the duty to protect the innocent);⁴⁵⁸ it must have a reasonable hope of success; the force must be proportional to the goal; and the intention must be right or just — the goal should ultimately be peace or justice, not simply destruction and harm.⁴⁵⁹ The moral traces of the prima facie obligation to do no harm exert force over the manner in which war is waged in specific ways so that we inflict the least amount of harm. As a result, they influence “the choice of weapons and methods to fight wars”; create the objective to incapacitate or restrain the enemy, not specifically to kill or injure him; delegitimize the attack of certain noncombatants; prohibit the infliction of unnecessary suffering; and limit the harm to civilians in accord with the principle of proportionality.⁴⁶⁰

454. CHILDRESS, *supra* note 424 at 68–75.

455. *Id.*

456. *Id.*

457. Childress also argues that the government must announce its “intention of and the reasons for waging war.” *Id.* at 76. Otherwise, it fails “to exercise the responsibility of explaining and justifying exceptional action to those involved.” *Id.*

458. *Id.* at 75 (emphasizing that there cannot be other ways to achieve the goal of protecting the innocent short of war).

459. *Id.* at 75–80; MILLER, *supra* note 435, at 48.

460. CHILDRESS, *supra* note 424 at 80–81; *see also* MILLER, *supra* note 435, at 48.

Similarly, in criminal punishment and prosecution — a context more closely related to DNA familial searches — we may face competing prima facie duties. Darryl Brown points out that theories of criminal punishment, such as deterrence and retribution, that may lead us to prosecute or impose particular sentences on offenders can sometimes lead to significant collateral harms to third parties.⁴⁶¹ As a result, some prosecutions may (or should) be foregone or some sentences may (or should) be reduced to minimize these collateral harms. While Brown does not frame the issue in terms of prima facie duties,⁴⁶² one might point out that while society has prima facie duties to deter crime and to seek retribution for wrongful acts, it also has a prima facie duty to protect against collateral harms such as those that shareholders and employees might suffer as a result of corporate prosecutions;⁴⁶³ those that communities might suffer by losing access to a health care provider prosecuted for health care fraud;⁴⁶⁴ or those that families and communities might suffer from high rates of incarceration that lead to social disorganization, stigma to families, and diminished supervision of and harmful effects on children.⁴⁶⁵ In short, Brown argues for a broader theory of criminal justice that can incorporate considerations of these third-party collateral harms in a way that traditional criminal law theory cannot because “it is largely a theory of *punishment*.”⁴⁶⁶ To characterize his arguments in terms of prima facie duties, he rejects a theory of criminal justice that focuses on fulfilling only one prima facie duty and instead urges a balancing of competing duties.⁴⁶⁷

461. See Darryl K. Brown, *Third-Party Interests in Criminal Law*, 80 TEX. L. REV. 1383 (2002).

462. Brown suggests that we should examine whether the social costs of prosecution or sentencing “outweigh the social benefits of punishment,” *id.* at 1385; that consideration of third-party interests “expand[s] the considerations of a utilitarian theory beyond the general and specific deterrent effects on offenders and potential offenders,” *id.* at 1397; and that we should “incorporate collateral consequences into either a fairness or utilitarian calculus of criminal justice policy,” *id.* at 1404. But he also suggests that concern for third-party interests “may arise from deontological premises,” that “third parties do not deserve” to suffer from the collateral harms of some punishments and sentences, *id.* at 1397, and that “[u]tilitarianism directs criminal law toward ‘deterrence primacy,’” *id.* at 1411.

463. See *id.* at 1387.

464. See *id.* at 1387–88.

465. See *id.* at 1395–96.

466. *Id.* at 1400.

467. Brown suggests that we recognize that criminal law “mediates multiple commitments” and that we balance the competing commitments through a Rawlsian “reflective equilibrium,” whereby “we check decisions from general principles against more intuitive judgments about proper outcomes for particular cases.” *Id.* at 1401 (citing RAWLS, *supra* note 441, at 19–21, 46–51). In short, he suggests a kind of balancing of “third-party interests against the primacy of culpability and harm through more sophisticated decisionmaking procedures, aiming to reach a context sensitive accommodation . . . that fulfills fairness commitments to all parties, collateral ones as well as defendants and victims.” *Id.* at 1424. Brown does not discuss the notion of moral traces that overridden commitments continue to exert and the consequent need to minimize the harms of overriding these prima facie duties.

An application of this kind of balancing of competing prima facie duties in the context of DNA forensics suggests that in very limited and controlled instances familial searches may be ethically legitimate, and perhaps even desirable, because the prima facie duty to protect the public is so great. Even so, we must impose safeguards on DNA profiling generally and familial searching specifically to ensure that the technology has a reasonable chance of success and to respond to the moral traces of our overridden prima facie duties to protect privacy, civil liberties, and racial justice. Without such safeguards, we may reap only limited benefits from these technologies while undermining some important values. A complete determination of how exactly to strike a balance between protecting privacy, civil liberties, justice, and public safety, however, ultimately depends to some extent on empirical data regarding the risks and benefits of this technology, all of which we may not yet have.

B. Balancing Prima Facie Duties

Whether and when the balance of interests tips in favor of familial searches depends in part on how effective this technique really is. In other words, we cannot justify overriding our prima facie duties to protect privacy and civil liberty interests by engaging in familial searching if it doesn't even satisfy the objective of fulfilling our duty to protect the public. Although familial searches theoretically further important public goals, the extent of those benefits depends on a number of factors, including the overall effectiveness of DNA profiling; the kinds of crimes we try to solve with the technique; the probability that a partial match indicates that the sample came from the offender's relative; and whether we have adequate resources, staffing, and oversight for crime labs. In addition, the degree to which familial searching threatens privacy, civil liberties, and racial equality depends on the way in which DNA databases are established and maintained. Factors include whether there are sufficient restrictions on the potential uses of retained samples; when and how familial searches are conducted; whether investigators reveal familial secrets; whether law enforcement may surreptitiously obtain DNA samples from relatives of partial matches; and whether the records, profiles, and samples are easily and automatically purged for exonerated individuals. As we

Instead he suggests that collateral consequences are inevitable in punishment and that "we have to ignore costs below some level we judge to be both *de minimis* and exceedingly diffuse." *Id.* at 1403. He does, however, hint at some of the considerations that such an analysis might require. For example, he suggests that it is often the role of criminal law to find ways to minimize collateral harms because there are inadequate substitutes outside of criminal law — in short, there are no other alternatives. *See id.* at 1421. He also argues that even if the balance of interests argues in favor of prosecution, we could reduce sentencing to minimize the collateral harms. *Id.* at 1414.

shall see, various measures could influence whether and how much public good comes of familial searching as well as how dire the risks are to privacy and racial equality.

1. Increasing the Benefits and Maximizing the Effectiveness of Familial Searching

In balancing the prima facie duties relevant to familial searching, we can borrow from the just war analysis. When we conclude that the balance of prima facie duties justifies a war in self-defense, for example, we are ethically bound to wage the war so as to increase the chances of defending ourselves. Similarly, any ethically justified use of familial searching must be conducted so as to maximize its potential for solving crimes. If we are even to consider the use of familial searching, therefore, its promise must be more than speculative or anecdotal.

As a starting point, we must determine the effectiveness of DNA profiling *generally*. Currently, there is limited information as to how many “cold hits” result in actual convictions, but evidence suggests that there is wide variation in the effectiveness of DNA databases generally.⁴⁶⁸ Related to this issue is the concern that crime labs may not be analyzing crime scene samples as consistently as they should be in order to make DNA profiling as effective as possible.⁴⁶⁹ This problem is due in large part to significant backlog in the analysis of both crime scene samples and samples collected under state laws.⁴⁷⁰ Several factors contribute to this backlog, including high costs, a shortage of individuals trained to do the work, and insufficient equipment and storage.⁴⁷¹ To have an informed debate over whether to move forward with familial searches and to what degree, we need better evidence regarding the true effectiveness of DNA profiling in actually convicting criminals and assurances that crime labs are doing

468. Rosen, *supra* note 47, at 41.

469. Hugh Whittall, Nuffield Council on Bioethics, Presentation at the Genetic Privacy, DNA Databasing & Familial Searching Symposium (Mar. 17, 2008).

470. See Rothstein & Talbot, *supra* note 50, at 154; see also Maclin, *supra* note 7, at 166 (describing the passage of the DNA Analysis Backlog Elimination Act of 2000 to address the “backlog of samples waiting to be analyzed and catalogued in state and local DNA testing facilities”); Cook, *supra* note 41, at A5 (describing how law enforcement agencies are “overwhelmed with information” and the “large backlogs in processing DNA from crime scenes” and how, although the technique is legal in Massachusetts, state police don’t use it because they need more “manpower to do the work.”). “The National Institute of Justice estimated in 2003 that more than 350,000 DNA samples from rape and homicide cases were waiting to be processed nationwide. As of the end of [2005], more than 250,000 samples were backlogged in California alone.” Weiss, *DNA Bank*, *supra* note 24, at A6. In one instance, it took two years to process a crime scene sample, which ultimately matched that of a man whose DNA also matched samples from dozens of rapes, thirteen of which had been committed during the two years it took to process the crime scene sample. *Id.*

471. See Weiss, *DNA Bank*, *supra* note 24, at A6.

all they can (and are supported in their efforts) to maximize its potential.

Assuming we can establish a baseline effectiveness of DNA profiling practices generally, we also need to demonstrate that the expansion of DNA forensics to include familial searches would truly offer significant increases in the capacity to solve crimes. There is no doubt that when the technique works it seems particularly powerful. But there are reasons to question whether it is as powerful or effective as some of its proponents suggest.⁴⁷² Its success in noteworthy cases does not alone prove that the technique sufficiently justifies allowing our prima facie duty to protect the public to override the competing duties to protect against threats to privacy, civil liberties, and racial justice.

One concern raised by a critic of familial searching is the potential detrimental effect it may have on police investigations. High-tech tools like familial searching may seduce investigators away from more “traditional lines of investigation,” leading to “over-reliance” on familial searching.⁴⁷³ Further, the over-reliance may “taint” the investigation, resulting in “confirmation bias” when investigators selectively notice or focus on evidence that supports what the DNA evidence initially suggests.⁴⁷⁴ In short, investigators might follow the genetic leads at the expense of more traditional leads. There is the added risk that, over time, because of the seeming infallibility of genetics, investigators will use traditional investigative techniques – like “interviewing skills, creative problem-solving, and other softer forms of investigative technique” – less and less, gradually losing important forensic skills.⁴⁷⁵ All of this argues for restraint in the use of and reliance on familial searching.

A number of technical challenges further caution against moving too readily toward wide-scale familial searching. Systematic familial searches will inevitably increase costs for governments, which have increasingly limited resources.⁴⁷⁶ Indeed, familial searches could potentially overwhelm crime labs that already face “severe” backlogs, potentially further delaying the processing of DNA samples. A study in Britain “showed that the main factor that drove more matches was not having more offender profiles in the system, but having more fingerprints from crime scenes to match against.”⁴⁷⁷ Even if matches are

472. See *supra* notes 97–98 and accompanying text.

473. Murphy, *supra* note 62, at 17.

474. See *id* at 18 (noting that the “initial over-reliance on forensic evidence enhances the danger of confirmation bias”).

475. See *id* at 20.

476. Greely et al., *supra* note 24, at 253 (noting that the actual cost of looking for partial matches is likely to be low, but that the “cost of *following-up* the leads generated by family forensic DNA may be extensive”).

477. Cook, *supra* note 41, at A5.

made, investigators may not always follow up on them due to “disorganization or understaffing,”⁴⁷⁸ which may allow perpetrators to commit more violent crimes.⁴⁷⁹ In addition, familial searches will necessarily increase the amount of DNA testing in crime labs, which could increase the risk of errors.⁴⁸⁰ A recent study by the National Academy of the Sciences expressed concern about the inadequate certification of forensic scientists and inadequate staffing and oversight of crime labs,⁴⁸¹ all of which can contribute to errors. When arrests and convictions are based on DNA data, such errors increase the risk of wrongful arrests and convictions.⁴⁸² These concerns are exacerbated by a tendency for prosecutors to treat DNA forensics as infallible.⁴⁸³ Unless it is clear that familial searches offer greater forensic possibilities than other techniques, it is difficult to show that the prima facie duties in favor of familial searching justify overriding the prima facie duties against it.

Further, familial searching should only be used for the crimes most susceptible to resolution through DNA analysis.⁴⁸⁴ The anecdotes of success in familial searching could easily persuade policy makers that it should be used widely and frequently without considering the possibility that it may offer only marginal benefits in some instances. The tendency has been to expand the reach of DNA profiling broadly and quickly, without sufficient consideration as to whether these expansions really serve their intended goals or merely

478. *Id.*

479. *Id.*

480. Hibbert, *supra* note 7, at 803–04; Weiss, *DNA Bank*, *supra* note 24, at A6 (describing a series of studies that found “DNA lab accuracy to be ‘very uneven’”). In one instance of such mistakes, DNA analysis found a match between a juvenile offender’s DNA and the crime scene sample. But it turned out the juvenile had been a baby when the crime occurred. Ultimately they discovered the juvenile’s blood sample had been contaminated by the crime scene sample, when both were processed the same day. *Id.*

481. *All Things Considered* (NPR radio broadcast Feb. 18, 2009) (transcript available at <http://www.npr.org/templates/transcript/transcript.php?storyId=100813367>) (stating that “there’s no mandatory certification for forensic scientists, who are a diverse group of people who work in many parts of the criminal justice system. And as far as labs are concerned, they’re underfunded and understaffed. And many operate with no effective oversight.”); *see also* Wah, *supra* note 36, at 948–50.

482. *See* Weiss, *DNA Bank*, *supra* note 24, at A6.

483. *All Things Considered*, *supra* note 481 (describing a recent NAS report “critical of forensic analysts who assert in court that evidence besides DNA is a . . . [‘]match[’] to a particular person or source. [The report] points out that in forensic testimony, there’s often a failure to acknowledge uncertainty”). One estimate is that forensic evidence, when presented for the prosecution, is “exaggerated” and “overstated” sixty percent of the time. *Id.* Given these concerns, the NAS report “calls for distancing oversight of forensic science from law enforcement agencies, and proposes an independent National Institute of Forensic Science [because] . . . the problems are too systemic to be solved on a case-by-case basis by the courts.” *Id.*

484. *See* Williams & Johnson, *supra* note 31, at 241 (noting that there is a “relatively small number of crime scenes from which biological material [is] suitable for DNA profiling . . . [S]earchable DNA profiles were obtained from the examination of the scenes of less than 1% of recorded crimes”).

offer diminishing returns.⁴⁸⁵ Without appropriate limits and safeguards on familial searching, we run the risk of increasing the harms of privacy violations and exacerbating racial inequities while achieving too few of its promised benefits.

A related point is that the technique should be limited to solving only violent crimes like rape and murder.⁴⁸⁶ For one reason, these are often the kinds of crimes for which DNA profiling is particularly effective. In addition, it is the resolution of such serious crimes that offers the greatest public safety. To put it differently, familial searches in these contexts most satisfactorily fulfill the requirement that the *prima facie* duty to protect the public is serious and weighty enough to justify the violation of the *prima facie* duties to protect the privacy and civil liberty interests of those affected by familial searching.⁴⁸⁷

2. Minimizing the Collateral Harms of Familial Searching

Even in instances where the balance of competing *prima facie* duties argues in favor of familial searching, the overridden obligations to protect privacy and promote racial justice should continue to exert force on the manner in which we approach familial searching. In other words, in addition to ensuring that we actually fulfill the overriding *prima facie* duty to protect the public, we must also minimize the risks of breaching the outweighed *prima facie* duties as much as possible.⁴⁸⁸ Because partial matches can occur randomly, they do not prove a relative committed the crime; they only suggest that possibility.⁴⁸⁹ Searches for partial matches in the national DNA database could potentially produce a list of hundreds of offenders but no genetic relatives of the perpetrator.⁴⁹⁰ As a result, one of the risks of familial searching is that a number of people (offenders/arrestees and their families) may be investigated who are ultimately shown to have no connection to the crime, subjecting them to continued, long-term threats to privacy and civil liberties. It is possible, however, to assess the strength of the DNA evidence suggesting that the pivot and perpetrator of the crime are related and to set a minimum threshold before

485. For example, expanding the scope of crimes that subject one to DNA collection, without regard to the relationship between certain crimes and recidivism rates, will likely lead to only marginal increases in the ability to solve violent crimes. *See Jones v. Murray*, 962 F.2d 302, 313–14 (4th Cir. 1992) (Murnaghan, J., concurring in part and dissenting in part); *see also* Rothstein & Carnahan, *supra* note 20, at 128. The U.K. has acknowledged that indefinite expansion of DNA profiling will yield diminishing returns. NUFFIELD, *supra* note 47.

486. *See Wah*, *supra* note 36, at 945.

487. *Cf. CHILDRESS*, *supra* note 424, at 75 (suggesting that a just war requires that the *prima facie* duty in favor of going to war “be a serious and weighty one”).

488. *See infra* Part V.B.3–6.

489. *See supra* text accompanying notes 60–66.

490. *See Bieber & Lazer*, *supra* note 51; Greely et al., *supra* note 24, at 253; Wah, *supra* note 36, at 944; *supra* text accompanying notes 63–64.

identifying the partial match and pursuing familial investigations.⁴⁹¹ In addition, existing and future technologies that enhance the power of familial searching can be used to decrease the chance of false positives.⁴⁹² These technologies would significantly reduce the intrusiveness of familial searches to offenders and their relatives, as well as reduce the magnification of racial inequities caused by familial searching.⁴⁹³

For example, increasing the number of markers used in DNA profiling could significantly “increase the probability of identifying true genetic family relationships with confidence and would thereby eliminate spurious leads.”⁴⁹⁴ Crime labs might also focus on particular markers on the Y-chromosomes (“Y-STR analysis”) sons inherit from their fathers, and as a result, “eliminate 99% of those not related by male lineage.”⁴⁹⁵ Similarly, markers on mitochondrial DNA, which sons and daughters inherit from their mothers, could be used to expand the reach and accuracy of familial searches.⁴⁹⁶ Further research is necessary to establish precisely how reliable certain degrees of matching are in finding these familial connections. Even at this point, we have the means to determine with some accuracy the likelihood that a partial match indicates a biological, rather than random, link between the crime scene sample and the convicted offender’s sample.⁴⁹⁷ Thus, familial investigations should not be pursued unless investigators can establish a minimum likelihood of a true familial connection. In addition, a great deal of empirical work is required to

491. See Gabel, *supra* note 51, at 23–25 (describing various statistical methods to assess the strength of the hypothesis “that the pivot and source are related” and arguing in favor of the likelihood ratio, which establishes “how much more likely [it is] that the pivot and source are related than not”).

492. Wah, *supra* note 36, at 946.

493. David Kaye suggests that a population-wide DNA database would often reduce “the total number of people subjected to investigation, whether intrusive or not . . . because many individuals who might have been suspects under traditional methods of investigation will have been excluded by the initial database search.” Kaye, et al. *supra* note 52, at 4, 8. He suggests that “an innocent person will [more likely] become the focus of investigators’ attention—and even be convicted” with the current, smaller databases “because when potentially incriminating DNA evidence found at a crime scene cannot be matched to any known individual, suspicions will fall on one or more individuals for reasons both good and bad.” *Id.* While the issue of whether we should have universal databases is beyond the scope of this piece, as I suggested earlier, universal databases raise serious concerns about widespread threats to privacy and civil liberties because of the “indignity of inclusion in the DNA database” and the “greater power” it affords the police. See *supra* note 397 (quoting Rothstein & Talbot, *supra* note 50 at 155).

494. Greely et al., *supra* note 24, at 254.

495. Bieber et al., *supra* note 267, at 1315 (also describing other technologies like SNPs that might help hone in on true familial links); Murphy, *supra* note 62, at 47 (noting that Y-STR typing greatly winnows the number of matches, thereby limiting the false matches while not also decreasing the probability of finding a true lead to the source); Epstein, *supra* note 241, at 167.

496. Bieber & Lazer, *supra* note 51, at 20.

497. Cook, *supra* note 41, at A5.

establish the effectiveness of this technique generally and to find ways to maximize its potential. Just as we need good evidence on the effectiveness of DNA profiling generally, we need good evidence of the effectiveness of familial searches.

Y-STR and other such analysis may actually reduce the intrusiveness of familial searches for both the genetic informant and his or her relatives. Of course, we need to continue to gather data about the different effects some of this refinement analysis may have on different groups. As noted earlier, Y-STR typing may draw disproportionate degrees of attention to different ethnic groups.⁴⁹⁸ This kind of analysis could be done in crime labs before any names have been linked or assigned to partial matches. As a result, many offenders who might otherwise have been questioned about their biological relatives would not be questioned, eliminating one of the potentially most invasive aspects of familial searches for the genetic informant.⁴⁹⁹ Further, this analysis would reduce the number of families actually investigated and interrogated by law enforcement, thereby reducing the number of invasive interactions and all the consequential threats to the family's privacy.⁵⁰⁰ In addition, by reducing the number of families investigated, this analysis would reduce the magnifying effect of familial searches on the underlying racial disparities in conviction and arrest rates.

Of course, when this additional analysis suggests a strong probability that the offender's (or arrestee's) relative is the source of the crime scene sample, that offender (or arrestee) and his family will not be spared the risks of privacy intrusions. In these instances, however, the justification for pursuing these leads would be based on a higher probability of a real biological link to the perpetrator of the crime. We may be especially willing to let the prima facie duty to protect privacy cede to the prima facie duty to protect the public so long we limit familial searching to the resolution of serious crimes (where the latter prima facie duty is especially compelling).

The use of these safeguards, however, is complicated by the fact that the federal government and many state legislatures have not specifically authorized some of these DNA tests on forensic samples. As a result, some worry that such analysis raises privacy issues because it goes beyond the expectations of those from whom samples have been compulsorily collected.⁵⁰¹ In fact, most such additional tests represent minimal privacy intrusions that do not strongly implicate personhood interests. These additional tests simply generate another form of iden-

498. See *supra* text accompanying notes 399–400.

499. See *supra* text accompanying notes 226–29; see also Rosen, *supra* note 114.

500. See *supra* text accompanying notes 260–74, 368–80.

501. Tania Simoncelli, American Civil Liberties Union, Presentation at the Genetic Privacy, DNA Databasing & Familial Searching Symposium (Mar. 17 2008); Murphy, *supra* note 62, at 22.

tifying information, much like the authorized CODIS profile. In other words, they should not reveal medical or other sensitive information⁵⁰² and therefore are no more threatening to privacy than typical DNA profiling.⁵⁰³ One commentator argues, however, that “Y-STR testing indisputably reveals biological relationships, and has been shown to have strong probative value even for possibly identifying surnames” and therefore it’s really not as “junky” DNA as people imagined.⁵⁰⁴ I would argue, however, that its potential to reveal biological relationships is part of its strength in familial searching because it reduces potential investigations of families where there is no biological relationship between the offender with the partial match and the perpetrator of the crime.⁵⁰⁵ This additional analysis also does not heighten the risks posed by obtaining and retaining biological samples.⁵⁰⁶ That risk arises with the initial collection of samples, whether or not further analysis is done.⁵⁰⁷ Thus, although this additional testing goes beyond the explicit authorization of the federal government (and most state legislatures), it likely poses no additional privacy threats beyond those created by the establishment of DNA databases in the first place.

Even so, to reassure crime labs that they are not violating the law, legislatures should explicitly authorize these kinds of tests. Just as one aspect of just war analysis requires that the government explain its actions and intentions to those affected,⁵⁰⁸ so too must the legislature explain its intentions and actions regarding familial searching. Legislative authorization of these additional DNA tests fulfills this obligation of public explanation, in part by explicitly articulating the details of the government analysis of one’s DNA.

Finally, less technical measures can also reduce the intrusive aspects of familial searching. Legislation might require not only that the leads from partial matches are narrowed through additional testing before the identity of the partial match is released, but also that investigators demonstrate that they have followed up without success on more traditional leads. In short, the goal is to make the release of the

502. *See supra* text accompanying notes 150–151.

503. Care would of course have to be taken to ensure that the tests did not expose information about coding regions of the genome or other information that could reveal predispositions to disease or behavior. *See supra* note 155 and accompanying text.

504. Murphy, *supra* note 62, at 22.

505. I do concede, though, that there are risks that Y-STR typing may not work equally effectively in different ethnic groups, which raises problems related to the exacerbation of racial disparities. *See supra* text accompanying notes 399–400, 498.

506. *See supra* text accompanying notes 152–58, 169–73, 177–94.

507. While STR analysis does not heighten the risks of collection and retention, it does potentially raise the risk that once someone has pulled the retained sample for this analysis they could probe it for other things. But of course, they could always theoretically do any kind of analysis on any sample retained. As a result, this risk is not directly linked to doing further analysis on the samples.

508. *See supra* text accompanying note 457.

partial match's identity and "genetic sampling of a relative-suspect the last step."⁵⁰⁹ In addition, investigators could be required to analyze voluntarily collected samples within a short, though reasonable, time frame so that exclusions can be made rapidly to limit the cloud of suspicion that otherwise might hang over the investigated relatives.⁵¹⁰ Such measures would decrease, to some extent, the intrusive aspects of investigating familial relatives. In addition, it might actually make relatives more willing to volunteer samples and cooperate with investigators, presumably enhancing the investigations.

3. Minimizing the Disclosure of Familial Secrets

Further efforts could also be made to minimize the specific privacy threat that familial searches might expose secrets about infertility, adoption, infidelity, and even incest. As suggested in Part III, this is a threat to all involved: the offender (or arrestee), his or her relatives, and the family as a whole.⁵¹¹ How likely these risks are depends on how law enforcement handles discoveries about the lack of presumed biological connections or the discovery of hidden connections.⁵¹² As suggested earlier, many genetic counselors believe there is strong reason not to reveal such family secrets even in a setting as nurturing as genetic counseling.⁵¹³

Even assuming one believes that genetic counselors have an obligation to disclose information about non-paternity to families, genetic counseling is hardly parallel to law enforcement. Any arguments favoring disclosure of such secrets in genetic counseling simply do not exist in the context of police investigations. Whereas genetic counselors attempt to create a safe, supportive environment to assist people with emotionally difficult decisions concerning reproduction and family, law enforcement cannot strive to be so nurturing. Police officers have been trained in a particular style of interrogation that is designed to assist in criminal investigations — a style substantially more confrontational than genetic counseling.⁵¹⁴ Indeed, non-directive genetic

509. See Murphy *supra* note 62, at 49. California imposes numerous requirements before the name of a pivot will be released, including that the pivot and source match by at least 15 alleles. Gabel, *supra* note 51, at 37–38. As Gabel notes, these requirements come close to demanding probable cause before identifying the pivot person and pursuing familial searching. See *id.*; *supra* note 227.

510. See Gabel, *supra* note 51, at 50 (suggesting a one week limit); *supra* text accompanying note 273.

511. See *supra* text accompanying notes 231–34, 240, 355–58, 368–70.

512. See *supra* text accompanying notes 241–43, 372.

513. See *supra* text accompanying notes 381–84.

514. Police interviews and interrogations are not technically the same thing. "An interview is non-accusatory, 'free flowing and relatively unstructured'; its purpose is to gather information. An interrogation, on the other hand is 'accusatory,' conducted 'in a controlled environment,' and involves 'active persuasion.'" Charles D. Weisselberg, *Mourning*

counseling⁵¹⁵ is the antithesis of the kind of confrontation that can occur in police interrogations.

Further distinguishing the two areas is the fact that police officers do not owe the individuals whom they investigate the fiduciary duties that health-care professionals owe their patients. In addition, unlike genetic counselors, police officers do not ordinarily discuss patterns of inheritance with those whom they interrogate. While issues of inheritance are raised by virtue of conducting familial searches, the presumed biological relationship with the interrogee and the convicted criminal is the link to the investigation, not its focus. In contrast, the heart of genetic counseling centers on expectations of biological relatedness among family members. As a result, people investigated by the police, even through familial searches, will have fewer expectations of full disclosure regarding patterns of inheritance than they would in a clinical genetics setting. Thus, any failure to discuss inadvertent discoveries about unexpected genetic relationships or their absence seems less problematic in criminal investigations than in genetics. Obligations of information disclosure in the contexts of genetic counseling or medical ethics just do not exist with respect to law enforcement.

The fact that many genetic counselors are reluctant to reveal undisclosed non-paternity, even in their more supportive world, emphasizes why law enforcement should not disclose genetic secrets in the context of familial searches. The risks that make genetic counselors hesitant to disclose non-paternity would also exist with familial searches: the potential disruption to the integrity of the family and the risk of physical and emotional abuse of certain members of the family.⁵¹⁶ Indeed, the risks of disclosure in this context seem even greater than in the genetics context. In the often-confrontational environment of law enforcement, the family and individual family members may not be well equipped to deal with the unveiling of these secrets and their implications. The police force's lack of training for this kind of disclosure and the lack of emotional support and follow-up that would be required can only intensify the risks. Moreover, the surrounding circumstances, quite apart from the nature of the interrogation, make the family especially vulnerable — someone in the family is under suspicion because of a convicted or once-arrested relative. As a result, the risk of these disclosures to the integrity of the family and the iden-

Miranda, 96 CAL. L. REV. 1519, 1531 (2008) (citations omitted). Although the two are distinct, an interview can merge into an interrogation if police officers become “reasonably certain of the suspect’s guilt.” *Id.* A study of police training manuals shows that police officers are trained to use various steps during interrogations that contain “compelling pressures,” *id.*, including “increasing suspects’ anxiety” and “instilling a feeling of hopelessness,” *id.* at 1537.

515. Suter, *supra* note 260, at 233–35.

516. *See supra* text accompanying notes 376–80.

tities of the family members is especially problematic from a privacy perspective. Thus, policies and regulations that not only discourage the disclosure of these discoveries to the family, but that also specifically train police officers to conduct interrogations in ways that do not inadvertently disclose these facts, would go a long way toward minimizing some of the privacy concerns associated with familial searching.

4. Prohibiting Surreptitious Collection of Samples

To draw upon the just war analogy again, even when our ethical analysis of competing prima facie duties argues in favor of an actual obligation to go to war, we are not free to use any weapons and war tactics that we choose. Rather we must choose our weapons so as to reduce the collateral effects of overriding the prima facie duty to cause no harm. Similarly, in the context of familial searches, the “moral traces” of our duty to protect privacy and civil liberties requires careful consideration of which “weapons” in the arsenal of DNA profiling we can be use to minimize the consequences of outweighing some these prima facie duties. One of the most vexing aspects of familial searching is the lifetime surveillance of individuals who happen to be unlucky enough to be related to someone with a genetic profile in the national database. The possibility that the police may clandestinely collect and analyze their DNA samples — a non-consensual probing of personal and otherwise hidden information — from people presumed innocent seriously threatens their civil liberties. When one considers that such samples and profiles might be kept indefinitely without restrictions on their use,⁵¹⁷ the threat is even greater. Surreptitious collection of DNA samples, either because of partial matches or for indirect testing of a suspect via a family member, is precisely the kind of expansion of police powers that threatens to undermine the Fourth Amendment objective to protect “the privacy and dignity of our citizens [from] being whittled away by sometimes imperceptible steps.”⁵¹⁸ It is a case where “illegitimate and unconstitutional practices get their first footing . . . by silent approaches and slight deviations from legal modes of procedure,”⁵¹⁹ and it is an example of the government’s intrusion “into the secret regions of man’s life at will.”⁵²⁰ The government would likely defend every use of DNA profiling as a means to promote public safety. But when the intrusions become too vast and unlimited, the prima facie duty to

517. See *supra* text accompanying notes 171–73.

518. *Osborn v. United States*, 385 U.S. 323, 343 (1966) (Douglas, J., dissenting).

519. *Boyd v. United States*, 116 U.S. 616, 635 (1886).

520. *Osborn*, 385 U.S. at 343 (Douglas, J., dissenting).

promote public safety must yield to the prima facie duty to protect civil liberties.

While it likely would be unconstitutional to *require* innocent relatives to provide DNA samples for genetic analysis given the bodily intrusion that it would entail, as noted earlier⁵²¹ it is unclear whether police officers would have the constitutional authority to collect abandoned DNA samples surreptitiously.⁵²² Given this uncertainty, and the presumed innocence of the partial match's relatives, an essential prophylactic against such intrusions would be legislation explicitly prohibiting law enforcement from obtaining genetic samples in this manner without true probable cause, a search warrant⁵²³ or informed consent.⁵²⁴ Without such legislation, as we saw in the case of Willard Brown, police may well go to such lengths. If we also consider the possibility that such samples and profiles might be kept indefinitely, this risk becomes still more troubling.

5. Purging Records of Exonerated Individuals and Restricting Uses of Samples

One of the most troubling and unnecessary threats to the privacy and civil liberties of the relatives of partial matches (and exonerated arrestees) is the possibility that their sample and profile could be retained indefinitely, even if the relative (or arrestee) is exonerated with respect to the crime that led to the collection of DNA. These practices are another “weapon” in the arsenal of familial searching and DNA profiling that must be prohibited because they give the police unfettered access to identifying information of people who are *actually* innocent as well as continued access to much more personal and private biological information contained in the samples.⁵²⁵

Legislation should therefore require crime labs to purge the records, profiles, and samples of individuals who have been exonerated of the crimes for which their DNA was collected, including arrestees and individuals tracked through familial searching. In addition, just as the federal government prohibits the inclusion of voluntary samples in its database, so should all state legislatures. In other words, state laws should expressly prohibit the creation of any shadow or rogue data-

521. Cf. *supra* text accompanying notes 296, 300.

522. See *supra* text accompanying notes 286–339. See Murphy, *supra* note 62, at 41 observing that “familial searches . . . fall between the cracks of a range of uncertain constitutional doctrines”). Not all commentators are so skeptical. See Gabel, *supra* note 51, at 42 (arguing that “there is nothing that prevents law enforcement from obtaining biological material ‘left behind’ by a target in the course of a day”); Epstein, *supra* note 241, at 145, 157–58 (arguing that there is no expectation of privacy for abandoned DNA).

523. This would probably require some corroborating evidence.

524. See Epstein, *supra* note 241, at 169–70.

525. See *supra* text accompanying notes 213–24, 344–54; Epstein, *supra* note 241, at 167–68; Gabel, *supra* note 51, at 50; Murphy, *supra* note 62, at 51.

bases (containing samples collected surreptitiously or through consent) and should impose strict penalties for violations.⁵²⁶ The combination of the highly personal information contained in the samples and the fact that the relatives would be included in such undocumented databases simply because of the misfortune of being related to a convicted offender or arrestee is highly disturbing. This action cuts against the deep value of privacy and civil liberty while offering little public benefit.

To be sure, there is a possibility that long-term retention might result in the identification of criminals down the road, but so would universal data banks. Nevertheless, the benefit of such expansions are likely to be marginal.⁵²⁷ Unless we decide as a culture that we are willing to sacrifice the privacy interests of everyone through universal data banking, a direction many argue undermines privacy interests and civil liberties too greatly,⁵²⁸ we cannot justify the databanking of the DNA profiles of only some innocent individuals because they happen to be genetically related to convicted offenders. Their privacy interests are weighty enough to cut against any possible, and likely only slight, increase in crime detection.

Finally, whenever sensitive information is collected and centralized, there are concerns about adequate security so that “people are protected against their genetic profiles being used improperly by people outside law enforcement, such as insurance companies or prospective employers.”⁵²⁹ As a result, at a minimum, state and federal laws must be modified to ensure that the only authorized use of DNA samples is for DNA identification. Statutes must explicitly prohibit genetic analysis that mines the samples for personal data about disease, traits, and behavior. In addition, policy makers must carefully consider whether the retention of samples from convicted individuals can be justified in light of the privacy risks it presents, especially when legislation does not guarantee that the government or third parties cannot access the stored samples. A healthy dose of skepticism may be appropriate in considering whether the possibility of new profiling techniques warrants the long-term retention of samples, given that such retention opens the door to unfettered police access to a broad range of information that extends beyond merely identifying information.⁵³⁰

526. See *supra* text accompanying notes 348–54.

527. See NUFFIELD, *supra* note 47, at 15.

528. See, e.g., Rothstein & Talbott, *supra* note 50, at 160.

529. Hall, *supra* note 59.

530. See Rothstein & Talbott, *supra* note 50, at 159.

6. Minimizing the Threats to Racial Justice

Given that the communities most affected by crime are the very communities that suffer from biases in the criminal justice system, the tension between the various competing obligations is especially great. Whether we do familial searching, law enforcement must attend to the underlying biases that exist with respect to arrest, prosecution and conviction. This is a tall order, the implementation of which is well beyond the scope of this Article. Many of these problems stem from deep societal tensions that extend beyond law enforcement.⁵³¹ While familial searches do not per se create racial inequities, they magnify underlying social inequities. To the extent that law enforcement can take action to minimize those inequities, it has a strong societal obligation to do so.

One might think that since racial injustices stem from deep societal biases, the way in which we handle familial searches will ultimately have little bearing on racial justice. In fact, however, some of the recommendations described earlier may help minimize the tendency of familial searches to magnify the racial injustices of DNA profiling. As noted in Part V.B.2, using additional markers that reduce spurious leads and enhance the power of familial searching would reduce the number of minority (and all) relatives under government surveillance. Of course, there is the caveat that some markers like those on the Y chromosome are not equally effective in enhancing the power of familial searching in all ethnic groups. This argues for additional research to find better markers for those populations that are less well served by Y-STR typing. Such additional analysis would slow the growth of minority over-representation in the DNA databases. Of course, this is not a perfect solution — there will nevertheless still be some magnification of minority representation in DNA databanks. All things considered, however, we may be more willing to let our prima facie duty to promote racial equity yield to our duty to promote public safety if we limit familial searching to serious crimes like rape and murder, where the duty to protect public safety is particularly compelling, and if special techniques are employed to reduce the harms to racial justice.

Finally, the destruction of the physical sample, particularly from innocent individuals, might minimize the additional distrust minorities may feel about government access to their samples given the unfortunate and grievous government violations against African Americans in such studies as the Tuskegee syphilis experiments.⁵³²

531. See THE SENTENCING PROJECT, *supra* note 394.

532. See Epstein, *supra* note 241, at 167–68.

VI. CONCLUSION

While the recommended safeguards cannot completely alleviate the threats that familial searching poses to privacy, civil liberties, and racial justice, they can do a great deal to reduce these threats. Many of these measures also have the potential to maximize the effectiveness of this technology so it can best fulfill the duty to find and convict criminals, honor victims' interests, and exonerate the innocent. The attempt to find a proper balance between the competing duties will inevitably be imperfect. Any choice will necessarily infringe on certain duties we care about deeply. Deciding what this balance should be with respect to familial searching — and other technologies that serve the public interest but also challenge deeply held values — will always be difficult in a society with diverse views.

Given all that is at stake, the government should ensure that any such technological expansion has true legitimacy. Such legitimacy depends not only on a careful, considered balancing of the many goods at stake, but also on public authorization and transparency. In many jurisdictions, familial searching has been developing in an ad hoc, unregulated manner, without the oversight and public authorization necessary for its legitimacy.⁵³³ Much of what is at stake in the context of familial searching and DNA profiling, generally, is the public's trust in law enforcement. If the public believes that police are using technologies developed for one purpose in new and unauthorized ways that infringe on the privacy interests of innocent individuals, DNA profiling generally may lose public support.

Even more important than achieving a particular balance between our competing *prima facie* duties to promote privacy, justice, public safety, victims' interests, etc. is the need for public input and debate so that we can move toward a shared understanding of what this balance should be and so that we can ensure that this shared understanding underlies the government's decision to choose a particular course.

As John Rawls points out, it is crucial for a "well-ordered society" to resolve matters involving important values like justice and privacy based on "the ideals and principles expressed by society's conception of political justice, and *conducted open to view on that basis*."⁵³⁴ This kind of public reason is especially important when the citizens of a democratic society "exercise final political and coercive power over one another in enacting laws."⁵³⁵ With the many privacy

533. Ram, *supra* note 115 (describing much of the state policymaking surrounding DNA databases as occurring "in a fashion that is nearly impenetrable to public oversight" and that undermines efforts to bring issues surrounding familial searching "into the open").

534. JOHN RAWLS, *POLITICAL LIBERALISM* 213 (1993) (emphasis added); *see also* Murphy, *supra* note 62, at 33–35.

535. RAWLS, *supra* note 534, at 214.

and justice issues at stake in familial searching, this is precisely the sort of issue for which public reason is crucial. My hope in this piece is to contribute to such a public debate.