From the Legal Literature

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In this edition of "From the Legal Literature," guest-reviewers Stephen S. Owen and Tod W. Burke explore a number of issues related to DNA familial searching. The articles they review below were both published in a special, symposium issue of the *Journal of Law, Medicine and Ethics* devoted to "DNA Fingerprinting and Civil Liberties." As their summary makes clear, the use of DNA databases for familial searching holds great potential for law enforcement agencies attempting to resolve cold cases. At the same time, it is equally clear that there are many legal and ethical issues that remain to be addressed before this forensic scientific technique can become a common practice in U.S. criminal law and procedure.

DNA Databases and Familial Searching

Stephen S. Owen, Ph.D.** & Tod W. Burke, Ph.D.***

Introduction

In 1989, Virginia made forensic science history by being the first state to establish a DNA database, containing samples from convicted criminals.[1] Only two years later, Minnesota became the first state to solve a "cold case" through a DNA database match.[2] Since that time, DNA databases have become the boon and the bane of forensic evidence. On one hand, DNA databases allow "the potential to make speedy and robust suspected offender identifications through automated profile comparisons in centralized criminal justice databases."[3] On the other hand, numerous concerns have been raised, including: "the intrusion and denigration of privacy rights caused by

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[1] Steve Irsay, *Cold Hits v. Civil Liberties: The Looming Debate over Privacy and DNA Databases* ¶ 21 (Court TV, 2003), available at http://www.courttv.com/news/forensics/dna_anniv/databases.html (last visited May 19, 2007).

[2] Irsay, *supra* note 1, at ¶ 21.

[3] 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, 235 (2006).

the storage and use of tissue samples . . . the prospect of long term bio-surveillance occasioned by the storage of genetic information in police databases and biological samples in forensic laboratories . . . [and] under what circumstances should the police be able to obtain, without consent and with force if necessary, DNA samples from 'suspects.'"[4]

Concerns about DNA databases have been exacerbated by the use of a practice called familial searching, which begins with a partial match between crime scene DNA and a known offender's DNA database sample. In such a case, "it is possible that the crime scene profile belongs to a close relative of the person [in the database]. This information can then shape further investigations."[5] This practice has gained public attention after being featured in a 2007 segment of the television news program *60 Minutes*.[6] Research utilizing Monte Carlo simulation methodology (a sophisticated statistical technique used to simulate outcomes, based on probabilities)[7] concluded that familial searching would allow investigators to identify suspects who are related to known offenders in databases, thus increasing the success of cold-case database searches.[8] In fact, the authors conclude that "the kinship analyses we describe could increase a 10% cold-hit rate to 14% — that is, by 40%."[9] Like traditional DNA database searches, familial searching holds tremendous potential to law enforcement.[10] For instance, the concepts underlying familial searching were used to aid in the identification of the hijackers of Flight 93 on September 11, 2001.[11]

The following articles examine the feasibility of using familial DNA as it relates to law, science, social science, ethics, policy, and technology. The first article focuses upon the historical background of DNA in the field of forensic science and the implications of using familial DNA to identify criminal suspects. The second article explores the socio-ethics of DNA familial searching with particular attention devoted to identity and privacy issues.

Family Ties: The Use of DNA Offender Databases to Catch Offenders' Kin

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[4] Williams & Johnson, *supra* note 3, at 235.

[5] Erica Haimes, *Social and Ethical Issues in the Use of Familial Searching in Forensic Investigations: Insights from Family and Kinship Studies*, 34 J.L. MED. & ETHICS 263, 263 (2006).

[6] *See 60 Minutes: A Not So Perfect Match, How Near-DNA Matches Can Incriminate Relatives of Criminals* (CBS television broadcast, Apr. 1, 2007), *transcript available at* http://www.cbsnews.com/stories/2007/03/23/60minutes/main2600721.shtml (last visited May 19, 2007).

[7] *See generally* CHRISTIAN P. ROBERT & GEORGE CASELLA, MONTE CARLO STATISTICAL METHODS (2d ed. 2005).

[8] Frederick R. Bieber, Charles H. Brenner & David Lazer, *Finding Criminals through DNA of their Relatives*, 312 SCI. 1315, 1315-16 (2006).

[9] Bieber et al., *supra* note 8, at 1316.

[10] Bieber et al., *supra* note 8, at 1316.

[11] Richard Willing, *DNA Database Can Flag Suspects through Relatives*, USA TODAY, Aug. 22, 2006, at 2A, *available at* http://www.usatoday.com/tech/science/genetics/2006-08-22-dna-partial-matches_x.htm (last visited May 19, 2007).

Henry T. Greely, Daniel P. Riordan, Nanibaa' A. Garrison, & Joanna L. Mountain, 34 J.L. MED. & ETHICS 248 (2006).

This article explores a variety of legal issues pertaining to familial searching. While not comprehensive (indeed, the technology and body of law surrounding it are perhaps too young to expect a full treatment), it proves a useful starting point. The authors begin by recounting a well-publicized case from England in which familial searching was used to solve a vehicular manslaughter case. DNA found on a brick that was dropped from an overpass onto a moving truck (resulting in the driver's death) was compared to database samples. When no exact matches were found, investigators searched for partial matches. After narrowing the pool of matches "to young white males from Surrey and Hampshire, two counties near the crime scene," investigators were left with 25 results.[12] The brother of one known offender volunteered a DNA sample, which matched that on the brick, resulting in a conviction. While use of familial searching is uncommon in the United Kingdom, it has resulted in the closure of nine cases.[13] Familial searching is much less common in the United States.[14]

The authors spend considerable time addressing the scientific elements of DNA testing. While much of the information is common knowledge to those who regularly study or work with DNA evidence, it is useful to review the nature of short tandem repeats, alleles, and markers. In the United States, subjects are generally identified with "thirteen pairs of numbers, one pair for each of the thirteen [short tandem repeats]" utilized by the Federal Bureau of Investigation's Combined DNA Index System (CODIS).[15] While it would be virtually impossible, statistically, for unrelated persons to have the same thirteen pairs, "first degree relatives (parent, sibling, or child) on average will share at least half."[16] It is this possibility of partial matches between relatives that makes familial searching possible.

The authors then review the concept of DNA databases, noting that all states maintain a known offender database, although criteria for an offender's inclusion do vary between states. For example, some states (like Indiana, Massachusetts, Virginia, and Wyoming) collect DNA profiles from all felons, but not from misdemeanants; other states (like California, Florida, New Jersey, and Ohio) collect samples from both felons and misdemeanants; and a small number of states (e.g., California, Louisiana, Texas, and Virginia) allow samples to be collected from people arrested for certain crimes.[17] Most states include collection of DNA from juveniles, but in ap-

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[12] Henry T. Greely, Daniel P. Riordan, Nanibaa' A. Garrison & Joanna L. Mountain, *Family Ties: The Use of DNA Offender Databases to Catch Offenders' Kin* 34 J.L. MED. & ETHICS 248, 248 (2006).

[13] Greely et al., *supra* note 12, at 249.

[14] Greely et al., *supra* note 12, at 249.

[15] Greely et al., *supra* note 12, at 250.

[16] Greely et al., *supra* note 12, at 250.

[17] *See* American Society of Law, Medicine & Ethics, *Survey of DNA Database Statutes: Inclusion Criteria, available at* http://www.aslme.org/dna_04/grid/

proximately twenty states, juveniles are excluded from collection efforts.[18] A small number of states (like Hawaii, Michigan, and Nebraska) only permit DNA samples collected from suspects to be maintained in their databases during the time in which the individual is considered a suspect, while other states retain samples in their databases even after a suspect is acquitted.[19]

The authors also note that while individual states are free to determine which genetic markers[20] they will analyze from the DNA samples they collect, most U.S. jurisdictions utilize the markers specified by CODIS.[21] States may submit their profiles to the National DNA Index System (NDIS), which in March 2007 archived profiles from more than 4.3 million offenders.[22] When DNA material is recovered at a crime scene, investigators may compare it to profiles in their state's database and/or to those in the NDIS.

At this point, the science becomes complex for familial searching. When comparing two DNA samples, ''determining . . . whether a high match is the result of a genetic family relationship . . . is not simple. It depends both on the nature of the postulated relationship and on the rarity of the genotype (set of alleles[23]) involved.''[24] The authors discuss the various permutations that may exist, based on type of relationship and other biological factors. On average, of the 26 alleles in CODIS, fathers and children may share 15.7[25] and siblings may share 16.7.[26] Determining whether there is a familial relationship, and then what sort of relationship, is far from an exact science.

As an investigative tool, familial searching may incur costs due to its imprecision. While the actual comparison of two samples is inexpensive, ''the cost of following-up the leads generated by family forensic DNA may be extensive,'' as investigators must first identify the offender's relatives and

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statute_grid_4_5_2006_files/sheet001.html (last visited May 20, 2007) [hereinafter ''ASLME''].

[18] *See* ASLME, *supra* note 17.

[19] *See* ASLME, *supra* note 17.

[20] A ''genetic marker'' is a DNA sequence having a known location on a chromosome and associated with a particular gene or trait. THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2004), available at http://dictionary.reference.com/browse/genetic marker (last visited May 19, 2007).

[21] Greely et al., *supra* note 12, at 250-51.

[22] Federal Bureau of Investigation, *National DNA Identification System Statistics, available at* http://www.fbi.gov/hq/lab/codis/clickmap.htm (last visited May 19, 2007).

[23] Alleles are ''any one of a series of two or more different genes that occupy the same locus (position) on a specific chromosome.'' STEADMANS ONLINE MEDICAL DICTIONARY, available at http://www.stedmans.com/section.cfm/45 (last visited May 19, 2007). In common parlance, alleles are forms of genes that interact with each other to produce all genetic traits.

[24] Greely et al., *supra* note 12, at 251.

[25] Greely et al., *supra* note 12, at 252.

[26] Greely et al., *supra* note 12, at 253.

then investigate each as possible leads.[27] Given this, the authors propose two ways to make familial searching more efficient. First, the authors propose requiring offenders who submit DNA samples to also provide information about their known relatives, such as names, ages, and locations. Second, the authors recommend the use of more genetic markers (''roughly twenty'') than those currently required by CODIS.[28] Doing so would increase the likelihood that a partial match was from a family member, although it would add cost to the process.

After the above useful background information, the authors move to a consideration of legal issues, correctly noting that ''the legal and policy implications of family forensic DNA have largely been overlooked in the voluminous literature on forensic DNA.''[29] While acknowledging that various objections have been made to familial searching, the authors conclude that ''the legal arguments against it . . . are quite weak, as are the policy objections.''[30] The authors begin their analysis by refuting arguments posed by Williams and Johnson.[31] The authors dismiss Williams and Johnson's concern that DNA analysis could reveal that two individuals thought to be related were not, or vice versa, by noting that such information would not likely cause harm if known only to investigators.[32] The authors also do not believe Williams and Johnson's contention that familial searching would lead observers to conclude that criminality is inherited.

The authors devote further consideration to Williams and Johnson's concern 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'' with a profile in a DNA database.[33] In the United Kingdom, precise (but classified) guidelines were developed to address when and how familial searching may be used. Agencies in the United States have yet to develop and agree upon such guidelines.[34] The authors are not concerned by the lack of guiding policy. As they note, ''it seems assumed that the fact of a family relationship may sometimes be a relevant, and useable, fact for police or other investigations.''[35] Knowledge of family relationship may prove useful in other contexts, such as in determining motive, examining familial structures of organized crime, discovery of a relative's criminal activity in the investigation of another subject, or through similarity in the appearance of

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[27] Greely et al., *supra* note 12, at 253.

[28] Greely et al., *supra* note 12, at 254.

[29] Greely et al., *supra* note 12, at 255.

[30] Greely et al., *supra* note 12, at 260.

[31] *See* Williams & Johnson, *supra* note 3, *passim.*

[32] *See also* Haimes, *supra* note 5, *passim.*

[33] Williams & Johnson, *supra* note 3, at 244.

[34] Greely et al., *supra* note 12, at 256.

[35] Greely et al., *supra* note 12, at 257.

family members.[36] The authors argue that familial searching is akin to "a molecular version . . . of family resemblance."[37]

The authors dismiss Fourth Amendment concerns by pointing out that relatives of known offenders have not been searched or seized, but only investigated pursuant to a DNA lead. The authors also examine family privacy case law including the landmark cases of *Pierce v. Society of Sisters*[38] and *Griswold v. Connecticut*.[39] They conclude, correctly, that the family privacy cases are not analogous to concerns raised by familial searching, thus neutralizing them as potential obstacles.[40] Rather than curtailing rights, the use of familial searching could maximize the efficiency of the criminal justice system by determining whether or not the family members of known offenders have DNA profiles that match or do not match those found at the crime scene; a determination that has little risk of error.[41] As such, the process is no more unfair than any other police investigative procedures that require interviews of persons of interest and, because it has the possibility of readily identifying an offender with DNA evidence, "it might reduce the total number of people interviewed as potential suspects or witnesses."[42]

Another concern about familial searching is that it might disproportionately focus on African-Americans.[43] This concern rises from the fact that African-Americans are disproportionately represented among felony offenders and thus, among entrants in DNA databases. Using theoretical extrapolations, the authors conclude that it is possible that "four times as much of the African-American population as the U.S. Caucasian population would be 'under surveillance'" due to familial searching procedures.[44] The authors do not believe that this poses a legal challenge because there is no racially-motivated discriminatory intent in the familial searching process.[45] However, they do acknowledge that there are forces within the American criminal justice system that produce racially skewed outcomes, and that these, including their impacts on familial searching, merit further consideration.[46]

On balance, after effectively counter-arguing many potential objections, the authors seem to favor familial searching as a legitimate investigative tool. While this article has been a useful starting point (indeed, one of the few available starting points) for considering the legal ramifications of fa-

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[36] Greely et al., *supra* note 12, at 257.

[37] Greely et al., *supra* note 12, at 257.

[38] 268 U.S. 510, 45 S. Ct. 571, 69 L. Ed. 1070, 39 A.L.R. 468 (1925).

[39] 381 U.S. 479, 85 S. Ct. 1678, 14 L. Ed. 2d 510 (1965).

[40] Greely et al., *supra* note 12, at 257-58.

[41] Greely et al., *supra* note 12, at 258.

[42] Greely et al., *supra* note 12, at 258.

[43] *See also* Bieber et al., *supra* note 8, *passim.*

[44] Greely et al., *supra* note 12, at 259.

[45] *See generally* McCleskey v. Kemp, 481 U.S. 279, 107 S. Ct. 1756, 95 L. Ed. 2d 262 (1987) (requiring evidence of particularized racially-motivated discriminatory intent to sustain an Equal Protection Clause challenge to criminal procedures).

[46] Greely et al., *supra* note 12, at 259.

milial searching, there are a number of policy and legal issues that merit further consideration. Before readily accepting familial searching procedures, at minimum, the following questions must be considered.

First and foremost, the scientific basis of familial searching must be resolved before it is placed into widespread practice. That is, the scientific community must reach consensus on what, precisely, constitutes enough of a ''partial match'' to begin a familial search. This is necessary both to maintain the legal integrity of the procedure and to make most efficient use of scarce investigative resources. The authors note that a ''partial match would only need to function as a lead and not as evidence in court.''[47] While this is true, it is entirely possible that the reliability of partial match evidence could be questioned in court, particularly if it were to give rise to reasonable suspicion or probable cause.[48] This would necessitate an examination of whether familial searching would be acceptable under *Daubert v. Merrill-Dow Pharmaceuticals, Inc.* [49] Given the current scientific imprecision, this would be doubtful; suggesting that further scientific research is necessary before familial searching can be utilized on a widespread scale.[50]

Second, the authors refuse to consider one of the most significant legal questions pertinent to familial searching: ''We will leave to other analysis whether the partial match . . . could be sufficient to compel production of a DNA sample.''[51] As noted above, the scientific basis for familial searching needs further refinement, but is it now, or could it ever be, at a point where a partial match would generate reasonable suspicion or probable cause to require a DNA sample, or for any other investigative action? While there is limited Supreme Court precedent to guide the issue, this would likely have to be determined in view of case law such as *Skinner v. Railway Labor Executives' Association,*[52] *Schmerber v. California,*[53] and *United States v. Berry.*[54]

Third, to what extent, if any, do individuals have a reasonable expectation of privacy vis-á-vis their DNA?[55] Consider a situation that is the inverse of familial searching — that is, where a family member's DNA is used to

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[47] Greely et al., *supra* note 12, at 253.

[48] *See* infra at notes 51-54 and accompanying text.

[49] 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469, 27 U.S.P.Q.2d 1200, Prod. Liab. Rep. (CCH) P 13494, 37 Fed. R. Evid. Serv. 1, 23 Envtl. L. Rep. 20979 (1993).

[50] For a discussion of the judicial acceptability to various forensic scientific techniques, *see* Henry F. Fradella, Lauren O'Neill & Adam Fogarty, *The Impact of Daubert* on the Forensic Sciences, 31 PEPP. L. REV. 323 (2004).

[51] Greely et al., *supra* note 12, at 258.

[52] 489 U.S. 602, 109 S. Ct. 1402, 103 L. Ed. 2d 639, 4 I.E.R. Cas. (BNA) 224, 130 L.R.R.M. (BNA) 2857, 13 O.S.H. Cas. (BNA) 2065, 49 Empl. Prac. Dec. (CCH) P 38791, 111 Lab. Cas. (CCH) P 11001, 1989 O.S.H. Dec. (CCH) P 28476 (1989).

[53] 384 U.S. 757, 86 S. Ct. 1826, 16 L. Ed. 2d 908 (1966).

[54] 866 F.2d 887 (6th Cir. 1989).

[55] *See generally* Katz v. U.S., 389 U.S. 347, 88 S. Ct. 507, 19 L. Ed. 2d 576 (1967).

determine whether a crime scene sample might match that of their relative, who is the suspect: A ''perpetrator may likely be one of ten men who worked in the area where [a] rape occurred. If these ten men refuse to provide DNA samples voluntarily . . . the police may attempt to obtain the individuals' DNA indirectly through family members. Thus, police officers could surreptitiously follow the preschool-age son of one of the men until he discarded some used chewing gum or a tissue.''[56] Abandoned property is not protected, leading Rothstein and Talbott to propose other controls to prevent such ''deeply troubling'' police actions.[57] Another scenario, more directly related to family searching, pertains to the possibility of obtaining samples via court order or subpoena from medical sources; such requests ''must simply allege that the information sought is relevant for law enforcement purposes.''[58] Policy makers and legal scholars have much fodder for discussion about whether or not existing case law and protections are sufficient to address DNA collection pursuant to familial searches.[59]

Fourth, if relatives of known offenders volunteered or were compelled to give samples, how long should these samples be retained? While the courts have held that DNA databases do not violate any constitutional protections, cases to date have really only examined databases of offenders.[60] Would the legal analysis (based on special needs or other diminished privacy doctrines) remain valid for samples obtained through familial searches?[61] For instance, in 2002, the Ohio DNA database came under criticism because it retained samples ''collected from more than 1,020 people who were excluded as suspects in offenses such as homicide, rape and burglary.''[62] While law enforcement officials offered support to the practice due to its potential for solving cold cases, others opposed the retention of samples as a violation of civil liberties.[63] This is an important policy question that must be guided by careful legal considerations.

Social and Ethical Issues in the Use of Familial Searching in Forensic Investigations: Insights from Family and Kinship Studies Erica Haimes, 34 J.L. MED. & ETHICS 263 (2006).

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[56] Mark A. Rothstein & Meghan K. Talbott, *The Expanding Use of DNA in Law Enforcement: What Role for Privacy?*, 34 J.L. MED. & ETHICS 153, 156 (2006).

[57] *See generally* California v. Greenwood, 486 U.S. 35, 108 S. Ct. 1625, 100 L. Ed. 2d 30 (1988).

[58] Rothstein & Talbott, *supra* note 56, at 158.

[59] To date, little scholarship has addressed the use of DNA databases for familial searching. Much of the relevant literature has been included in this review. *See, e.g.*, Bieber et al., *supra* note 8; Greely et al., *supra* note 12; Haimes, *supra* note 5; Rothstein & Talbott, *supra* note 56; Willians & Johnson, *supra* note 3.

[60] Paul M. Monteleoni, *DNA Databases, Universality, and the Fourth Amendment,* 82 N.Y.U.L. REV. 247, 247-248 (2007).

[61] *See generally* Monteleoni, *supra* note 60.

[62] Sheila McLaughlin, *Database Keeps DNA from Cleared Suspects*, CINCINNATI ENQUIRER, Aug. 8, 2002, at ¶ 7, available at http://www.enquirer.com/editions/2002/08/08/loc_database_keeps_dna.html (last visited May 20, 2007).

[63] McLaughlin, *supra* note 62, at ¶ 35.

Professor Haimes, a sociologist, explores a variety of social and ethical issues regarding familial searching of DNA databases. The article focuses on familial searches in the United Kingdom, although many of the issues and lessons are equally applicable in the United States. Like the authors of the previous article, Professor Haimes laments the lack of research on familial searches.[64] However, in doing so, she suggests the necessity of incorporating interdisciplinary perspectives: ''understanding the nature of such issues is limited because these questions have been raised from within the field of forensic inquiries where there is little history of a necessity to consider family and kinship studies.''[65] Accordingly, the theoretical framework of the article is set in family and kinship studies.

Familial searching has been used rarely in the United Kingdom, typically in ''high profile cases . . ., mostly involving murder.''[66] The use of familial searches has sparked a variety of criticisms, which Professor Haimes concisely summarizes:

> (i) violating the privacy of the person already on the [database]; (ii) violating the privacy of the (potentially large) pool of possible relatives revealed by these procedures who would otherwise not be involved in police investigations; (iii) reinforcing views about the alleged prevalence of criminality within certain families; (iv) revealing to relatives the presence of a family member on the [database]; (v) revealing a previously unknown genetic link between individuals; (vi) revealing an absence of a genetic link which individuals thought had existed.[67]

In this article, Professor Haimes primarily focuses on the above concerns. However, recall that the authors of the previous article also considered these issues, and argued that they were not of substantial concern.

As a sociologist, Professor Haimes is interested in the impact of familial searches on the families themselves, with a recognition that the term ''family'' is broad and may include social and/or genetic relations. Because no formal studies have been conducted on the impact of familial searches, Professor Haimes draws upon preexisting academic literature to structure her arguments. As such, the article is largely theory-driven, with an emphasis on improving policy.

Professor Haimes delves into a wealth of research about adopted children and their parents, the use of artificial insemination, paternity testing, and the need for self-identification, with particular emphasis placed on the role of testing (including DNA profiling) to reveal family identity.[68] Much discussion focuses on the debate between promoting secrecy versus promoting openness in allowing individuals to ascertain their genetic background. The tendency in the recent past has been towards a greater use of these technologies. One seduction of DNA is that, ''given the uncertainty around

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[64] Haimes, *supra* note 5, at 263.

[65] Haimes, *supra* note 5, at 263.

[66] Haimes, *supra* note 5, at 264.

[67] Haimes, *supra* note 5, at 264.

[68] Haimes, *supra* note 5, at 264-68.

paternity, the attraction of DNA profiling is that it apparently resolves that uncertainty.''[69] Thus, the results of DNA testing may have substantial impacts on how an individual views his or her kinship and identity, though paradoxically ''that certainty then provokes uncertainty over how to best handle this information.''[70] While much of the sociological content is dense to a non-sociologist, Professor Haimes uses the various insights to argue that ''it is highly appropriate to be concerned about the potential socio-ethical impacts of familial searching in forensic investigations.''[71] Analogous to paternity, the dilemma for familial searching is how positive identifications shape identities.

From these theoretical roots flow the six concerns noted earlier. Generally speaking, these concerns speak to the issue of how the results of a familial search impact both individuals and their family unit. One particularly interesting question, though relegated to a footnote, is whether investigators have the duty to disclose the existence of a previously unknown relationship.[72] For instance, doing so could have medical implications by alerting an individual to new information about his or her genetic medical history. Other concerns focus on whether a family member on the database would be ostracized, or whether close family would experience ''guilt merely by association.''[73] This insight provides fodder for thought about the social impacts of law and policy, through the mechanism of labeling theory.[74] It also could serve as an example to test the theory of social control and the impact of respectability, stated as ''[l]aw is greater in a direction toward less respectability than toward more respectability.''[75]

After a deep discussion of the potential impacts to individuals and their families, Professor Haimes presents a series of policy recommendations to address familial searching practices. She begins by noting that the director of the United Kingdom's DNA database believes that familial searches ''should only be used in 'the most serious of crimes.''[76] Because these crimes often are the most visible, placing the police under pressure to produce an offender, the use of familial searching must deserve careful scrutiny with clear rules. To that end, the following recommendations are presented.

First, research is necessary to determine when and how familial searches are actually conducted and how their results will be utilized.[77] Second, ''family specialists and . . . clinical genetics personnel'' should be involved in

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[69] Haimes, *supra* note 5, at 268.

[70] Haimes, *supra* note 5, at 268.

[71] Haimes, *supra* note 5, at 269.

[72] Haimes, *supra* note 5, at 269, n.65

[73] Haimes, *supra* note 5, at 271.

[74] *See, e.g.*, EDWIN M. LEMERT, SOCIAL PATHOLOGY (1951).

[75] DONALD BLACK, THE BEHAVIOR OF LAW 114 (1976).

[76] Haimes, *supra* note 5, at 272.

[77] Haimes, *supra* note 5, at 272.

drafting and reviewing procedures that govern familial searches.[78] Third, guidelines need to specify how offenders on the database and their families should be approached when a familial search has been utilized; the key consideration is whether "such inquiries are overt or covert."[79] Fourth, all personnel involved with familial searches must receive adequate training on the matter.[80] Fifth, personnel must be prepared to handle follow-up questions and have "a clear protocol for referring newly-discovered family and non-family members to another agency, such as family services."[81] Sixth, research must address the accuracy of the database and the search processes. Seventh, personnel involved should receive training in ethics.[82]

Professor Haimes concludes by noting that the implications of familial searching are deep, going beyond procedural and legal questions to also include social and ethical considerations. Familial searches represent a traditional conflict between privacy and social benefit, a blurred boundary seldom resolved by legal dicta. While not a traditional legal analysis, Professor Haimes offers interesting insights on the theoretical impacts of the law, and the resulting policy implications. The recommendations are particularly useful, presenting sound suggestions for a field in its infancy. The prior article also suggests the importance of learning, planning and training to determine how best to use this technology.[83] And, given the concerns about privacy, ethics training is certainly beneficial in order to avoid "Dirty Harry" scenarios of police abuse of discretion (e.g., good ends vs. bad means).[84]

Much of the article is abstract and additional discussion of legal analysis would have proved useful. Additionally, it is unclear how some of Professor Haimes' concerns differ from those that would be raised by any criminal investigation. For instance, ostracizing suspects and offenders, experiencing inconvenience or stress as a result of police inquiries, and diminished privacy in an investigation are unfortunate but normal byproducts of criminal investigations, with or without familial searches, and are not grounds for the cessation of all investigations.[85] Several other areas merit further analysis in future research, as practitioners, scholars and legal professionals work to fully understand the implications of familial searches.

One point worthy of further consideration is the discussion of family criminality. Some of the earliest efforts in the scientific study of criminology

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[78] Haimes, *supra* note 5, at 272.

[79] Haimes, *supra* note 5, at 272.

[80] Haimes, *supra* note 5, at 272-73.

[81] Haimes, *supra* note 5, at 273.

[82] Haimes, *supra* note 5, at 273.

[83] *See* Greely et al., *supra* note 12, at 258.

[84] *See generally* Carl B. Klockars, *The Dirty Harry Problem,* 452 ANNALS AM. ACAD. POL. & SOC. SCI. 33 (1980), *reprinted in* MORAL ISSUES IN POLICE WORK 55-75 (Frederick A. Elliston & Michael Feldberg. eds., 1985).

[85] *See* Greely et al., *supra* note 12, at 256-58.

alleged a hereditary component of criminal behavior.[86] While much early work has been discredited, a new wave of genetic research, drawing upon twin studies, has found evidence of a genetic link to certain crime-encouraging behaviors.[87] As research on the Human Genome Project and other endeavors continue to help scientists understand the biological and genetic roots of human behavior, it will be important for laws and regulations to specify when and how (if, at all) DNA databases and the results of familial searches can be used for research projects. In the United States, such research is generally prohibited, but some questions remain.[88]

Another concern articulated in this article is about establishing regulations for the use of familial searches. Should searches be restricted to high profile or serious cases? On one hand, doing so could serve to limit concerns by restricting the use of a controversial policy for cases where there was clearly a public safety interest, thus balancing privacy versus social benefit. On the other hand, research has found that DNA may be instrumental in solving even minor crimes, and in a cost-effective manner, at that.[89] Further guidance on this issue will likely come from scientists, police officials, and courts interpreting concerns about privacy, invasiveness, and other matters regarding familial searches.

Conclusion

Two things are clear about familial searches: They have the potential to greatly assist law enforcement in the investigation of criminal activity, and they simultaneously have the potential to pose difficult (but interesting) legal questions and policy debates. To date, little legal scholarship has addressed familial searches. The two articles summarized above are useful starting points for conversations, however there remains much research to be conducted and analyzed before practitioners and scholars have a sound understanding of the subject.

Interestingly, both of the reviewed articles suggest that it may be appropriate, as an alternative to the difficulties surrounding familial searches, to consider a universal DNA database (thereby negating the arguments for fa-

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[86] *See, e.g.*, RICHARD DUGDALE, THE JUKES: A STUDY IN CRIME, PAUPERISM, AND HEREDITY (1877).

[87] *See, e.g.*, Denise A. Hines & Kimberly J. Saudino, *Genetic and Environmental Influences on Intimate Partner Aggression: A Preliminary Study*, 19 VIOLENCE & VICTIMS 701 (2004).

[88] *See* David H. Kaye, *The Impact of Behavioral Genetics on the Criminal Law: Behavioral Genetics Research and Criminal DNA Databases,* 69 LAW & CONTEMP. PROB. 259 (2006).

[89] *See* U.S. Department of Justice, *In Short Toward Criminal Justice Solutions: DNA in "Minor" Crimes Yields Major Benefits in Public Safety,* (Nat'l Ins. Just. NCJ #207203, Nov. 2004), *available at* http://www.ncjrs.gov/pdffiles1/nij/207203.pdf (last visited May 19, 2007).

milial searches while creating alternative debates).[90] As DNA law and policy evolve, it is incumbent upon legal scholars to carefully consider the ramifications of scientific discoveries and accompanying policy decisions. The articles reviewed above illustrate this urgency with an issue of contemporary importance to criminal law and evidence.

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[90] *See* Monteleoni, *supra* note 60, passim.