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# De-Neutralizing Identification: *S. & Marper v. United Kingdom*, Biometric Databases, Uniqueness, Privacy, and Human Rights

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In constituting itself as a full-fledged topic of scholarly inquiry, the history of identification has often found it necessary to distinguish its subject matter from the far better studied topic of *identity*. The earliest historians of identification found the notion of identity much discussed by a wide variety of disciplines (e.g., sociology, philosophy, psychology, history), but found little on the history of identification<sup>1</sup> until, that is, they found one another.<sup>2</sup> This, indeed, was one of the most exciting aspects of this emerging field: the by-passing of the familiar discussion of individual and collective *identity formation* for the long overlooked and at least equally important topic of state (and later corporate) sponsored *identification practices*.

This distinction notwithstanding, identification and identity are not so easily separated. State (and corporate) sponsored identification practices inevitably feed into individual and collective identity formations. Identification practices, clearly, produce identifications *and* identities.<sup>3</sup> This blurring of boundaries between identification and identity is not always explicit; it may be in the state's (or corporation's) interest to rhetorically deny any connection between identification and identity, to portray identification as a "neutral" act—neutral with regard to race,

ethnicity, heredity, and behavioural characteristics—that neither forms nor invades citizens’ (or consumers’) sacrosanct identities.

Perhaps the most successful such rhetorical denial surrounded the humble fingerprint, which over the past century became almost universally understood as a biometric marker capable of effecting *identification* without so much as even brushing up against individual or collective *identities*. While the achievement of this nearly universal understanding has been explored elsewhere,<sup>4</sup> this paper explores it from a new angle by positing its possible endpoint: a decision by the European Court of Human Rights called *S. & Marper v. United Kingdom*, which is more commonly read as a decision about the permissible extent of DNA databases.<sup>5</sup> The paper, and the case, suggest that the rhetorical separation of identification from identity may have been a historical anomaly and that a public sense of identification and identity as inextricably connected and overlapping may, historically, be the much more common state of affairs. It suggests that we may be returning to this state in the age of genetics, after a brief (but, at the time, seemingly “natural”) excursion to the opposite state for most of the twentieth century.

The development and rapid advancement of the technology of human DNA profiling since 1985 has generated concerns about surveillance, social control, and medical privacy. In particular, the adoption of this technology by law enforcement agencies and the construction of increasingly large databases of DNA profiles have generated concerns. A debate has transpired over the last two decades or so about the proper scope of these databases. Should the databases be limited to violent offenders, to convicted offenders of all kinds, to those arrested by the police, or

should every citizen be included? What about juveniles who fit into those categories? Utilitarian logic dictated that the larger the database the more useful it would be. Any limitation on database inclusiveness carried the potential of allowing some potentially preventable crimes to occur. But, on the other hand, individual rights discourse seemed to dictate some limits on the database. Surely, ‘unconvicted’ citizens<sup>6</sup> did not merit inclusion on the database. And, for those who put stock in the presumption of innocence, conviction, not mere arrest, would seem to be required to justify inclusion in a state-sponsored law enforcement DNA database.<sup>7</sup>

By 2008, it seemed clear that continued expansion of DNA databases was “inevitable.”<sup>8</sup> More specifically, the world’s DNA databases were tending toward what had become known as the “arrestee database.” That is, the database would stop short of the “universal” citizen database proposed by some enthusiasts, but an arrest alone would be sufficient grounds for suspicion and so warrant the invasion of privacy entailed by inclusion in the database. The arrestee database had been pioneered in the United Kingdom, always the leader in the development and deployment of DNA profiling and databases. In the UK, the arrestee database had been justified by the *R v B* case, which graphically illustrated the utilitarian crime-prevention logic behind the arrestee database.<sup>9</sup> The United States, meanwhile, while slower than the UK to shift toward arrestee databases, was by then showing strong signs of momentum in that direction. By 2008, several U.S. states and the federal government had passed legislation allowing for arrestee databases. The passage of Proposition 69 in 2004 in California, the largest American state, seemed particularly significant in signalling this trend.<sup>10</sup>

Numerous scholars, myself included, reasoned that most of the world's databases seemed likely to settle upon arrest as the criterion for inclusion.<sup>11</sup> There were good reasons to believe this. First, the relentless utilitarian logic of inclusiveness seemed like it would "trump any other argument."<sup>12</sup> Second, though some legal scholars believed that arrest was insufficient to warrant the increased privacy intrusion entailed by inclusion in a genetic database,<sup>13</sup> courts seemed unlikely to adopt such arguments. European and American courts had found the retention of genetic samples acceptable for convicts, and in many cases for arrestees as well.<sup>14</sup> In addition, it was becoming clear that even "shed" DNA, cells left in the environment by ordinary citizens as they went about their daily lives, enjoyed no legal protection.<sup>15</sup> The *Marper* case, a lawsuit by two individuals, one a juvenile, who had been arrested but not convicted of crimes, demanding the expungement of their DNA profiles from the UK's National DNA Database (NDNAD) had failed in all British courts, including the House of Lords. Third, the arguments of privacy advocates, which tended to invoke "genetic exceptionalism," the claim that genetic information was uniquely dangerous and therefore should not be permitted in government databases without extraordinary justification,<sup>16</sup> seemed not to command sufficient resonance with the public to counter utilitarian crime prevention arguments.

If there seemed little chance of halting database growth, why then was it expected that database growth would stop at arrestees, rather than growing to encompass the entire citizenry? One reason was that "universal databases," as they were called, would be so much larger than arrestee databases that significant issues of cost, technological capacity, and perhaps increased adventitious matches would

be expected to present themselves. However, perhaps more importantly, the notion of a universal database was the hobbyhorse of pundits and law professors, not of legislators. Pundits carried the utilitarian crime prevention logic to its extreme, while law professors touted the supposed egalitarian and anti-discriminatory effects of including everyone in the database.<sup>17</sup> Legislators, however, evinced little enthusiasm for proposing legislation to mandate the inclusion of their own and their constituents' genetic information in state-sponsored databases. Rather, as I argued at the time, legislation to expand databases were politically popular only when founded on "othering"—that is, when the public perceived the measures as being applied to criminals other than themselves.<sup>18</sup> One might have thought that this logic would falter at least a little when it came to arrestees because while voters might assume they and their loved ones would never be convicted of crimes, they might not assume they would never be arrested. But apparently this was not the case.<sup>19</sup>

Yet another reason to think that the world would "settle" on arrestee databases was historical. To understand this, it necessary to take a brief excursion into the history of biometric databases.

#### The History of Biometric Databases

Although identification, biometric and otherwise, has a long history,<sup>20</sup> law enforcement biometric *databases* were first developed in the nineteenth century. Although law enforcement agencies collected photographs in the mid-nineteenth century, it is not clear that these should be called "databases" since they had no way of ordering the data and thus offered no means of retrieving data other than sorting through the entire collection. The Bertillon system, developed in France in the

1880s, was the first true criminal identification database.<sup>21</sup> Records were indexed according to a series of eleven anthropometric measurements, taken with impressive precision using a set of custom-built instruments. The anthropometric system was soon joined by a rival system, known as “dactyloscopy,” based on a different marker, the pattern of ridges on the tips of the fingers. Both these systems enabled state officials with reasonable accuracy to retrieve the records of individuals whose data was present in the database, even with relatively large databases, and even when those individuals used aliases.

These systems ushered in the notion that the bounded body could be used to effect bureaucratic identification. Crucial to this notion was the belief that, with certain biometric markers, a one-to-one correspondence could be effected between a body and a set of bureaucratic records. This belief relied on the twin assumptions: that a single body would consistently correspond with a single set of records and that no other body would correspond with that set of records. Sets of 11 anthropometric measurements, sets of 10 fingerprint patterns, and, later, sets of 13 (or some other number) genetic loci were thought to have these properties—or at least to come close enough to having these properties for government work.

The question arises as to whether these systems used data that was viewed as sensitive, in the way that genetic information today is viewed as sensitive. The sensitivity of anthropometric information is relatively well understood, given efforts at the time to use anthropometric information, such as, for example, the ratio of head length to head width, to identify “born criminals” or to delineate racial categories.<sup>22</sup>

The sensitivity of fingerprint information is somewhat less obvious, given the widespread belief that fingerprint patterns are “neutral” information that contain no information about race, ethnicity or behavioural characteristics. As Rabinow put it, fingerprints “revealed nothing about individual character or group affiliation.”<sup>23</sup> The supposed neutrality of fingerprint patterns, however, turns out to be a historical achievement, rather than a natural fact.<sup>24</sup> Turn of the century anthropologists, statisticians, zoologists, and medical researchers did, in fact, view fingerprint patterns as information that was likely to provide clues to race, ethnicity, inheritance, and behavioural characteristics. French doctors recorded fingerprint patterns in prisons and asylums and took prints from epileptics. Anthropologists recorded the fingerprint patterns of various tribes and ethnic groups around the world. Zoologists recorded the fingerprint patterns of various primate species. Francis Galton examined the patterns of a set of racial groups and concluded that he could find no statistically significant difference, other than slightly fewer arches among Jews. However, this disappointing conclusion, famously characterized by Rabinow as “Galton’s regret,” was not shared by either his students or his colleagues.<sup>25</sup> Eventually two rival schools of thought emerged. European researchers held that the most complex fingerprint pattern (the whorl) was the most highly evolved. American researchers, on the other hand, argued that the least complex pattern (the arch) was the most highly evolved because it was *least* functional, and thus signalled the greatest evolutionary distance from the functional tree-limb-swinging needs of our primate ancestors.<sup>26</sup>



While such theories seem amusing today, the notion that general tendencies toward certain fingerprint patterns are genetically influenced and that the frequency of different pattern types are different among different racial and ethnic groups (whatever is meant by those terms), seems borne out by current research. Fingerprint patterns correlate with (socially defined) race and ethnicity and perhaps even with behaviour; however the correlations are quite weak. It is just such correlations that are behind, for example, the recent claim to have “discovered” that Leonardo Da Vinci’s mother was “an Arab.”<sup>27</sup>

Fingerprint patterns, then, are not different from anthropometric measurements or genetic alleles by being “neutral” empty signifiers devoid of any information that might be correlated with race, ethnicity, or behaviour. Anthropometric correlations, however, are weak as well, and so, it appears, are those of the genetic markers used in criminal databases.<sup>28</sup> What *is* different about fingerprint patterns, however, is the widespread public perception that they *are* “empty signifiers”<sup>29</sup>—that they don’t contain information that might be considered “dangerous” or “privacy-invading” in the sense that genetic markers are considered today. However, this perceived neutrality is not a natural fact but a historical achievement; it is the result of the historical marginalization of those researchers interested in mining predictive information from fingerprint pattern and the takeover of the field by law enforcement “identification clerks”, whose interest was solely in linking suspect bodies to criminal records. In short, fingerprint database managers successfully neutralized the fingerprint, construed it as an empty signifier, and thus managed to create a notion of “identification” as a seemingly pure act

distinct from the notion of “identity.”<sup>30</sup> This, it would seem, was something new, given that identity and identification have historically been understood to be inextricably linked.<sup>31</sup>

It was around this time, in the first half of the twentieth century, that most nations settled on what we might call the “arrestee compromise” for fingerprint databases. It should be noted that legal challenges to the archiving of fingerprints have uniformly failed. For example, the claim that fingerprinting violated the Fifth Amendment to the US Constitution’s ban on self-incrimination was dismissed with Wigmore’s pithy aphorism that fingerprints “were not testimony about the body, but the body itself.”<sup>32</sup> At the same time, proposals for “universal,” or citizen-wide, databases were generally rejected. Three bills for such databases were defeated in the United States between 1935 and 1943. And, proposals for a universal database provoked staunch resistance in Argentina.<sup>33</sup> Most likely, such proposals foundered for the same reason proposals for universal DNA databases enjoy little political traction today: while there is significant political capital to be gained by proposals to archive the biometric data of criminal “others,” there is little to be gained by proposals to put voters’ information into state-sponsored databases. Thus, virtually all countries adopted the practice that arrest was sufficient to warrant the permanent archiving of fingerprint patterns in law enforcement databases. This widespread, permanent retention of fingerprint data was widely considered unremarkable and to invoke little or no privacy violation, in part, I would argue, because fingerprint patterns were widely perceived as being devoid of any information that could be predictive of race, ethnicity, behaviour, or health. But,

barring arrest, most citizens (with some notable exceptions, such as public servants, teachers, members of the armed forces, and so on) retained the privilege of remaining outside the database. The result was a two-tier system with some individuals information permanently stored in the database and others remaining outside it.

### Struggles over DNA Databases

This was the situation when a new, extremely powerful biometric marker, the DNA profile, was developed in the mid-1980s. Law enforcement agencies quickly began to use the marker for forensic investigation, and soon thereafter began to amass databases of genetic profiles. That these markers had some potential correlations with sensitive attributes such as race was apprehended almost immediately; an early article by the inventor of the technique, Alec Jeffreys, predicted the development of “reverse photofits” from crime scene DNA profiles-- what today would be “phenotypic profiling.”<sup>34</sup>

It is perhaps difficult today to reconstruct the mindset of the early 1990s, in which it still seemed possible that DNA databases might remain restricted to, say, violent felons convicted of homicide or sex crimes. Of course, that was not the case; through “function creep,” DNA databases expanded to include, in many cases, all convicted felons, and, further, in the case of many jurisdictions, those arrested but not convicted of crimes.<sup>35</sup> A few jurisdictions, including the UK, went even further and adhered to the principle that no genetic profile should be discarded, resulting in the seemingly curious policy that even *victims’* profiles were retained. Thus ensued

a rather heated debate over the proper scope of DNA databases: How broad or narrow should the criteria of inclusion be?<sup>36</sup>

Two obvious potential compromises emerged from this debate. The first, which we might call the “arrestee compromise,” has already been discussed above. Databases limited to those arrested for, but not convicted of crimes, placed legislators in the politically comfortable position of maximizing the perception that they were proactive in fighting crime while defusing the potential charge that they were bringing about a surveillance state.

The second compromise might be called “the sample destruction compromise.” The most alarming scenarios raised by privacy advocates, concerning the leakage of sensitive health information (so-called “future diaries” that would allow predictions of disease susceptibility) from law enforcement databases, required access to genetic *samples*—that is the actual cells drawn from the body through a blood sample or cheek swab. Law enforcement databases, however, relied on *profiles* of a very small (for example 13 in the U.S.) number of genetic locations. Thus, a U.S. “DNA profile” is, in fact simply a string of 26 numbers: two genetic profiles (one maternally inherited and one paternally inherited) at each of the 13 locations. It is this string of numbers, not the sample, that is stored in the database. Database advocates sought to portray these strings of numbers as innocuous in much the way fingerprint patterns had become construed as neutral. It was argued that the locations used in law enforcement profiling were “junk DNA,” having no biological function and thus were essentially “empty signifiers.”<sup>37</sup> These claims turned out to be slightly misleading: some forms of “junk DNA” turned out to

function, and even the loci used by law enforcement seemed to correlate with, even if they did not cause, disease propensity. However, the correlations were weak, and it seemed likely that a potential genetic discriminator would have an extremely difficult time deriving useful predictive information from the law enforcement profiles alone.<sup>38</sup> Privacy advocates, however, invoked “genetic exceptionalism” to insist that DNA profiles were “nothing like” fingerprint patterns.<sup>39</sup>

An obvious solution to this standoff would have been for the state to agree to destroy the samples after deriving the profiles.<sup>40</sup> While some advocated this solution,<sup>41</sup> most database managers insisted that sample needed to be retained as a hedge against technological innovation and perhaps also in order to conduct “confirmation analyses” in cases of ambiguous or partial “matches.”<sup>42</sup> It was argued that the settlement upon the current set of loci was not stable and the future technology was likely to develop a profile with a more desirable set of qualities. With samples destroyed, a change in the technological standard would require re-sampling a large number of individuals.

#### The Case of S. & Marper v. UK

It was in this context that two individuals, a juvenile under the pseudonym “S.” and Michael Marper filed suit against the British government for violation of their privacy through the permanent retention of their genetic profiles in the NDNAD. S. had been arrested in 2001 at age 11 for robbery and acquitted of the crime. Marper had been arrested the same year for harassment, but the prosecution had been discontinued. Both requested that their profiles be expunged from the NDNAD, but under official policy both profiles would be retained permanently.

Their consolidated suit demanding expungement was rejected by the Administrative Court in 2002, and this decision was upheld by the Court of Appeal. They then appealed to the House of Lords, which, in 2004, dismissed the appeal.

The Lords relied heavily on the utilitarian logic dictated by the *R. v B.* case—that crimes might be solved by searching crime scene profiles against even those acquitted of the crimes for which they had been accused. Moreover, the Lords were sceptical of the appellants’ claim that retention of their profiles violated their privacy. The Lords felt the inclusion in the databases was not a violation of privacy and that, even if it was, the violation was minimal and justified by the state’s interest in public safety. The Lords also deemed “not relevant” the sorts of future scenarios of potential misuse touted by privacy advocates.<sup>43</sup>

S. and Marper appealed their case to the European Court of Human Rights (ECoHR), which has become a sort of “court of last resort” for individual rights cases emanating from European countries. And, indeed, it is a court of last resort in that its decisions are not appealable to any higher court and its decisions are binding. Signatory nations must adhere to the Court’s decisions or abrogate the treaty. Human rights is at once an enormously powerful discourse and an unruly, contested, and, indeed, reflexive legal concept.<sup>44</sup> However, in this case human rights law succeeded in halting the utilitarian logic of inexorable expansion where conventional privacy law had failed.

It is worth repeating that at this time the momentum behind the trend toward arrestee databases seemed, to many scholars, irresistible, and that there might be no “road back in time.”<sup>45</sup> However, in 2008 the Court handed down a

decision ruling that British retention policies for DNA profiles, samples, and fingerprint records violated Article 8 of the Convention, which states “Everyone has the right to respect for his private . . . life” and “There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society . . . for the prevention of disorder or crime”.<sup>46</sup> Therefore, *S. & Marper* forced the British government to change its policy on retaining biometric information in its criminal identification databases. The UK arrestee database, the first and largest in the world, was in some sense dead.

The structure of the *Marper* opinion was as follows: The Court first asked whether the storage of DNA samples, DNA profiles, and fingerprints constituted “an interference with private life.” The answer to this question was yes. The Court then asked whether there was sufficient justification for the interference. The answer to this question was no, at least there was not enough justification to support “the blanket and indiscriminate nature of the powers of retention of the fingerprints, cellular samples and DNA profiles of persons suspected but not convicted of offences.” This, the Court concluded, “fails to strike a fair balance between the competing public and private interests. . . . Accordingly,” it continued, “the retention at issue constitutes a disproportionate interference with the applicants' right to respect for private life and cannot be regarded as necessary in a democratic society”.<sup>47</sup>

#### Analysis of *S. & Marper*

An obvious question is: how was the ECOHR able to reach this conclusion when so many other courts had visited the same issues and were not persuaded by

the privacy issues that it found so compelling? To be sure, the ECOHR is a different type of court, applying a different legal regime, in a different political context. But, even so, it seems worthwhile to inquire how it was that information that seemed so innocuous to so many other courts came to seem so invasive to the ECOHR.

Here it is important to note that there were two obvious moves that the Court did *not* make. In eschewing these moves, the Court defied both the predictions of some scholars and the general judicial preference for narrow decisions. Both these potential moves available to the court would have involved drawing distinctions between the three types of biometric information that were at issue in the case: DNA samples, DNA profiles, and fingerprints. Although the court acknowledged that there were significant differences between these three types of information, it declined to view those differences as dispositive:

The Court acknowledges that the level of interference with the applicants' right to private life may be different for each of the three different categories of personal data retained. The retention of cellular samples is particularly intrusive given the wealth of genetic and health information contained therein. However, such an indiscriminate and open-ended retention regime as the one in issue calls for careful scrutiny regardless of these differences.<sup>48</sup>

The first obvious move would have been to invoke genetic exceptionalism and distinguish between genetic information and fingerprints. Significantly, it should be noted that this is a rhetorical move frequently (perhaps in fact always) invoked by privacy *advocates*<sup>49</sup>—in short, precisely those organizations supporting the plaintiffs, with whom the court ultimately sided. In other words, the Court, though siding with the plaintiffs, declined to employ what the plaintiffs' own supporters apparently viewed as their strongest rhetorical argument. Instead, the



Court concluded that the information contained in fingerprints, no less than genetic information, constituted “an interference with private life”:

It is accepted in this regard that, because of the information they contain, the retention of cellular samples and DNA profiles has a more important impact on private life than the retention of fingerprints. However, the Court, like Baroness Hale (see paragraph 25 above), considers that, while it may be necessary to distinguish between the taking, use and storage of fingerprints, on the one hand, and samples and profiles, on the other, in determining the question of justification, the retention of fingerprints constitutes an interference with the right to respect for private life<sup>50</sup>

The second obvious move would have been to invoke what I described above as the “sample destruction compromise.” One would have thought that the idea of compromising between the parties by ordering the destruction of samples, which contained the individuals full complement of genetic information, while allowing the retention of profiles would have been appealing to a court. This is especially the case given the frequent use by database proponents of the rhetorical argument that DNA profiles consist of “junk DNA”, which is essentially devoid of any information that would constitute a serious invasion of privacy.<sup>51</sup> This would have allowed the court to claim to be protecting public safety and privacy simultaneously. Instead, although the Court acknowledged that DNA profiles “contain a more limited amount of personal information extracted from cellular samples in a coded form,” it insisted, “nonetheless, that the profiles contain substantial amounts of unique personal data”

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If the Court did not draw upon the rhetorical tropes most commonly advocated by interested parties and scholars who comment on these areas, how then did it carve out its own path toward finding the indiscriminate retention of biometric information a privacy invasion? A close reading of the opinion suggests

that two recent developments were crucial in turning the court against UK databases practices: familial searching and phenotypic profiling.

Familial searching, also sometimes known as low-stringency searching or genetic proximity testing, is a technique typically employed when a search of a crime scene sample against a database fails to yield any “hits”, i.e. it fails to yield any profiles in the database that are consistent at all tested loci with the crime scene sample.<sup>53</sup> At this point, some law enforcement agencies have concluded that it might be useful to inquire whether there are any profiles in that database that are consistent with the crime scene samples at *almost all* of the tested loci. Such a profile might belong to a close blood relative of the donor of the crime scene sample. If such a profile were located, an conventional police investigation might be launched into the close blood relatives of the donor of that profile. The technique has been used in a relatively small number of cases with mixed success. Not surprisingly, the UK was the most aggressive user of familial searching.

Bieber, Lazer, and Brenner and Greely *et al.*, were among the earliest scholars to anticipate that familial searching would introduce ethical issues that would profoundly change the DNA database inclusiveness debate. They noted that the practice of familial searching, if permitted, would constitute the *de facto* inclusion of each individual’s close blood relatives in the database. Thus, familial searching greatly expanded the inclusiveness of the database. Bieber and Lazer noted that this aspect of familial searching was troubling and that racial dimensions were troubling as well.<sup>54</sup> Greely *et al.* argued that the privacy invasion of close blood relatives—what they called “Family Ties”—was not compelling enough to argue against familial

searching. However, given that the racial composition of the US database was already racially skewed, they estimated that the existence of familial searching placed African-Americans *de facto* in the national database at four times the rate of whites. On this basis, they concluded that familial searching—at least in the US context—was ethically unacceptable.<sup>55</sup>

As noted above, phenotypic profiling is the practice of trying to make phenotypic predictions about the donor of an unidentified crime scene sample. The technique has been used in a handful of cases with mixed success. It has been extensively criticized, both on privacy grounds and for the simplistic assumptions about phenotypic characteristics such as “race” upon which it inevitably rests.<sup>56</sup>

It is noteworthy that the Court’s concerns about familial searching and phenotypic profiling denote privacy invasions that are not personal but relational. In contrast to the person as a bounded body, with self-contained secrets about its own health and “future diary”, as imagined in classical privacy discourse,<sup>57</sup> the ECOHR rather seemed to conceive of the person as a far more connected being: a notion of the individual as a web of relationships, rather than an isolated body. Privacy is violated by knowing those relationships—kinships, in the case of familial searching; racial or ethnic, in the case of phenotypic profiling—rather than by knowing intimate details about the individual. In this sense, the decision seems to bear out Gould’s pessimism about the ability of arguments that frame privacy in terms of self-construction of identity to resist “the pressures of security.”<sup>59</sup> Instead, the decision seems to suggest that a broader notion of privacy framed around “*familial or relational privacy*” has more purchase in resisting utilitarian arguments

framed around crime control.<sup>60</sup> Significantly, the ECOHR found familial searching to be a privacy violation in and of itself, in marked contrast to American scholars who (perhaps because of the greater salience of race in America than in Europe) were only able to find familial searching a privacy violation as a form of race discrimination. Familial searching and phenotypic profiling thus break down the claimed separation between *identity* and *identification*.<sup>61</sup>

### The Neutrality of Biometrics

When considered in light of the history of fingerprint identification, the Marper decision can be read as a predictable consequence of genetic database proponents having overplayed their hand and having failed to heed the lessons of history. The history of fingerprinting illustrates the importance of treating a biomarker which is being considered for widespread public use as a neutral identifier. Genetic database proponents certainly made significant efforts in that direction, most notably by characterizing the loci used in databanking as “junk DNA.” However rhetorically resonant that term, such arguments always relied upon convincing the public, somewhat counter-intuitively, to believe simultaneously that complete gene sequences were “future diaries” and that the database loci were “junk.”

Moreover, despite the frequent invocations of the notion of “junk DNA,” it may be argued that the efforts to portray genetic information as empty were always somewhat half-hearted. One can discern, in the early enthusiastic efforts to develop not only familial searching and phenotypic profiling, but also behavioural genetic explanations of criminal behaviour,<sup>62</sup> an enthusiasm for the power of genetics which

belied claims about the neutrality of databanked information. Simply put, proponents were just too tempted by the prospect of linking genetic *identification* into the larger discourse of genetic *identity*, in which genetics serve as potential explanation—and cure—for virtually all behaviour, to adhere to the rhetoric that databanked genetic information was *just* information. Proponents of forensic DNA profiling were too eager to associate databanking with projects such as familial searching and phenotypic profiling, which, in retrospect, perhaps should have been viewed as dangerous to the overall surveillance project—dangerous because they threatened to undermine the claims of neutrality that would be crucial for public acceptance of large criminal genetic databases.

In short, DNA proponents *failed* to sever identification from identity as effectively as their forebears did with fingerprints. For this, they paid the price of the Marper decision, in which the court rejected the notion that even DNA *profiles* constituted neutral identifiers:

While the information contained in the profiles may be considered objective and irrefutable in the sense submitted by the Government, their processing through automated means allows the authorities to go well beyond neutral identification<sup>63</sup>

#### The Unintended Consequences of *Marper*

And yet, the consequences of *Marper* were not felt solely by proponents of DNA databasing. Astonishingly, DNA proponents not only brought down the UK's NDNAD, they brought down the nearly century old fingerprint database as well. For the Marper decision, as noted above, declined to draw a bright-line distinction between genetic and fingerprint identification. The decision, therefore, seemed to hold that the permanent retention of fingerprints as a consequence of arrest must

also be justified as a proportionate response to the threat of crime. Thus, the Marper decision seems to have undermined the long settled principle that the retention of fingerprints from arrestees is completely harmless from a privacy standpoint.<sup>64</sup> The practical consequences of this holding have been little noticed and remain unclear.

Even more broadly, of course, the Marper decision may be seen as healing the rupture between *identification* and *identity* that had become inherent in the discourse on scientific policing in the 20<sup>th</sup> century.<sup>65</sup> Indeed, it might be argued that, with genetics, a more powerful biometric technology has only rendered more visible what has *always* been true—but more *weakly* so—about *all* biometric identifiers: that identification and identity are inseparable. The purported identification of Leonardo’s mother as an Arab was, after all, in a weak sense, both familial searching and phenotypic profiling using fingerprints not genetic markers, but law enforcement does not currently seem to view fingerprinting as a promising technology through which to pursue these goals.

What are we to make of the Court’s unexpected treatment of fingerprints? On the one hand, the Court repeated the sorts of hyperbolic adjectives that have been heard about fingerprints for over a century: “neutral,” “objective,” “irrefutable,” “unique”<sup>66</sup> Recent scholarship emanating not from privacy debates but from legal debates has shown the fingerprint identification is neither “objective”<sup>67</sup> nor “irrefutable.”<sup>68</sup> More interesting, for our purposes, however, is the Court’s denial of the longstanding notion of fingerprints’ alleged neutrality. The Court’s language on the point is maddeningly elusive: within the same paragraph it stated that the claim that fingerprints are “neutral” is “true” and yet also that “retention of them . . .

cannot be regarded as neutral.” Leaving its self-contradiction aside, however, the significant thing seems to be that the Court, in the final analysis, denied the neutrality of the information contained in fingerprints. The reasons behind this denial were vague: “fingerprints objectively contain unique information about the individual concerned allowing his or her identification with precision in a wide range of circumstances”<sup>69</sup> This claim of uniqueness is overstated; in the forensic context, the vaunted “uniqueness” of human friction ridge skin has been shown to be philosophically meaningless, a Wittgensteinian language game amounting to little more than a discourse over how one defines the term “unique.”<sup>70</sup> In both forensic and archival contexts, the issue is not really uniqueness, but rather the degree of precision with which the practice of identification can be effected, (as the Court, arguably, apprehended). In addition, it should be noted that, as far as diagnostic uses are concerned, whatever potential uses inhere in biometric identifiers they are generated by analyzing similarities and differences between individuals rather than their essential ‘uniqueness’. In isolation even a gene sequence is not a “future diary” , but rather a “diary” that can only be “read” through knowledge of other individuals. It is only through probabilistic conclusions derived from knowledge about *other individuals*, (with a few determinist exceptions), that an isolated individual’s genetic markers appear to ordain a particular health or behavioural outcome or racial or ethnic ancestry. In forensic, archival and diagnostic applications of biometrics, *uniqueness* counts for little; it is the similarities and differences between individuals that matter.

The reasoning of the ECHR seemed to finally erase the temporarily drawn distinction between “identity” and “identification”, which had sustained fingerprint databases for decades. As the Court saw it, the act of “identification” in and of itself invoked identity and thus invaded privacy, hence it was a violation of human rights. This seemed to be true regardless of the extent to which fingerprint patterns correlated with hereditary, racial, ethnic, or behavioural traits. Thus, the *Marper* judgement may be viewed as having done more than merely limit the seemingly inexorable expansion of genetic databases. It may also be viewed as having put an endpoint to the fleeting and historically brief period in which it was possible to think of “identification” as a “neutral” practice, which could be treated as entirely unrelated to “identity.” This separation of “identity” and “identification” may be viewed as the fleeting rhetorical achievement of the police identification clerks who won control of fingerprinting, temporarily banishing biologists and statisticians to the margins of identification practice. Their achievement however, was short-lived. With the development a new biometric marker, the gene, which differed from the fingerprint not in kind by having correlations with perceived racial, ethnic, and behavioural traits, but merely in degree by having more powerful correlations, biologists and statisticians were brought back into the field. Promoters of genetic identification proved unable to resist invoking the supposed power of genetics to hype the new technology and practices, such as familial searching and phenotypic profiling, which made the non-neutrality of biometrics manifest once again. Law enforcement may view this as a squandering of the hard won reputation for “neutrality” that made biometric identification socially acceptable. Civil libertarians



may view this as welcome revelation of the non-neutrality of all biometric identification. Those, like me, who are troubled by biological determinism may still view the victory as somewhat pyrrhic in that it perpetuates, rather than challenges, the implicit assumption that ancestry and destiny are written in the body. But, no matter how this landmark case is viewed, I might hazard that future historians of identification may find it will be some time before we are again able to separate “identity” from the practice of identification.

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are those of the author and do not necessarily reflect the views of the National Science Foundation.

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<sup>1</sup> R. Williams (2010) 'DNA Databases and the Forensic Imaginary' in R. Hindmarsh and B. Prainsack (eds.) *Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing* (Cambridge: Cambridge University Press), 131-52, 131.

<sup>2</sup> J. Torpey and J. Caplan (eds.) (2001) *Documenting Individual Identity: The Development of State Practices since the French Revolution* (Princeton: Princeton University Press).

<sup>3</sup> *Ibid.*, 3.

<sup>4</sup> S. A. Cole (2001) *Suspect Identities: A History of Fingerprinting and Criminal Identification* (Cambridge: Harvard University Press); S. A. Cole (2007) 'Twins, Twain, Galton and Gilman: Fingerprinting, Individualization, Brotherhood and Race in *Pudd'nhead Wilson*', *Configurations*, 15:3, 227-65.

<sup>5</sup> *S. And Marper V. United Kingdom* (2008), European Court of Human Rights.

<sup>6</sup> I prefer the term “unconvicted” here to two loaded terms which are often used to describe this population: “law-abiding” or “innocent.” Both these terms imply that the state’s bright-line distinction between those it has identified as having broken the law or of being guilty of some crime necessarily corresponds to an actual bright-line distinction between individuals who do or do not obey the law or, worse, individuals who are in some fundamental sense “guilty” and “innocent.” Rather, I adhere to the practical notion that virtually all individuals break the law in some way and the Kafkaesque notion that all individuals are in some sense “guilty.” It should be noted, however, that here I mean “unconvicted” for that particular crime.

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<sup>7</sup> L. Campbell (2010) 'A Rights-Based Analysis of DNA Retention: 'Non-Conviction' Databases and the Liberal State', *Criminal Law Review*, 12, 889-905.

<sup>8</sup> T. Duster (2006) 'Explaining Differential Trust of DNA Forensic Technology: Grounded Assessment or Inexplicable Paranoia', *Journal of Law, Medicine and Ethics*, 34:2, 293-300 298.

<sup>9</sup> R. Williams and P. Johnson (2008) *Genetic Policing: The Use of DNA in Criminal Investigations* (Cullompton: Willan), 84-86.

<sup>10</sup> Proposition 69 mandated the collection, beginning five after the passage of the law, of DNA samples from any adult arrested for any felony. T. Simoncelli and B. Steinhardt (2006) 'California's Proposition 69: A Dangerous Precedent for Criminal DNA Databases', *Journal of Law, Medicine and Ethics*, 34:2, 199-213.

<sup>11</sup> C. McCartney (2006) 'The DNA Expansion Programme and Criminal Investigation', *British Journal of Criminology*, 46, 175-92; R. Williams and P. Johnson (2006) 'Inclusiveness, Effectiveness and Intrusiveness: Issues in the Developing Uses of DNA Profiling in Support of Criminal Investigations', *Journal of Law, Medicine and Ethics*, 34:2, 234-47 239; S. A. Cole (2007) 'How Much Justice Can Technology Afford? The Impact of DNA Technology on Equal Criminal Justice', *Science and Public Policy*, 34:2, 95-107 178; J. Y. Dahl and A. R. Sætnan (2009) 'It All Happened So Slowly' — on Controlling Function Creep in Forensic DNA Databases', *International Journal of Law, Crime and Justice*, 37, 83-103; S. Krimsky and T. Simoncelli (2011) *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties* (New York: Columbia University Press), 151. Some scholars, however, seemed to anticipate the European Court's ruling against arrestee databasing in *Marper*, e.g., A.

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Roberts and N. Taylor (2005) 'Privacy and the DNA Database', *European Human Rights Law Review*, 4, 373-92.

<sup>12</sup> C. McCartney (2006) *Forensic Identification and Criminal Justice* (Cullompton: Willan), 195-96; M. A. Rothstein and M. K. Talbott (2006) 'The Expanding Use of DNA in Law Enforcement: What Role for Privacy?', *Journal of Law, Medicine and Ethics*, 34:2, 153-64 161; Williams and Johnson *Genetic Policing: The Use of DNA in Criminal Investigations*, 149-50; Dahl and Sætnan 'It All Happened So Slowly' — on Controlling Function Creep in Forensic DNA Databases', 92.

<sup>13</sup> T. Maclin (2006) 'Is Obtaining an Arrestee's DNA a Valid Special Needs Search under the Fourth Amendment? What Should (and Will) the Supreme Court Do?', *Journal of Law, Medicine and Ethics*, 34:2, 165-87.

<sup>14</sup> Campbell 'A Rights-Based Analysis of DNA Retention: 'Non-Conviction' Databases and the Liberal State', 891.

<sup>15</sup> E. E. Joh (2006) 'Reclaiming 'Abandoned' DNA: The Fourth Amendment and Genetic Privacy', *Northwestern Law Review*, 100, 857-84; Krimsky and Simoncelli *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties*, 116.

<sup>16</sup> G. Annas (2004) "'Genetic Privacy'" in D. Lazer (ed.) *DNA and the Criminal Justice System: The Technology of Justice* (Cambridge, Mass.: MIT Press), 135-46; Krimsky and Simoncelli *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties*.

<sup>17</sup> B. Lambert (1998) 'Giuliani Backs DNA Testing of Newborns for Identification', *New York Times*, Dec. 17; H. Safir and P. Reinharz (2000) 'DNA Testing: The Next Big Crime-Busting Breakthrough', *City Journal* 10:1 Winter; A. R. Amar (2002) 'A Search

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<sup>18</sup> J. Rule (1974) *Private Lives and Public Surveillance* (New York: Schocken), 339; Cole 'How Much Justice Can Technology Afford?'

<sup>19</sup> S. A. Cole (2006) 'The Myth of Fingerprints', *GeneWatch* 19:6 Nov.-Dec., 3-6.

<sup>20</sup> V. Groebner (2007) *Who Are You? Identification, Deception, and Surveillance in Early Modern Europe*, trans. M. Kyburz and J. Peck (New York: Zone).

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<sup>24</sup> Cole 'Twins, Twain, Galton and Gilman: Fingerprinting, Individualization, Brotherhood and Race in *Pudd'nhead Wilson*'.

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<sup>26</sup> Cole 'Twins, Twain, Galton and Gilman: Fingerprinting, Individualization, Brotherhood and Race in *Pudd'nhead Wilson*'.

<sup>27</sup> M. Falconi (2006) 'Experts Reconstruct Leonardo Fingerprint', *Associated Press*, Dec. 1.

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<sup>29</sup> J. Pugliese (1999) 'Identity in Question: A Grammatology of DNA and Forensic Genetics', *International Journal for the Semiotics of Law*, 12, 419-44; Williams and Johnson 'Inclusiveness, Effectiveness and Intrusiveness: Issues in the Developing Uses of DNA Profiling in Support of Criminal Investigations', 239.

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- <sup>30</sup> Cole *Suspect Identities: A History of Fingerprinting and Criminal Identification*, 118.
- <sup>31</sup> Groebner *Who Are You? Identification, Deception, and Surveillance in Early Modern Europe*.
- <sup>32</sup> J. H. Wigmore (1923) *A Treatise on the Anglo-American System of Evidence in Trials at Common Law*, 2 ed., vol. 4, 5 vols. (Boston: Little Brown).
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- <sup>40</sup> Dahl and Sætnan 'It All Happened So Slowly' — on Controlling Function Creep in Forensic DNA Databases', 100.
- <sup>41</sup> Smith 'Let's Make the DNA Identification Database as Inclusive as Possible', 388; Krinsky and Simoncelli *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties*, 241, 335. This solution was recommended by the Australian Law Reform Commission (Krinsky and Simoncelli, 200).
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- <sup>43</sup> Roberts and Taylor 'Privacy and the DNA Database'.
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51; A. Riles (2006) 'Anthropology, Human Rights, and Legal Knowledge: Culture in the Iron Cage', *American Anthropologist*, 108:1, 52-65.

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<sup>46</sup> Quoted in *S. And Marper V. United Kingdom*, ¶58.

<sup>47</sup> *Ibid.*, ¶125.

<sup>48</sup> *Ibid.*, ¶120.

<sup>49</sup> Krinsky and Simoncelli *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties*, 184.

<sup>50</sup> *S. And Marper V. United Kingdom*, ¶86.

<sup>51</sup> Kaye 'Please, Let's Bury the Junk: The Codis Loci and the Revelation of Private Information'.

<sup>52</sup> *S. And Marper V. United Kingdom*, ¶¶74-75.

<sup>53</sup> B. Prainsack and V. Toom (2010) 'The Prüm Regime: Situated Dis/Empowerment in Transnational DNA Profile Exchange', *British Journal of Criminology*, 50:6, 1117-35.

<sup>54</sup> F. Bieber and D. Lazer (2004) 'Guilt by Association', *New Scientist* Oct. 23, 20; F. R. Bieber, C. H. Brenner and D. Lazer (2006) 'Finding Criminals through DNA of Their Relatives', *Science*, 312:5778, 1315-16.

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<sup>59</sup> B. J. Goold (2007) 'Privacy, Identity and Security' in B. J. Goold and L. Lazarus (eds.) *Security and Human Rights* (Oxford: Hart), 45-71, 63-64.

<sup>60</sup> Krinsky and Simoncelli *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties*, 232., original emphasis

<sup>61</sup> E. Haimes (2006) 'Social and Ethical Issues in the Use of Familial Searching in Forensic Investigations: Insights from Family and Kinship Studies', *Journal of Law, Medicine and Ethics*, 34:2, 263-76 269, 73.

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<sup>62</sup> L. Ellis and A. Walsh (1997) 'Gene-Based Evolutionary Theories in Criminology', *Criminology*, 35:2, 229-76; E.g., A. Walsh (2000) 'Behavior Genetics and Anomie/Strain Theory', *Criminology*, 38:4, 1075-107. For an analysis, see N. Rafter (2008) *The Criminal Brain: Understanding Biological Theories of Crime* (New York: New York University Press).

<sup>63</sup> *S. And Marper V. United Kingdom*, ¶75.

<sup>64</sup> In an interesting way, this may be seen as an appropriate consequence of the ways in which the U.K. biometric regime bound together genetic and fingerprint information. While many jurisdictions have provisions for the expungement of DNA records and samples for unconvicted or exonerated individuals, in the U.K. such individuals could only request the expungement of all police records information, including fingerprints and their criminal record. Presumably, this requirement served to make the expungement of DNA profiles and samples less likely. Zadok, Ben-Or and Fisman 'Forensic Utilization of Voluntarily Collected DNA Samples: Law Enforcement Versus Human Rights' 52.

<sup>65</sup> M. Poster (2006) *Information Please: Culture and Politics in the Age of Digital Machines* (Durham: Duke University Press).

<sup>66</sup> *S. And Marper V. United Kingdom*, ¶84.

<sup>67</sup> L. Haber and R. Haber (2008) 'Scientific Validation of Fingerprint Evidence under Daubert', *Law, Probability and Risk*, 7, 87-109.

<sup>68</sup> S. A. Cole (2005) 'More Than Zero: Accounting for Error in Latent Fingerprint Identification', *Journal of Criminal Law and Criminology*, 95, 985-1078.

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