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## **DNA Databases and Discarded Private Information: “Your License, Registration, and Intimate Bodily Details, Please”**

*James F. Van Orden*<sup>1</sup>

### **I. Introduction**

In the small town of Truro, Massachusetts, three years had passed and the police could still not find the killer of freelance fashion writer Christa Worthington. Christa was found stabbed to death with her two-year-old daughter “clinging to her body.”<sup>2</sup> Local police found semen on Worthington’s body, providing a DNA sample, an important clue to help solve the case.<sup>3</sup> As has occurred on other occasions in the United States and abroad, investigators deployed a so-called “DNA Dragnet” of all 790 males in the town.<sup>4</sup> Police asked men in Truro to provide investigators with a DNA sample in order to check it against the DNA found on Worthington. While the program was voluntary, investigators indicated that those who were unwilling to provide a sample would be viewed with suspicion by the police.<sup>5</sup> Sergeant David Perry of the Truro Police Department stated, “[w]e’re trying to find that person who has something to hide.”<sup>6</sup> In addition, the

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<sup>2</sup> Pam Belluck, *To Try to Net Killer, Police Ask a Small Town’s Men for DNA*, N.Y. TIMES, Jan. 10, 2005, at A1.

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*; see also SAMUEL WALKER, DEPT. CRIM. JUST., U. NEB. OMAHA, POLICE DNA “SWEEPS” EXTREMELY UNPRODUCTIVE: A NATIONAL SURVEY OF POLICE DNA “SWEEPS” (Sept. 2004) (finding that DNA dragnets are “extremely unproductive as an investigative technique.”), available at [www.policeaccountability.org/dnareport.pdf](http://www.policeaccountability.org/dnareport.pdf) (on file with the North Carolina Journal of Law & Technology).

<sup>5</sup> Belluck, *supra* note 2, at A1 (reporting that “Sgt. David Perry of the Truro Police Department and other law enforcement authorities here say that the program is voluntary but they will pay close attention to those who refuse to provide DNA”).

<sup>6</sup> *Id.*

American Civil Liberties Union (ACLU) repeated the alleged remarks of a State Trooper, that, “[they] have an awareness of people who fail to consent.”<sup>7</sup>

The response of local residents was been mixed; some men believed they had nothing to lose and should aid the police in tracking down the killer by providing a DNA sample.<sup>8</sup> Others were more suspicious of police action generally and had privacy concerns.<sup>9</sup> The ACLU has called for an immediate stop to the DNA collection due to privacy concerns and the fact that DNA Dragnets like the one in Truro are typically unsuccessful.<sup>10</sup> In fact, DNA testing ultimately yielded an arrest in the Worthington case, although the arrestee was someone the police considered a suspect as early as 2002.<sup>11</sup> Thus, DNA testing of those suspected by law enforcement officials, not the generalized DNA Dragnet, led to an arrest.

As heinous crimes have remained unsolved, investigators have turned to wide scale DNA searches in numerous towns across the United States in an attempt to flush out dangerous perpetrators.<sup>12</sup> After briefly reviewing the use of DNA by law enforcement officials in the United States and discussing historic treatment of DNA Dragnets in Fourth Amendment jurisprudence, this Recent Development considers the legality of DNA Dragnets after *Caballes v. United States*, a drug-sniffing dog case that may have implications for the use of DNA technology. Moreover, this Recent Development argues that the traditional “reasonable expectation of privacy test” is inappropriate given the trend for increased use of DNA by investigators and private actors; as DNA

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<sup>7</sup> Letter from John Reinstein, Legal Director, Massachusetts ACLU, to District Attorney Michael O’Keefe, *at*

<http://www.aclu-mass.org/Truro/Truro%20DNA%20Letter%201-10-05.pdf> (Jan. 10, 2005) (on file with the North Carolina Journal of Law & Technology).

<sup>8</sup> See Belluck, *supra* note 2, at A1. For example, one resident stated, “[m]ost people, I think, agree that they should do whatever it takes to get the guy.” *Id.*

<sup>9</sup> *Id.* Another resident stated, “I think it’s outrageous . . . . I really think they’re usurping my civil rights.” *Id.*

<sup>10</sup> Reinstein, *supra* note 7, at 3.

<sup>11</sup> Pam Belluck, *DNA Test Leads, at Last, to Arrest in Cape Cod Case*, N.Y. TIMES, Apr. 18, 2005, at A1.

<sup>12</sup> Walker, *supra* note 4.

analysis becomes more common in society, it has the potential to open the door to prevalent, unchecked use of DNA sampling in the absence of the protections provided either by an alternative legal standard or statutory privacy protections.

This Recent Development proposes that Fourth Amendment rights are inadequately protected in the face of rampant technological change fueled by scientific developments that were not present in the arenas of prior Fourth Amendment jurisprudence. Fourth Amendment privacy-protecting safeguards cannot sufficiently protect against a drift into a future in which the intimate secrets of one's body are unlocked and held by the government for any future use. Therefore, this Recent Development argues that prophylactic measures are necessary to strike the proper balance between the legitimate state interest in collecting accurate and sufficient information about the criminals and the individual's interest in adequate protection for the vast personal and private information contained within DNA. With appropriate limits on what information the government may glean from DNA samples, DNA testing and analysis on a wide scale can balance privacy interests with the important governmental interest of accurate law enforcement.

## II. A Brief History of DNA Use in Criminal Investigations

Jim Watson and Francis Crick first understood the structure of deoxyribonucleic acid ("DNA") as "the informational molecule of human heredity."<sup>13</sup> Each person's DNA, with the exception of identical twins, is different from that of every other human being.<sup>14</sup> All human cells contain DNA, which remains unchanged during one's entire life.<sup>15</sup> DNA samples can be attained from numerous

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<sup>13</sup> James D. Watson & Francis C. Crick, *Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acids*, 171 NATURE 737 (1953); see also GENETIC SECRETS: PROTECTING PRIVACY AND CONFIDENTIALITY IN THE GENETIC ERA, 3 (Mark A. Rothstein ed., Yale University Press 1997).

<sup>14</sup> COMM. ON DNA TECH. IN FORENSIC SCI., NAT'L RES. COUNCIL, DNA TECHNOLOGY IN FORENSIC SCIENCE 9 (1992), at <http://books.nap.edu/books/0309045878/html/>.

<sup>15</sup> NAT'L COMM'N FOR THE FUTURE OF DNA EVIDENCE, DNA EVIDENCE: A GUIDE FOR VICTIM SERVICE PROVIDERS, at

bodily materials, including blood, saliva, skin tissue, saliva, sweat, hair and bone.<sup>16</sup> For example, DNA can be retrieved from the rim of a bottle or can or from dental floss.<sup>17</sup>

Due to its uniqueness, DNA has been hailed for its high level of certainty in the criminal investigation context.<sup>18</sup> For example, Christopher Asplen, a federal prosecutor and former executive director of the U.S. Justice Department's National Commission on the Future of DNA Evidence stated, "[i]t's the most significant advancement in investigative tools at least in this [past] century."<sup>19</sup> Some commentators describe DNA as a panacea in terms of exonerating the wrongly convicted innocent.<sup>20</sup> DNA is also routinely collected at crime scenes and used at the outset of investigations in order to solve crime.<sup>21</sup>

In addition, DNA is collected and analyzed, and the resulting DNA profiles are added to databases for predetermined populations.<sup>22</sup> Generally, the relevant population has expanded over time.<sup>23</sup> While DNA was initially collected only from sex offenders, now most states mandate DNA sampling of all

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<http://www.ncjrs.org/pdffiles1/nij/bc000657.pdf> (Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology).

<sup>16</sup> *Id.* at 2.

<sup>17</sup> *Id.* at 6.

<sup>18</sup> Kenneth Jost, *DNA Databases*, in CQ RESEARCHER ON CONTROVERSIES IN LAW AND SOCIETY, 1 (CQ Press 2001). Prosecutor Asplen stated "[i]t's one of the most accurate technologies we have." *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> See James P. O'Brien Jr., *DNA Fingerprinting: The Virginia Approach*, 35 WM. & MARY L. REV. 767, 778 (1994) (discussing problems in DNA labs such as environmental contamination).

<sup>21</sup> In fact, this occurred in the Truro case, where the ex-husband and father of Worthington were both investigated, gave DNA samples, and were ruled out due to a lack of match. See Belluck, *supra* note 2, at A1.

<sup>22</sup> See Sandra J. Carnahan, *The Supreme Court's Primary Purpose Test: A Roadblock to the National Law Enforcement DNA Database*, 83 NEB. L. REV. 1, 3-6 (2004) (providing an overview of the federal Combined DNA Index System or CODIS); see also Warren R. Webster, Jr., *DNA Database Statutes and Privacy in the Information Age*, 10 HEALTH MATRIX 119 (2000) (arguing that states have failed to adequately address privacy concerns).

<sup>23</sup> See John P. Cronon, *The Next Frontier of Law Enforcement: A Proposal for Complete Databanks*, 28 AM. J. CRIM. L. 119, 132 (Fall 2000) (documenting the expansion of DNA databases occurring in the states).

convicted violent felons. Moreover, a few states have enacted legislation providing for the collection of DNA from all persons arrested.<sup>24</sup> According to database proponents, the expansion of DNA databases increases the probability that police will match DNA found at both past and future crime scenes. This would lead to more efficient and accurate crime fighting.<sup>25</sup> One group lobbying for the expansion of DNA databases argues that “[s]tatistics show that as many as half of all violent criminals have non-violent prior convictions. If a state takes DNA from violent offenders only, the likelihood of solving a particular rape or murder are [sic] reduced by 85%.”<sup>26</sup> Similarly, in calling for such an expansion, Paul B. Ferrara, the director of Virginia’s Forensic Science Division stated, “If we took samples from suspects at arrest and searched a database of samples from crime scenes, the advantages to public safety are going to be tremendous.”<sup>27</sup>

The crime-fighting power and accuracy of DNA has driven the expansion of DNA collection. All fifty states have DNA Databases of some kind.<sup>28</sup> Every state collects and enters DNA information from all persons convicted of sex crimes into a database.<sup>29</sup> As of January, 2005, a total of thirty-eight states require DNA samples from all convicted felons.<sup>30</sup> While forty-

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<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> Applied Biosystems, *Forensic DNA Databases*, at <http://www.dnaresource.com/DNA%20Database%20Brochure.pdf> (last visited Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology).

<sup>27</sup> Jost, *supra* note 18, at 4.

<sup>28</sup> *Id.* at 6; see also *State DNA Databases Laws: Qualifying Offenses*, at <http://www.dnaresource.com/Table%20of%20State%20DNA%20Laws%20-%202004.pdf> (last visited Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology).

<sup>29</sup> Applied Biosystems, *Violent Crime Requirements*, at <http://www.dnaresource.com/Murder,%20Assault%20&%20Battery%20Map.pdf> (last visited Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology); see also Applied Biosystems, *Sex Offender Requirements*, at <http://www.dnaresource.com/Sex%20Offender%20Map.pdf> (last visited Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology).

<sup>30</sup> Applied Biosystems, *All Felons Requirements*, at <http://www.dnaresource.com/All-Felons%20Map.pdf> (last visited Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology).

seven states require DNA samples for criminals convicted of murder and assault and battery, the remaining three require DNA just for criminals convicted of murder.<sup>31</sup>

Significant privacy concerns are implicated by the use of DNA on a wide level. While DNA has been compared to fingerprints as a crime solving tool,<sup>32</sup> commentators have pointed out that DNA potentially provides vast amounts of personal information including intimate details regarding physical health and behavioral characteristics,<sup>33</sup> whereas the information from fingerprints is simplistic: Is it a match or not? In *Davis v. Mississippi*,<sup>34</sup> the Supreme Court held that detentions premised solely on the discovery of an arrestee's fingerprints, while subject to the Fourth Amendment's protections, benefit from a sometimes-relaxed notion of probable cause.<sup>35</sup> The Court reasoned that "[d]etention for fingerprinting may constitute a much less serious intrusion upon personal security than other types of police searches and detentions. Fingerprinting involves none of the probing into an individual's private life and thoughts that marks an interrogation or search."<sup>36</sup> While DNA can be used to discern whether a person's DNA matches that left at a crime scene, it also may reveal information of a highly intimate and personal nature,

<sup>31</sup> Applied Biosystems, *Violent Crime Requirements*, *supra* note 29.

<sup>32</sup> Thomas F. Wider, *Privacy Protection is Needed for DNA*, 2002 LAW REV. M.S.U.-D.C.L. 927, 928 (2002).

<sup>33</sup> See Jill C. Shaefer, *Profiling at the Cellular Level: The Future of New York State DNA Databanks*, 14 ALB. L.J. SCI. & TECH. 559, 576 (2004); see also Maya Harris, American Civil Liberties Union, *Proposition OKs Seizing, Storing DNA of Innocent People*, at <http://www.aclunc.org/opinion/040805-dna.html> (July 28, 2004 ) (on file with the North Carolina Journal of Law & Technology). Harris describes DNA as

[m]ore than just a "fingerprint," which merely provides a method of identification[;] your DNA exposes the most intimate details about you and your family. DNA reveals your entire genetic makeup, ancestry, susceptibility to or carrier status for certain diseases. Studies claim to link genetic markers with Alzheimer's, schizophrenia, drug use, and sexual orientation.

*Id.*

<sup>34</sup> 394 U.S. 721 (1969).

<sup>35</sup> *Id.* at 727.

<sup>36</sup> *Id.*

including an individual's propensity to get certain diseases and behavioral characteristics.<sup>37</sup> As technology progresses, scientific advances will beget further analysis of the person from his or her DNA.

### III. The Fourth Amendment and DNA

The Fourth Amendment of the United States Constitution provides:

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.<sup>38</sup>

The Constitution's framers enacted the Fourth Amendment in order to prevent warrantless physical searches of personal residences by agents of the government.<sup>39</sup> Its contours have extended well beyond the protection of the home to include other areas; it has been applied in settings ranging from the basic search and seizure of persons,<sup>40</sup> to the use of drug sniffing dogs during a routine traffic stop<sup>41</sup> and drug testing of students.<sup>42</sup>

The threshold Fourth Amendment question is whether a certain government action is a constitutional search or seizure. If state actions do not constitute a search or seizure, Fourth

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<sup>37</sup> Webster, Jr., *supra* note 22, at 139 ("Although DNA might not provide the key to unlocking the human personality, it does contain information that could be damaging to donors because of the unknown potential as an indicator for other aspects of human life, from behavior to disease.")

<sup>38</sup> U.S. CONST. amend. IV.

<sup>39</sup> David E. Steinberg, *High School Drug Testing and the Original Understanding of the Fourth Amendment*, 30 HASTINGS CONST. L.Q. 263, 270 (2003) (compiling the existing literature and documentary evidence on the historical underpinnings of the Fourth Amendment, arguing that the sole purpose was to protect residences).

<sup>40</sup> See Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349 (1974) (describing Fourth Amendment law).

<sup>41</sup> *Illinois v. Caballes*, 125 S. Ct. 834, 837–38 (2005).

<sup>42</sup> *Veronia Sch. Dist. 47J v. Acton*, 515 U.S. 646, 663–64 (1995).



Amendment protections such as probable cause and reasonableness do not apply and the government may proceed without any particularized suspicion that that person is involved in a crime.<sup>43</sup> For example, it is not a “search” if the police are in a place where they have a legal right to be and they observe contraband in plain view.<sup>44</sup> Next, if governmental action is considered a search that implicates the Constitution, is it unreasonable, and therefore impermissible?<sup>45</sup> Whether a governmental intrusion is reasonable depends on a balancing of law enforcement interests against the individual’s security and privacy interests at stake in the particular setting.<sup>46</sup>

The modern foundational case for Fourth Amendment jurisprudence is *Katz v. United States*.<sup>47</sup> In *Katz*, the police utilized an electronic listening and recording device on the exterior of a public telephone booth to listen to and record the conversation of a suspect involved in illegal gambling.<sup>48</sup> The Supreme Court provided that:

The Fourth Amendment protects people, not places. What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected.<sup>49</sup>

Thus, the Court reasoned that the “[g]overnment’s activities in electronically listening to and recording the petitioner’s words violated the privacy upon which he justifiably relied while using the telephone booth and thus constituted a ‘search and seizure’

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<sup>43</sup> *Katz v. United States*, 389 U.S. 347, 351 (1967).

<sup>44</sup> *See id.* (“What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection.”); *see also* Howard E. Wallin, *Plain View Revisted*, 22 PACE L. REV. 307 (2002) (analyzing the development of the plain view exception to Fourth Amendment strictures).

<sup>45</sup> *Katz*, 389 U.S. at 361 (Harlan, J., concurring) (“[T]he expectation [of privacy must] be one that society is prepared to recognize as ‘reasonable.’”).

<sup>46</sup> *Whren v. United States*, 517 U.S. 806, 818 (1996).

<sup>47</sup> 389 U.S. 347 (1967).

<sup>48</sup> *Id.* at 348–49.

<sup>49</sup> *Id.* at 351.

within the meaning of the Fourth Amendment.”<sup>50</sup> In short, the new test established that the Fourth Amendment is implicated when, from an objective standpoint, a person had a reasonably justifiable expectation of privacy.

In *Greenwood v. California*,<sup>51</sup> the Supreme Court held that a search and seizure of garbage bags left at the curb outside a house without a warrant violates the Fourth Amendment “only if the respondents manifest a subjective expectation of privacy in their garbage that society accepts as objectively reasonable.”<sup>52</sup> The *Greenwood* Court, using the *Katz* rationale, concluded that since it was “common knowledge” that garbage bags on a public street are able to be accessed and publicly inspected, there is no reasonable expectation of privacy in anything discarded.<sup>53</sup> Thus, because society does not consider publicly-discarded garbage to be private, the government may permissibly search and seize it without triggering the restrictions of the Constitution. In short, the post-*Greenwood* inquiry by courts is whether there is a “societal understanding that certain areas deserve [more] scrupulous protection from government invasion.”<sup>54</sup>

The Supreme Court has applied the “reasonable expectation of privacy” approach in a variety of contexts. In *Oliver v. United States*,<sup>55</sup> the Court held that there is no reasonable expectation of privacy in open fields since they are usually exposed to the public.<sup>56</sup> The *Oliver* Court reasoned that intimate activities do not occur in open fields.<sup>57</sup> Thus, there is no societal expectation of privacy. In *United States v. Dioniso*,<sup>58</sup> the Court reiterated and extended the principle that the Fourth Amendment provides no protection for what a person knowingly and constantly exposes to the public such as the tone and manner of one’s voice.<sup>59</sup> Thus, the

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<sup>50</sup> *Id.* at 353.

<sup>51</sup> 486 U.S. 35 (1988).

<sup>52</sup> *Id.* at 39.

<sup>53</sup> *Id.* at 40.

<sup>54</sup> *Id.* at 43 (citing *Oliver v. United States*, 466 U.S. 170, 178 (1984)).

<sup>55</sup> 466 U.S. 170 (1984).

<sup>56</sup> *Id.* at 178.

<sup>57</sup> *Id.* at 179.

<sup>58</sup> 410 U.S. 1 (1973).

<sup>59</sup> *Id.* at 14.

Court reasoned “[n]o person can have a reasonable expectation that others will not know the sound of his voice, any more than he can reasonably expect that his face will be a mystery to the world.”<sup>60</sup>

DNA shares some key similarities with both garbage and an individual’s voice. DNA is constantly discarded by all people.<sup>61</sup> Unlike one’s voice, which can be heard by those nearby, the quantities of information contained within one’s DNA require sophisticated scientific analysis to unlock any information.<sup>62</sup> Thus, the average member of the public could not, without sophisticated expertise and considerable resources, take the DNA sample of a neighbor and get any meaningful information from it. The highly personal information that is revealed after analysis of one’s DNA is never exposed to the public without the aid of modern technological tools. Only on a technical level is DNA constantly discarded and exposed to the public for collection and analysis. One commentator argues that garbage is different from DNA since it takes an affirmative act of throwing away one’s trash, whereas DNA is discarded, arguably unconsciously.<sup>63</sup> Courts nonetheless, remain reluctant to stop law enforcement from utilizing discarded DNA samples.<sup>64</sup>

Since DNA is constantly discarded, absent other privacy safeguards, only the cost and complexity of analyzing samples stand between the routine collection of DNA samples from the citizenry at large. First, as DNA databases gain acceptance as a crime fighting tool in the United States, the fact that they are common bolsters the case for the use of DNA as a reasonable means to fight crime. Societal expectations are shaped accordingly which affects the reasonableness of the use of databases in Fourth

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<sup>60</sup> *Id.*

<sup>61</sup> See *supra* text accompanying notes 16–17.

<sup>62</sup> See Paul E. Tracy, Ph.D., & Vincent Morgan, *Big Brother and His Science Kit: DNA Databases for 21st Century Crime Control?*, 90 J. CRIM. L. & CRIMINOLOGY 635 (2000) (discussing the use of DNA technology to exonerate the innocent, its use as a prosecutorial tool, and future scenarios for DNA database expansion).

<sup>63</sup> Edward J. Imwinkelried & D.H. Kaye, *DNA Typing: Emerging or Neglected Issues*, 76 WASH. L. REV. 413, 437–38 (2001).

<sup>64</sup> See Leigh M. Harlan, *When Privacy Fails: Invoking a Property Paradigm to Mandate the Destruction of DNA Samples* 54 DUKE L.J. 179, 193 (2004).

Amendment analysis. Next, it has been posited that DNA Databases in Great Britain are subject to so-called "function creep," whereby DNA taken for one purpose is later used for additional unrelated purposes.<sup>65</sup> For instance, DNA samples under the British Police and Criminal Evidence Act of 1984 could only be taken from those who were suspected of committing a serious crime.<sup>66</sup> When the police initially took a DNA sample, certain safeguards were in place, including the mandatory destruction of the DNA sample if the crime was later deemed not to be serious or if the person was not suspected or prosecuted or ultimately was acquitted.<sup>67</sup> This law has since been periodically amended, moving to the present standard where DNA samples can be retained indefinitely when "taken from a person in connection with the investigation of an offence," which is akin to the trend in the United States of taking DNA from all arrestees.<sup>68</sup> In Great Britain, where DNA data-basing was pioneered and has won widespread acceptance, the House of Lords recently upheld the most recent amendment, ruling that DNA taken from people who are not charged with an offence or are acquitted can be held indefinitely by the police.<sup>69</sup> Similar trends have occurred in the United States with both fingerprinting during the World War II era and contemporarily with the expansion of DNA sampling described above.<sup>70</sup> Relaxation of privacy safeguards is a striking trend considering that the Court's protection of privacy turns on what society reasonably expects to be private. As has been the case in Great Britain, investigators' frequent use of DNA databases may make it difficult for the judiciary to stop the momentum encouraging extensive DNA sweeps.

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<sup>65</sup> Pamela Sankar, *DNA-Typing: Galton's Eugenic Dream Realized?*, in DOCUMENTING INDIVIDUAL IDENTITY: DEVELOPMENT OF STATE PRACTICES IN THE MODERN WORLD 278 (Jane Caplan & John Torpey, eds.) (2001).

<sup>66</sup> Statewatch News Online, UK: *Police Can Keep DNA of Innocent People Indefinitely*, at <http://www.statewatch.org/news/2004/sep/03uk-dna-database.htm> (last visited Jan. 30, 2005) (on file with the North Carolina Journal of Law & Technology).

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> See Sankar, *supra* note 65, at 278–79.

Society's expectation of privacy regarding DNA in a Fourth Amendment context may also be relaxed as the use of DNA sampling and analysis become more commonplace. As police use of highly personal information increases, the reasonableness of expecting such information would be kept private may decrease.<sup>71</sup> In addition, when persons provide information to a third party, the Court has held there is a lessened expectation of privacy in that information if the providers know of the types of details being exposed.<sup>72</sup> The commercial utilization of human DNA has rapidly expanded, placing large quantities of intimate details in the possession of third parties, arguably reducing society's expectation of privacy in such information:

[t]he genes that cause a number of serious hereditary diseases have been identified, leading to the development of genetic tests that could predict predisposition to disease prenatally; gene therapy trials have begun to test methods for fixing genetic flaws directly; and pharmaceutical companies have started to use genetic information as a guide to discovering new and more-effective drugs.<sup>73</sup>

While commercial users may not be interested in ascertaining the identity of individuals, the collection process can be similar and companies will have access to individuals' highly personal information, irregardless of whether they actually use such intimate details for commercial purposes. While commercial DNA use is not subject to the strictures of the Fourth Amendment, expansion of commercial use may affect both societal expectations

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<sup>71</sup> See *Kyllo v. United States*, 533 U.S. 27, 47 (2001) (Stevens, J., dissenting) (arguing that "the contours of [the Court's] new rule are uncertain because its protection dissipates as soon as the relevant technology is in 'general public use' . . .").

<sup>69</sup> *Smith v. Maryland*, 442 U.S. 735, 742 (1979) (finding that all telephone users realize they convey numerical information to the phone company and that the phone company can and does record such information for numerous purposes).

<sup>73</sup> William Loob, *Genome Project Probes for Secrets of Human DNA*, at <http://www.devicelink.com/mddi/archive/99/09/004.html> (Sept. 1999) (on file with the North Carolina Journal of Law & Technology).

of privacy and whether the Court will deem those expectations to be reasonable.

Much of the Court's jurisprudence thus far has focused on avoiding actual physical intrusions into an individual's body to attain samples. For example, in *Ferguson v. City of Charleston*,<sup>74</sup> Justice Scalia provided that the taking of a urine test is the only act that would constitute a search, whereas the testing of the sample is not a search protected by the Fourth Amendment.<sup>75</sup> Protections based on the intrusion stage are inadequate because DNA can be attained without any actual bodily intrusion. The level of bodily intrusion necessary to obtain a sample has been central to the Court's analysis in the administrative context, whereby the government must articulate some "special need" for the information aside from general crime control.<sup>76</sup> In *Skinner v. Railway Labor Executives' Ass'n*,<sup>77</sup> the Court held that a federal agency could require drug and alcohol testing of employees under the Fourth Amendment in order to protect public safety and required no reasonable suspicion.<sup>78</sup> The Court permitted a "physical intrusion, penetrating beneath the skin, [which] infringes an expectation of privacy that society is prepared to recognize as reasonable."<sup>79</sup> In addition, the *Skinner* Court stated that the chemical analysis of the sample to obtain physiological data is an additional invasion of the employee's privacy interests.<sup>80</sup> While the standards for determining whether searches are permissible under the Fourth Amendment in the administrative context, the administrative context has provided a forum for the Court to weigh in on the governmental intrusion into the body in different settings, which is alarming considering the lack of intrusion associated with getting a DNA sample.

One commentator accepts that one does not have a reasonable expectation of privacy in something that he or she

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<sup>74</sup> 532 U.S. 67 (2001).

<sup>75</sup> *Id.* at 92 (Scalia, J., dissenting).

<sup>76</sup> *See id.* at 81–84 (2001) (describing the policy of testing pregnant mothers for illicit drug use to aid in law enforcement context).

<sup>77</sup> 489 U.S. 602 (1989).

<sup>78</sup> *Id.* at 633.

<sup>79</sup> *Id.* at 616.

<sup>80</sup> *Id.*

“knowingly exposes to the public,”<sup>81</sup> but she distinguishes “the taking of blood, fingernail scrapings, pubic hair samples, breath samples, and X-rays” since they take some form of governmental intrusion into one’s body in order to gain access to the information.<sup>82</sup> Although DNA samples can be attained from blood, fingernails or pubic hair, a physical intrusion is not necessary to obtain a DNA sample; hair, flakes of skin, and the like are constantly shed by all human beings.<sup>83</sup> In the Truro, Massachusetts case that begins this article, investigators could ask to see the license of each person who refuses to consent to provide DNA and if it is voluntarily given, swab it for a DNA sample. The Supreme Court recently held that the police may require that a person identify himself to an officer without implicating the Fourth Amendment protections.<sup>84</sup> This decision raises an interesting question: Can the police return to their patrol car and take a sample from one’s license on a routine traffic stop since the person has effectively handed the officer his or her DNA? In addition, once the police gain a sample voluntarily, the police may subsequently “use [it] for whatever evidence it may contain.”<sup>85</sup>

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<sup>81</sup> *Katz v. United States*, 389 US 347, 351 (1967).

<sup>82</sup> Ellen Alderman, *Dragnet Drug Testing in Public Schools and the Fourth Amendment*, 86 COLUM. L. REV. 852, 856 (1986).

<sup>83</sup> See Harlan, *supra* note 64, at 194. Harlan argues that [a]dvances in science have rendered DNA ostensibly indiscriminate from such “delicate materials” discarded in public places. DNA is present on any item touched by an individual; it exists in hair, which is shed in public, and in saliva, such that it may be gathered from any used cup, straw, or spoon.

*Id.*

<sup>84</sup> *Hiibel v. Sixth Judicial Dist. Court*, 124 S. Ct. 2451, 2458 (2004).

<sup>85</sup> *Ferguson v. City of Charleston*, 532 U.S. 67, 95 (2001) (Scalia, J., dissenting).

#### IV. *Illinois v. Caballes*: Suggesting Government-Imposed DNA Database Limits to Balance Fourth Amendment Concerns

In 2000, the Supreme Court overturned the use of drug sniffing dogs by the police at road checkpoints in *City of Indianapolis v. Edmond*.<sup>86</sup> The Court found that “the general interest in crime control” was not a valid reason to allow stops “justified only by the generalized and ever-present possibility that interrogation and inspection may reveal that any given motorist has committed some crime.”<sup>87</sup> This past term, the Court drew a fine line in *Illinois v. Caballes*,<sup>88</sup> which involved the use of a drug sniffing dog, not at a check point, but instead during a routine traffic stop.<sup>89</sup> The Court held that “[t]he use of a well-trained narcotics-detection dog—one that does not expose noncontraband items that otherwise would remain hidden from public view—during a lawful traffic stop, generally does not implicate legitimate privacy interests.”<sup>90</sup> In short, since canine sniffs disclose only the presence or absence of contraband items, and there is no objectively reasonable expectation of privacy in having something illegal, the government may utilize canine sniffs for drugs at will so long as the person is stopped or seized for some legitimate reason under the Fourth Amendment. The Court distinguished the *Caballes* factual setting from that of *Kyllo*, where infrared technology could be used to reveal intimate details about the interior of a home such as “at what hour each night the lady of the house takes her daily sauna and bath,” rather than just the presence or absence of heat lamps to grow drugs.<sup>91</sup>

The Court’s decision in *Caballes*, unlike that in *Edmonds*, did not turn on the presence or absence of any individualized suspicion, but rather on the limited nature of the information which can be attained from a drug dog sniff. It is arguable that *Edmonds*

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<sup>86</sup> 531 U.S. 32 (2000).

<sup>87</sup> *Id.* at 44.

<sup>88</sup> 125 S. Ct. 834 (2005).

<sup>89</sup> *Id.* at 836.

<sup>90</sup> *Id.* (quoting *United States v. Place*, 462 U.S. 696, 707 (1983)).

<sup>91</sup> *Id.* at 838 (quoting *Kyllo v. United States*, 533 U.S. 27, 38 (2001)).



provided greater protection under the Fourth Amendment because persons were seized solely to be checked for drugs, whereas in *Caballes*, the person was lawfully seized in connection with a speeding citation. Thus, *Caballes* stands for the notion that once the police are in valid contact with a citizen, they may utilize technology that merely signals the presence or absence of contraband, thereby minimizing any privacy concerns according to the Court.

In the DNA context, *Caballes* may offer some guidance in defining the permissible scope for the collection of DNA samples and the use of databases. Since persons do not have an interest in the presence or absence of contraband, the government may be able to utilize dog sniffs, at any time.<sup>92</sup> DNA databases, if properly designed, can be akin to a drug sniffing dog, in that stored DNA profiles can merely be used in a binary fashion. Unlike in *Kyllo*, where there is no way to delineate whether the heat emanating from one's roof is from illegal activity or intimate legal activity,<sup>93</sup> with proper privacy protections, DNA analysis can be limited to whether or not a match is present. Certain safeguards would be required: DNA profiles can be created in an anonymous fashion (all personal identifiers are removed), can be coded in a fashion that will not allow the gleaning of additional private information, and can be returned to the provider of the sample upon a negative match with the sample of interest. The existing database would contain a DNA profile such as the one used in the federal DNA database system.<sup>94</sup> Numerous commentators have argued that the return or destruction of DNA samples is a key in protecting the privacy rights of the person sampled.<sup>95</sup> With these

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<sup>92</sup> See *Caballes*, 125 S. Ct. at 839 (Souter, J., dissenting) (arguing that there is nothing to stop the police from doing drug sniffs in parking garages or along public streets).

<sup>93</sup> *Kyllo*, 533 U.S. at 38 (2001).

<sup>94</sup> See Carnahan, *supra* note 22, at 3–6 (describing the DNA Identification Act of 1994 and the creation of the CODIS system, which is designed to solve crimes with no suspect or to identify multiple crimes committed by the same person).

<sup>95</sup> See Harlan, *supra* note 64, at 179 (arguing for mandatory destruction of DNA samples on a property theory); Jeffrey S. Grand, *The Bleeding of America: Privacy and the DNA Dragnet*, 23 CARDOZO L. REV. 2277, 2321 (2002) (stating that samples should be destroyed or returned to the donors).

types of safeguards in place, the police can use DNA in a binary fashion similar to the use of a drug sniffing dog: Is the person's DNA a match with that of the person who committed a crime? In this way, DNA sampling and the inclusion of DNA profiles in databases is akin to fingerprinting, which allows the police to merely make simple matches.<sup>96</sup>

Under the Court's reasoning in *Caballes*, if one does not have a protected interest in the presence or absence of contraband, it is hard to discern any reason that the presence or absence of a DNA match would invoke a greater level of protection, assuming adequate safeguards are employed. In effect, just as a dog sniff reveals no information other than the presence of a substance that no individual has any right to possess, DNA Databases can be designed so that they reveal no information other than that which the person has no right to possess, namely whether or not he committed a crime.<sup>97</sup> Similarly, in *United States v. Jacobsen*,<sup>98</sup> Justice Stevens wrote that "[a] chemical test that merely discloses whether or not a particular substance is cocaine does not compromise any legitimate interest in privacy."<sup>99</sup> Unlike in *Jacobsen* where negative test results "reveal[] nothing of special interest,"<sup>100</sup> DNA analysis can unlock vast quantities of highly personal information in addition to whether or not a suspect committed a crime if adequate safeguards are not employed.

An important difference is that just because an individual left DNA at a crime scene does not necessarily prove that they committed the crime, and therefore, they may have a greater privacy interest. In the Truro, Massachusetts case, investigators are interested in speaking with the person who left semen on the victim as they believe he is the last person to have seen the victim alive, not necessarily that the person committed the crime per se.<sup>101</sup> This person could very well have had consensual sex with the

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<sup>96</sup> But see Grand, *supra* note 95, at 2323 n.52 (providing differences between fingerprints and DNA analysis).

<sup>97</sup> *Caballes*, 125 S. Ct. at 838 (Souter, J., dissenting).

<sup>98</sup> 466 U.S. 109 (1984).

<sup>99</sup> *Id.* at 123.

<sup>100</sup> *Id.*

<sup>101</sup> Belluck, *supra* note 2, at A1.

victim, meaning that his interest is not merely binary in fashion—whether or not he committed the crime.

The governmental need for the information will be weighed against the rights of the individual for privacy. In the *Truro* case, both the governmental interest and the personal interest of the individual are high, but the governmental interest would likely be deemed more important due to the weighty need to gather key information, such as the identity of the person that had intercourse with a victim in the hours before she was killed, in order to solve a dangerous crime. In addition, a similar criticism would apply to fingerprint databases, which courts have found to be universally permissible even though the fingerprints of people who did not actually commit the crime may be found at the crime scene. These concerns do not arise in cases where the victim is alive and able to attest to the fact that the perpetrator left the DNA sample at issue. In this setting, the DNA sweep has the potential to be purely binary in nature.<sup>102</sup>

In order for DNA testing to truly be binary in nature, certain safeguards must be in place in order to ensure that the test outcome is accurate. There is an inherent risk that the underlying data will not match the DNA report provided at the end.<sup>103</sup> Peter Neufeld, co-founder of the Innocence Project has remarked:

We would be much better off if forensic science was primarily a science as opposed to something that is run by police departments. In all other scientific disciplines it's considered crucial that the person who is doing the test does the test blindly. In other words he doesn't know how the result is supposed to turn out.<sup>104</sup>

In DNA testing, the laboratories are generally closely linked to police departments, which has arguably lead to shoddy quality

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<sup>102</sup> For a discussion of the differences between fingerprints and DNA samples, see Grand, *supra* note 95, at 2288 n.52.

<sup>103</sup> *Talk of the Nation: Expanding Criminal DNA Databases* (NPR radio broadcast, Nov. 5, 2004) at <http://www.npr.org/templates/story/story.php?storyId=4152449>.

<sup>104</sup> *Id.*

control in some cases and outright fraud in others.<sup>105</sup> In addition, police investigators have been charged with providing access to DNA to outsiders for numerous reasons.<sup>106</sup>

One key solution is for state legislatures to require the use of independent laboratories for DNA testing. Impartial scientific analysis would go a long way toward ensuring accurate test results.<sup>107</sup> The *Caballes* majority implicitly allowed some level of inaccuracy with drug sniffing dogs, by stating that the sniff was *sui generis* in the face of evidence that the dogs often “alerted” to the presence of drugs wrongly.<sup>108</sup> These erroneous results could then provide the police with grounds to invade persons’ “‘intimate details’ without revealing contraband . . . .”<sup>109</sup> Thus, the *Caballes* Court held that drug sniffs only reveal the presence or absence of contraband in the face of the evidence that “[t]he infallible dog . . . is a creature of legal fiction.”<sup>110</sup> Therefore, if additional safeguards were employed such as mandatory independent laboratory testing, the fact that the testing procedures did not reach absolute infallibility would not be fatal, just as the lack of fallibility of the dogs did not prevent their suspicionless sniffs. Flawless testing procedures would be difficult to achieve and maintain over time.<sup>111</sup> One difference is that as between drug sniffs and DNA testing, the

<sup>105</sup> See, e.g., Richard Willing, *Mueller Defends Crime Lab After Questionable DNA Tests*, USA TODAY, May 1, 2003, at 3A (discussing questionable DNA test results due to shortcuts taken by an employee). See generally Ellen Perlman, *Evidence of Failure*, GOVERNING MAG., Apr. 2004, at 39 (discussing problems at several labs, including the sizable workloads that have led to shortcuts and questionable DNA test results).

<sup>106</sup> See Harris, *supra* note 33 (“Law enforcement officials have been charged with using confidential government databases to check up on a spouse, sell information to third parties for profit, and for other unauthorized uses.”).

<sup>107</sup> See *Talk of the Nation*, *supra* note 103.

<sup>108</sup> *Illinois v. Caballes*, 125 S. Ct. 834, 839 (2005) (Souter, J., dissenting).

<sup>109</sup> *Id.* at 840.

<sup>110</sup> *Id.* at 839.

<sup>111</sup> See Laura K. Donohue, *Proposition 69 Could Threaten Privacy of DNA*, SAN FRANCISCO CHRON., Aug. 22, 2004, at E3 (“Perhaps of greatest concern is the very real possibility of error. A recent Stanford University study showed that even sophisticated laboratories exhibit up to a 3 percent error rate in the handling and coding of genetic material.”), available at <http://www.sfgate.com/cgi-article.cgi?file=/chronicle/archive/2004/08/22/ING8689JT61.DTL>.

results of an erroneous test on the average citizen may be quite disparate; the innocent person stopped and searched for drugs incorrectly is subjected to an arguably minor inconvenience, whereas a person erroneously identified as the perpetrator of the crime will likely be subjected to arrest and interrogation and perhaps even public scorn. This bolsters the need for airtight safeguards, or in the alternative, provides a grounds to distinguish DNA testing from a dog sniff.

As mentioned above, another key difference is that without the imposition of limits on the types of information that government can gain from a DNA sample, one's DNA can be analyzed for numerous other things such as the presence or absence of a match with crime-scene DNA. Police investigators have been reluctant to self-impose limitations on the types of analysis of DNA.<sup>112</sup> As Steinhart of the ACLU has stated:

We asked the folks in the criminal justice agencies who say they want to collect an ever wider scope of DNA records if they are willing to destroy the DNA afterwards, just keep the test results that can be used for the purpose of establishing identity and they've refused. Now that tells you that they want it for something else. And it will inevitably be used for something else.<sup>113</sup>

Therefore, state legislators should be forward thinking and enact legislation limiting the analysis that may be done on DNA samples taken without suspicion from members of the public, as was done in Truro, Massachusetts. These measures would provide a basis for the argument that DNA sampling is *sui generes* in nature and ought be analogized to a drug sniffing dog. Without these limits though, the risk of the governmental intrusion on intimate personal details is too great. DNA profiles can also be used to determine parentage, which undermines the binary nature of DNA testing.<sup>114</sup> The threat of the use of DNA profiles for this additional purpose

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<sup>112</sup> *Talk of the Nation*, *supra* note 103.

<sup>113</sup> *Id.*

<sup>114</sup> See Michelle Hibbert, *DNA Databanks: Law Enforcement's Greatest Surveillance Tool?*, 34 WAKE FOREST L. REV. 767, 787-88 (1999) (describing paternity testing implications that arise with DNA analysis).

undermines the *Caballes* analogy, a concern which would be alleviated with safeguards. A consideration of these safeguards has been discussed in detail elsewhere<sup>115</sup> and is beyond the scope of this Recent Development.

A looming threshold question, as discussed previously, is whether taking discarded DNA evidence is a search.<sup>116</sup> If not, the Fourth Amendment alone may be inadequate to protect the privacy of individuals. If the collection of discarded DNA is not deemed a search, the government is able to obtain intimate and sensitive personal information with impunity.

An additional, non-Fourth Amendment basis for constitutional control over DNA databases arises in the context of a right to informational privacy.<sup>117</sup> The seminal case, *Whalen v. Roe*,<sup>118</sup> provided that part of a right of privacy includes "the individual interest in avoiding disclosure of personal matters . . . ."<sup>119</sup> In this case, the Supreme Court acknowledged the privacy threat "implicit in the accumulation of vast amounts of personal information in computerized data banks or other massive government files."<sup>120</sup> Likewise in *Skinner v. Railway Labor Executives' Ass'n*,<sup>121</sup> the Court concluded that chemical analysis of urine, like blood, "can reveal a host of private medical facts about an employee, including whether he or she is epileptic, pregnant, or diabetic."<sup>122</sup> Thus, persons have a legally cognizable privacy interest in this information, which was part of the Court's rationale

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<sup>115</sup> *Id.*

<sup>116</sup> See *Smith v. Maryland*, 442 U.S. 735, 745–56 (1979) (holding that looking at record of phone numbers dialed is not a search due to a lack of societal expectation of privacy).

<sup>117</sup> See Stephen Aaron Silver, *Beyond Jaffee v. Redmond: Should the Federal Courts Recognize a Right to Physician-Patient Confidentiality?*, 58 OHIO ST. L.J. 1809, 1813–21 (1998) (describing the historic development of an informational right to privacy).

<sup>118</sup> 429 U.S. 589 (1977).

<sup>119</sup> *Id.* at 599.

<sup>120</sup> *Id.* at 605.

<sup>121</sup> 489 U.S. 602 (1989).

<sup>122</sup> *Id.* at 617.

in providing Fourth Amendment protection by deeming the act of retrieving a urine sample a search.<sup>123</sup>

Similarly, DNA databases contain vast quantities of personal information. The *Whalen* Court cited the need for appropriate safeguards as enacted by the legislature to protect privacy in this context, paralleling what is necessary to protect privacy interests in personal information in DNA databases. DNA Databases are in a period of expansion and tough safeguards must be required by the Court in order to protect privacy interests implicated under the Fourth Amendment as well as the penumbras of the Bill of Rights as embodied in *Griswold v. Connecticut*.<sup>124</sup> In *Griswold*, Justice Douglas cited numerous provisions of the Bill of Rights which, taken together, "[bore] witness that the right of privacy which presses for recognition here is a legitimate one."<sup>125</sup> One possible manner in which to begin to respect these privacy notions would be for the Supreme Court to draw on the reasoning of *Caballes* and apply a prophylactic rule that the use of DNA taken from members of the general public is subject to safeguards that would ensure that DNA attained by the police would be utilized in a binary nature. As the collection and analysis of DNA becomes more widespread, this may be a way to balance the rights of the individual with the societal need for law enforcement. Another option is to employ a property rights model, whereby persons would have a right to the physical sample taken from them as well as the information it contains.<sup>126</sup>

## V. Conclusion

While America has been enamored with the use of DNA to put the guilty behind bars and free the innocent, advances in DNA technology, if unchecked, pose tremendous risks to personal bodily privacy. While DNA can be collected and analyzed in a fashion

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<sup>123</sup> This again begs the question: If the urine was discarded by the person in a public place in a manner in which the police could gain access to it, would it be dubbed discarded waste in which there is no expectation of privacy?

<sup>124</sup> 381 U.S. 479 (1965).

<sup>125</sup> *Id.* at 485.

<sup>126</sup> See Harlan, *supra* note 64, at 198–201.

that does protect privacy concerns, present trends allow for wider use of DNA in the United States and abroad, especially for the advancements in commercial uses of DNA. As DNA analysis becomes more commonplace in American society, the reasonable expectation of privacy can be eroded. Employing a *Caballes* like analysis to DNA Databases is an initial way to ensure that in towns like Truro, Massachusetts, when DNA samples are taken, the police only analyze information in which the person has no privacy interest. The reasoning in *Caballes* may pave the way for the widespread use of powerful modern technology to gather investigative information about ordinary citizens on a large scale.<sup>127</sup> While this may cause concern among civil libertarians and other detractors of wide scale DNA database use, *Caballes* also poses a way to check the current DNA tide in a fashion that maximizes its crime-fighting power, while significantly blunting the wide potential of DNA to reveal each person's secrets. While *Caballes* may signify the Court's acceptance of powerful technologies under the Fourth Amendment, it also suggests limitations on the way in which information may be managed and manipulated by the Government. Both the judicial and legislative branches should employ strict limitations on DNA analysis in order to balance privacy concerns with the important governmental interest of assuring that the guilty are convicted and the innocent are exonerated. Such measures will provide privacy protections even though DNA is discarded by all and the government effectively has open access to it. Thus, society can benefit from the accuracy and power of DNA when used as a crime fighting tool, while some privacy concerns of the citizenry are addressed.

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<sup>127</sup> See *United States v. Jacobsen*, 466 U.S. 109, 137 (1984) (Brennan, J., dissenting). Brennan stated,

It is certainly true that a surveillance technique that identifies only the presence or absence of contraband is less intrusive than a technique that reveals the precise nature of an item . . . . But by seizing on this distinction alone . . . , [the Court] may very well have paved the way for technology to override the limits of law in the area of criminal investigation.

*Id.*



