How much justice can technology afford?
The impact of DNA technology on equal criminal justice

Simon A Cole

New technology is changing the administration of criminal justice. Among the most prominent of such changes is the development of forensic DNA technology, which includes a forensic assay with potentially enormous discrimination and sensitivity and the development of large databases based on that assay. This article considers the likely impact of DNA technology on the race, class, and gender inequalities that are acknowledged facets of the American criminal justice system. The article focuses on two major consequences of the development of DNA technology: the increasing, though still modest, reliance on DNA recovered from scenes to investigate crimes; and the rise of large criminal identification databases based on genetic profiles. It is often suggested that DNA is an egalitarian technology that will have a leveling effect on criminal justice administration. Although DNA technology does mitigate inequality in some cases, it may also exacerbate inequality in less obvious ways.

ON THE EARLY MORNING of 14 March 2006, a 27-year-old woman called the police in Durham, North Carolina. She reported that she had been raped by three white men at a house party attended by members of the nationally-ranked Duke University men’s lacrosse team. The woman, an African–American single mother and student at North Carolina Central University, a historically black institution, had been hired to entertain the party as an exotic dancer. She reported that she had left the house in the middle of the engagement, that the students had shouted racial epithets at her, that she had been apologized to, coaxed back into the house, and that she was then forced into the bathroom, sodomized, kicked, beaten, strangled, and raped (Wilson and Macur, 2006).

A team member subsequently circulated a violently misogynist email, forcing the coach to resign and the university to suspend the team’s season. The accusations generated a firestorm of publicity, mostly centered around the way in which the allegations fit the widely held stereotype of mostly white, privileged Duke students’ plantation-style relationship with the relatively poor minority neighborhoods of Durham nearby. Although the case had its own peculiar aspects, it also echoed numerous similar “high-profile crimes” (Chancer, 2005) that have impressed themselves on the American popular consciousness. The accusation by an African–American woman of gang rape against privileged (or powerful) white men, for example, echoed the 1987 Tawana Brawley case. As the Brawley case showed, rape accusations are often particularly difficult cases in which to sort out the factual truth, especially when accuser and accused insist on wholly inconsistent factual accounts.

Comparing the Duke lacrosse case to the Brawley case brings into relief one very significant change that has occurred in the criminal justice system between 1987 and 2006: the injection into the system of what is being heralded as perhaps the most prominent of a host of revolutionary new criminal justice technologies (Murphy, forthcoming) — forensic DNA profiling. Since both cases highlight issues of race, class, and gender inequality, they serve as a convenient prism through which to ask broader questions about the impact of new criminal justice technologies on inequality in the American (and, by extension, the world’s) criminal justice systems.

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Technology is not generally viewed as playing a major role in the generation or mitigation of criminal justice inequalities (Marx, 1995: 226), which are generally viewed as products of grander forces, such as ideology, politics, or culture (Garland 2001; Simon 2006). While not denying the obvious importance of those forces, in this article, I take seriously the notion that technological change and the advance of scientific knowledge might play a relatively unheralded role in shaping criminal justice. In so doing, I seek to extend my exploration of the perhaps overlooked importance of the seemingly mundane technologies that allow police to identify suspects and bureaucrats to generate criminal records (Cole, 2001).

Marx (1995: 238–239) provides a framework through which to analyze the impact of a technological innovation on inequality in the justice system. Two basic positions have been staked out by scholars. The pessimistic view holds that new technologies will always be harnessed in ways to benefit the powerful and wealthy; in this view, DNA technology is simply an enhanced means of social control. The optimistic view holds that some technologies have the power to level the playing field; as we shall see, some recent developments, such as cases in which DNA exonerates convicts (or primary suspects who are at great risk of becoming convicts) lend plausibility to this view. The Duke lacrosse case itself is an example of a way in which new technology renders “the actions of the elites … more visible than they ever have been” (Marx, 1995: 239). Indeed, some new surveillance technologies, such as the monitoring of financial technologies, paradoxically render the lives of the wealthy more visible to the state than those of the poor (van der Ploeg, 1999: 43).

This paper explores how current and expected developments in forensic DNA technology affect each of these basic positions. I take as given the notion that the properties of DNA technology that I discuss here are not necessarily preordained or “required” by the technology. Obviously, DNA technological systems could be conceived and constructed in ways other than those in which they have been hitherto, and the technological systems we have reflect the choices of social actors as well as the nature of the technology itself (Bijker et al, 1987). (To give just one example, it would be possible for DNA technology to be used only for investigative purposes and not as legal evidence. Indeed, the technology’s “inventor” has suggested precisely that, to little avail (Jha, 2004).)

In this paper, however, I explore the impact on inequality of DNA technology, as it has been built today, along with what I view as a reasonably modest extrapolation into the future. In short, I take as given that the criminal DNA technological systems we have today were built by large governments in an environment of heightened anxiety about crime, perhaps even an atmosphere in which they seek to “govern through crime” (Garland, 2001; Simon, 2006). Criminal DNA technological systems might have been built differently by other actors or by the same actors in different circumstances, but, at least today, they have not been.

**Inequality in the US criminal justice system**

The criminal justice system has long been a major site (and even engine) of inequality in the United States. There is no denying the history of inequality in American criminal justice at every stage of the process, from police investigation through criminal sentencing. Today, scholars are generally divided on the issue of criminal justice system discrimination. Some conclude there is little significant discrimination, with the massively important exception of drug crimes (Tonry, 1995; Kennedy, 1997; Hagan and Peterson, 1995). Others are less convinced that the evidence of discrimination is insignificant (Cole, 1999; Brown et al, 2003; Stevenson 2004; Ogletree 2002). Given the enormity of the role that drug crimes play in the US criminal justice system, this is to some extent an academic distinction without a difference.

Moreover, even if the cause of minority overrepresentation in the US criminal justice system were entirely greater rates of offending, rather than discrimination, under the current regime of mass incarceration, its consequence has undeniably been devastation in poor and minority communities (Roberts, 2004). Some scholars would go further and see the prison system as essentially the contemporary equivalent of America’s historic institutions racial control, slavery and Jim Crowism (Wacquant, 2001; Davis, 2003).

The relationship between crime and inequality is clearly cyclical. As Roberts (2004: 1297) starkly puts it, “mass incarceration is iatrogenic.” Inequality generates increased crime in a host of ways, even as crime and its consequences exacerbate not only the crime problem itself but other forms of inequality: economic, social, political (Sampson and Wilson, 1995; Brown et al, 2003; Western, 2006; Roberts, 2004; Simon, 2006; Currie, 1997: 157–159).

Scholars have also shown that the litigation process is inherently unequal (Galanter, 1974; Grossman et al, 1999). The principle of adversarialism, especially in the context of a ruthlessly capitalist

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Providing counsel mitigates inequality, but does not necessary bring about equality: two criminal defendants may both be represented by counsel, but that does not necessarily mean they are represented equally well
All of this results in a system in which a plausible argument may be made that inadequate counsel is a root cause of many of the ills that plague the criminal law. Legal errors at trial, misuse of forensic evidence, and poorly investigated cases may all, to some extent, be traced to inadequate defense counsel. The data that have emanated from post-conviction DNA exonerations (about which I will say more shortly) and individuals released from death row have strongly implicated ineffective counsel as a major cause of injustice, and, simply, error, in our criminal justice system. The result has been a system summed up by Bright’s (1994) memorable phrase “[t]he death sentence not for the worst crime, but for the worst lawyer.”

Although Bright’s epigram may be read as alluding to an almost deliberate perpetuation of inequality, we can also posit a more nuanced reading of his words. Bright may be suggesting that resource inequalities are so overwhelming that they render impossible the law’s avowed goal of drawing distinctions based on ‘merit.’ In other words, resource inequalities hamper the legal system’s ability to make reliable determinations of, say, guilt or innocence, death-worthiness or mercy-worthiness, simply because these determinations are made in a procedural framework in which the ‘noise’ of resource inequalities inevitably drowns out the ‘signal’ of merit.

Stuntz (1997) similarly argues that even those constitutional protections commonly thought to mitigate the inequalities of the criminal law, such as Fourth, Fifth and Sixth Amendment claims, may in fact have the perverse effect of exacerbating inequalities. This is because most discrimination occurs in the discretionary arenas of criminal law, such as policing, prosecution, and sentencing, that the courts regulate far less stringently than trial procedures (Stuntz, 2002). Moreover, procedural regulations allow the rare well-resourced defendant to impose high costs on prosecutors who bring them to trial (Stuntz, 1997: 28).

Slight inequalities in police investigation and in litigation reverberate through the criminal justice system to produce gross inequalities in sentencing and punishment (Brown et al, 2003). Historically, American law has sometimes explicitly embodied racial inequalities, as, for example, in the case of ante-bellum laws mandating harsher penalties for blacks. Today, inequalities are less explicit; sometimes racial inequalities are ‘encoded,’ as, for example, in the harsher punishments mandated for possession or sale of equal quantities of ‘crack’ versus ‘powder’ cocaine.

At the endpoint of this system is a carceral system that embodies gross race and class disparities, even if differential rates of offending are taken into account: two thirds of people in prison are racial and ethnic minorities, one in eight black males in their twenties are in prison or jail, three-quarters of persons in prison for drugs are people of color (Mauer, 1999; The Sentencing Project, 2007). The relationship between punishment and inequality is cyclical; Western (2006), for example, demonstrates the way in which penal inequality exacerbates socio-economic inequality (which, in turn, exacerbates penal inequality, and so on). Similarly, Peterson et al (2006) argue that insufficient attention has been paid to the manner in which racial inequality acts as a structural force to generate inequalities in the criminal justice system.

**DNA, actual innocence, and inequality**

The past decade and a half represents an extraordinary moment in the history of our criminal justice system. For perhaps the only time in history, a technology has emerged with the epistemic authority to credibly challenge the law’s claim to being a truth-producing institution. I am, of course, referring to the rise of forensic DNA profiling and, specifically, to its use for post-conviction testing, in which it functions as a *de facto* validation test of the legal system’s ability to produce ‘true’ outcomes.

The exposure of legal system errors is nothing new. What is new is the rhetorical power of *these* exposed errors to directly attack the legal system’s claims to truth-production. The difference appears to lie in the way in which post-conviction DNA exonerations rest upon the epistemic authority of high science. Non-DNA exposed criminal justice errors lack a certain rhetorical sharpness, in that, even when the justice system essentially admits error by exonerating the defendant, a certain epistemological ‘haze’ remains around the case. ‘The truth’ is not unambiguously known, at least not to all actors’ satisfaction, and determined advocates can still make plausible arguments for guilt, even in exonerations cases (Edmond, 2002).

Significantly, such arguments are typically made not in order to argue for the resumed punishment of the defendant, but rather to prevent critics of the criminal justice system from using that case as evidence of system unreliability (Marquis, 2005). If defenders of the system can invoke uncertainty concerning the factual truth of the case, they can significantly hamper criminal justice system critics’ efforts by forestalling or delaying the achievement of the necessary first step toward reform: general agreement that there is a problem with the reliability of the criminal justice system.

This is precisely what occurred in the debate between Bedau and Radelet (1987) and Markman and Cassell (1988) over supposed death-row exonerations. Bedau and Radelet had difficulty moving forward from their finding of numerous cases of innocence on death row to the next step of reform or abolition of the death penalty system in the USA because Markman and Cassell effectively bogged them down in a debate over whether the death row ‘innocents’ they identified were truly innocent. The nature of most of these cases was that such arguments
could engender an endless regress; ‘the truth’ was simply not knowable from the existing data. It could be argued that an endless regress was precisely what defenders of the status quo wanted.

This was not equally true of most of the post-conviction DNA exonerations. This was not necessarily because DNA testing established the truth about particular crimes in any absolute sense, but rather because DNA carried an epistemic authority that rendered the costs of disputing a particular version of the truth (the DNA’s version) too high for even defenders of the system to assume. It is notable that even the most recent assault on innocence claims (Marquis, 2005) conspicuously avoided attacking those exonerations generated by post-conviction DNA testing (Scheck, 2006: 602).

The epistemic value of DNA thus allowed the principal architects of post-conviction DNA testing, Peter Neufeld and Barry Scheck, to win widespread agreement to the proposition that there is a problem, much more rapidly than Bedau and Radelet were able to. This has enabled them to proceed much more quickly to the projects of critique and reform.

The parade of ‘innocents’ — those whose ‘actual innocence’ is vouched for by the authority of science — out of the nation’s prisons has provided justice where none existed, provided hope where there was none.² We cannot read their stories and not be moved by the sheer unexpectedness of their science-based exoneration (Scheck et al, 2003; Edds 2003; Grisham, 2006; Junkin, 2004; Fritz, 2006). For many of them, DNA profiling was literally unheard of when they were convicted. Forensic DNA profiling appeared, as if from nowhere, while they were in prison, and it freed them.

The stories are about as close to the proverbial scientific miracle cure as can be imagined. The recent passage of statutes authorizing and funding post-conviction DNA testing heightens the perception of DNA as an egalitarian technology since they enable rich and poor alike to avail themselves of the technology (Stuntz, 2006: 799–800). Under these circumstances, it is hardly surprising that the advent of forensic DNA profiling would be read as a story of technoscience redressing inequality.

Does DNA technology mitigate inequality?

At first glance, post-conviction DNA exonerations appear to be a powerful example of the use of technoscience to offset social inequality. The exonerees look like the victims of inequality; consistent with the population of criminal defendants as a whole, they are overwhelmingly, though not exclusively, drawn from the ranks of the poor and minorities. Although many exonerees’ original convictions involved blatant race and class bias (Stevenson, 2004), it surely has not hurt, from a rhetorical point of view, that some of the “faces of wrongful conviction” have been white (Simon 2003). Wrongful conviction is mostly, but not solely, a ‘black thing,’ and it is surely helpful that some of the exonerees look like ‘white America,’ albeit poor white America.

Perhaps most powerfully, the exonerees are generally people who would have rotted away in the nation’s prisons (or, in some cases, been executed by the state) if not for the always fortuitous circumstances of their exoneration for crimes that, it is generally agreed, they did not commit. They are individuals whose lives society was willing to throw away in the service of what, in retrospect, now appears to have been a mistake. In Edds’s (2003) memorable phrase, they are “expendable men.”

In these individuals’ cases, technoscience has provided justice where none existed, provided hope where there was none.² We cannot read their stories and not be moved by the sheer unexpectedness of their science-based exoneration (Scheck et al, 2003; Edds 2003; Grisham, 2006; Junkin, 2004; Fritz, 2006). For many of them, DNA profiling was literally unheard of when they were convicted. Forensic DNA profiling appeared, as if from nowhere, while they were in prison, and it freed them.

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However, although nobody disputes that technoscience benefits a few lucky victims of wrongful conviction, whether forensic DNA profiling should be viewed generally as a benefit to victims of inequality is less clear. Although nobody criticizes the use of forensic DNA profiling to free the innocent, the glimmerings of some reservations about the ‘innocence movement’ may be discerned among those who are concerned about inequality in the criminal justice system.

First, the emphasis on innocence may distract from issues of inequality that affect the guilty as well as the innocent, such as the excessive punitive-ness of the criminal justice system in general (Mauer, 1999; Zimring et al, 2001), the immorality and political undesirability of the death penalty regardless of guilt or innocence (Sarat 2001), the race and class disparities that permeate the criminal justice system (Tonry, 1995), the abuses of the prison–industrial complex and the war on drugs

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(Mauer, 1999; Parenti, 2000), the use of crime control as a political issue (Simon, 2006), and so on.

By emphasizing the grossest possible injustices meted out by our criminal justice system — the severe punishment of disenfranchised individuals for crimes they did not commit — the innocence movement may distract from less gross, but nonetheless, very serious injustices against disenfranchised individuals. Innocence may distract attention from the differential punishment of the guilty based on race and class.

An example of the way in which this has played out is within the death penalty abolitionist movement. Innocence has proven to be the most persuasive argument that abolitionists have been able to devise. Yet the very success of the innocence argument has served to marginalize all other anti-death penalty arguments (cost, morality, suspicion of state power, redemption, and so on). A few abolitionists have counseled caution about the strategic use of the innocence argument, arguing that it distracts from deeper reform and compromises principles still worth defending (Steiker and Steiker, 2005; Davis, 2003: 106).

Some abolitionists now feel that they have no choice but to make the morally reprehensible argument that the death penalty should be abolished because of the possibility of executing the innocent, not because it is morally or politically unacceptable (Sarat, 2003). This puts abolitionists in the uncomfortable position of implicitly accepting the death penalty in the unlikely event it could be made ‘error-free’ — an admittedly curious notion.

It has also been argued that the very valorization of the epistemic value of DNA evidence that I described above, in the long run, will harm victims of inequality more than it will benefit them. Critics have pointed out the way in which post-conviction DNA exonerations play into a master narrative that has never quite lived up to the popular mythology engendered by detective fiction (Thomas, 1999). Too often, forensic evidence was not recoverable, or it was not probative enough (as in the case of ABO blood typing, which might pinpoint the offender within a quarter or more of the population), or databases (as in the case of fingerprint databases) were not sufficiently easy to search to be useful, except when a pool of suspects was identified by other means. For most of the past century, forensic science was an occasionally useful tool for criminal investigation, but it did not drive criminal investigation.

That is still true today, but DNA technology does contain the potential to shift the balance. All the problems just identified are potentially remediable by current or future DNA technology: DNA technology has become increasingly sensitive, and new “low-copy number” technology promises to make DNA recoverable from minute traces of biological material (Buckleton and Gill, 2005). DNA profiles are far more discriminating than old serology evidence or any other forensic evidence, other than fingerprints, and DNA enjoys advantages in transparency over fingerprint evidence (Thompson and Cole, 2006).

Finally, and this is really a development in information technology, rather than forensic science, computerized databases are rendering DNA (and fingerprint, for that matter) databases far more useable than non-computerized databases that had to be searched manually. “DNA intelligence databases,” as they are now called (Walsh and Buckleton, 2005), can be used prospectively to identify suspects from trace evidence, rather than merely retrospectively to determine the criminal histories of already-identified suspects (Cole and Lynch, 2006).

Although DNA technology has enormous potential, I do not wish to convey the impression that it is used more frequently than it actually is. It remains vastly underutilized by law-enforcement agencies (Pratt et al, 2006; Raymond et al, 2004; Cooper, 2006) and inapplicable to the vast majority of cases (Cordner and Scarborough, 2006). Increased sensitivity, in particular, is likely to be a double-edged

**DNA, inequality, and criminal investigation**

Without giving in to technological hyperbole, it is nonetheless not an exaggeration to say that forensic DNA technology has the potential to wreak revolutionary changes in the criminal justice systems of the USA and the world. Historically, forensic science has never quite lived up to the popular mythology engendered by detective fiction (Thomas, 1999). Too often, forensic evidence was not recoverable, or it was not probative enough (as in the case of ABO blood typing, which might pinpoint the offender within a quarter or more of the population), or databases (as in the case of fingerprint databases) were not sufficiently easy to search to be useful, except when a pool of suspects was identified by other means. For most of the past century, forensic science was an occasionally useful tool for criminal investigation, but it did not drive criminal investigation.

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sword. As sensitivity increases, the number of profiles, including ‘innocent’ profiles, recoverable from any particular crime scene may be expected to increase. Defenses involving ‘legitimate access,’ or even planting, may be expected to be used more frequently and to be more plausible than when the DNA evidence derived from, say, semen in a rape case.

Such caveats notwithstanding, we can consider the potential costs or benefits of a large-scale shift of police investigative resources away from traditional investigative techniques, like questioning of witnesses, informants and suspects, towards forensic evidence, especially DNA evidence. In lay terms, we can anticipate the replacement of the old-fashioned detective with white-coated forensic technician. From the point of view of inequality, is this a good thing?

Two general positions on this question seem plausible. The first is that experience has shown good old-fashioned detective work to be so imbued with inequality — with unfairness to minorities and the poor — that victims of inequality would be better off with a shift towards forensic technology. To be sure, forensic technology can be abused and misinterpreted (Giannelli, 2006), but, nonetheless, it could be argued that it carries with it an objectivity that renders it less susceptible to abuse than traditional police investigative methods. In other words, is the culture of police investigation so imbued with discrimination that any influx of science, scientists, or scientific culture is likely to have an ameliorative effect? In this view, the disenfranchised can only benefit from the increased use of science in criminal investigation.

A second view holds that forensic DNA profiling is simply a powerful crime-control technique (Duster, 2004). Putting more powerful tools in the hands of a law-enforcement system that differentially targets minorities, the poor, and inner-city neighborhoods will only exacerbate existing inequalities. DNA profiling may more precisely identify the author of a particular crime, but it wields only slight influence over which crimes are investigated and none over which prosecutions are pursued more vigorously or who is sentenced more harshly (Simoncelli, 2006). Similarly, tactics such as conducting ‘DNA dragnets’ or ‘sweeps,’ suspicionless searches in which residents of a neighborhood are asked to ‘volunteer’ DNA samples — samples that are often then retained by law enforcement — may fall more heavily on minorities, the poor, and others with less confidence in their ability to resist state authority (Cho and Sankar, 2004; Iraola, 2005).

Inequality and DNA databases

A similar debate concerns the scope of DNA databases. Initially, DNA databases targeted murderers and rapists. This made a certain amount of technical (as well as criminological) sense at the time, given the limits of DNA technology. Bodily fluid (semen or blood) was generally necessary to generate a usable DNA profile, and, therefore, DNA was primarily useful for sexual assault cases as well as a small number of homicides. Over the course of the 1990s, tough-on-crime legislators created unfunded mandates to expand the scope of DNA databases to all sorts of lesser crimes (Lazer, 2004: 8). This movement culminated with the adoption by several states of all-felon databases.

Four states, Virginia, Louisiana, Minnesota, and Texas, went a step further and mandated the retention of DNA samples from individuals arrested but not convicted of a crime (Simoncelli, 2006), following the example of the UK (Williams and Johnson, 2005). Most recently, California voters approved a ballot measure that will bring about an arrestee DNA database four years from now, assuming an American Civil Liberties Union legal challenge to the law is unsuccessful (Simoncelli and Steinhardt, 2005). New Mexico and Kansas also recently mandated arrestee databases, and similar legislation is under consideration in at least five additional states and the federal system (Willing, 2006). South Carolina recently introduced a bill that would create the most inclusive DNA database in the nation, with samples taken even from arrestees for petty misdemeanors such as shoplifting (Faussett, 2007).

The trend toward arrestee databases has generated a backlash, with the British inventor of forensic DNA profiling, Sir Alec Jeffreys, declaring such databases “discriminatory” because of the differential arrest risk of minorities and the poor (Jha, 2004).

Concerns about the potentially discriminatory nature of DNA databases have been heightened by the recent trend toward ‘familial’ and ‘low-stringency’ searching of these databases. When a database search does not yield an exact hit, investigators can now perform low-stringency searches for close, but not exact, matches. These close hits can be used to generate leads by investigating the target’s blood relatives. Although the value of such close hits depends heavily on the rarity of the individuals’ genetic attributes within the general population.

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(Paoletti et al., 2006), familial searching could potentially have a significant impact on criminal investigation.

In the UK, this approach has already resolved at least three criminal investigations and provided useful information in around a quarter of the first 20 such searches (Williams and Johnson, 2005). It is beginning to produce results in the USA (Duster, 2006), and has recently been implemented by the FBI (Federal Bureau of Investigation (Michels, 2006). After some initial misgivings on the matter (Bieber and Lazer, 2004), some scholars (Bieber et al., 2006) have now endorsed the use of familial searching on utilitarian grounds.

Familial searching exacerbates the discriminatory effects of database composition. With low-stringency searching available, inclusion of an individual in a database effectively adds that individual’s close blood relatives to the database as well. In the context of an arrestee database, in a society in which young African–American males have a one in three in chance of experiencing some form of state custody (Mauer, 1999; The Sentencing Project, 2007), this could quickly result in effectively incorporating entire neighborhoods and ethnic communities into the database.

Estimating that familial searching would in effect place more than four times as much of the African–American population as the Caucasian population in the national database, Greely et al. (2006) find familial searching unacceptable on discrimination grounds. Their worries are borne out by figures from the UK, where the database covers a much larger portion of the overall population than in the USA. UK Home Office figures indicate that 37% of black men, 13% of Asian men, and 9% of white men had their DNA samples included in the national database. The figures are even more stark for young men. Estimates indicate that approximately 77% of black males aged 15 to 34 are included in the national database, compared to only 22% of comparably aged white males (Randerson, 2006).

What, then, should be the scope of DNA databases? There is little question that arrestee databases represent the least equitable solution to the scope problem. This position is shared by a wide range of libertarian bedfellows from both the left and the right, though not, apparently, by voters (Cole, 2006). However, there is less agreement about whether the proper reaction is towards a more or less inclusive database.

Civil libertarians make the plausible argument that the database should stop at the criminal conviction, possibly at the violent or serious criminal convictions, in accordance with a basic principle that the reduced privacy rights engendered by inclusion in a DNA database are justified only by the proven perpetration of a crime. Kimmelman (2000) has argued that such sampling from unconvicted individuals undermines the bond of trust between citizens and state. Recent events, such as the passage of Proposition 69 in the relatively liberal state of California, however, demonstrate that such arguments, however principled, have little likelihood of prevailing against pragmatic arguments based on the need to prevent crimes (Simoncelli and Steinhardt, 2005).

Others, such as Jeffrey and some legal scholars (Kaye and Smith, 2004; Smith, 2006; Kaye, 2006; Amar, 2002), advocate moving in the opposite direction, towards a universal database. Arrestee databases are highly discriminatory, but even felon databases remain discriminatory. Only a universal database, they argue, will eliminate discrimination (and the suspicion of discrimination) entirely. Perhaps paradoxically, egalitarianism is used to justify the extension of state power and the curtailment of civil liberties (Simoncelli and Steinhardt, 2005; Simoncelli, 2006).

Universal databases have a superficial egalitarian appeal. What could be less discriminatory than a policy that applies to all citizens? As I have noted elsewhere, the proposal also has a certain Rawlsian (Rawls, 1971) appeal in its potential impact on the policy debate over the scope of databases. We might hope to have a more honest debate if the participants feel they are debating the inclusion of their own genetic profiles rather than those of marginalized others (Cole, 2004). Duster (2004), however, counters that the perceived egalitarianism of the universal database is a mirage. As long as arrest and enforcement practices remain discriminatory, he argues, even a universal database will function as a tool of discrimination.

Even more troubling, as Duster notes, efforts to develop ways of predicting phenotypic features from crime-scene DNA traces began almost immediately upon the development of forensic DNA technology, just as its inventor predicted (Jeffreys, 1993; Lowe et al., 2001). In an insightful analysis, Ossorio (2006: 285) points out that the effects of such technology will not be felt equally by the members of different racial and ethnic groups that compose society. Trait genetic testing will inevitably be perceived by law-enforcement authorities as having greater utility when it identifies a crime-scene trace as probably deriving from a member of a minority population than when it probably derives from a member of the majority, for the simple reason that a minority profile more significantly narrows the potential suspect pool. Thus, the argument that white and black alike will be the subject of phenotypic profiling is reminiscent of Anatole France’s famous remark about the illegality of sleeping under the bridges of Paris.

The salience of all these issues stems from the fact that criminal defendants are overwhelmingly drawn from the ranks of those who otherwise tend to be victims of inequality in our society, minorities and the poor. Nonetheless, as the Duke case shows, we should be careful about stereotyping the disenfranchised as suspects. Kennedy (1997) points out that the predominant role of the disenfranchised in the criminal justice system is as victims, not as...
suspects. If, as Kennedy argues, racial inequality in the American criminal justice system is meted out more by indifference and under-enforcement of crimes involving victims of color than by over-enforcement and even railroading of suspects of color, then forensic DNA profiling might thus be viewed as ‘good for the disenfranchised’ simply on the basis of its ability to deliver greater and more precise justice for victims (see also Stuntz, 2006: 806–807, 822).

**DNA and gender inequality**

Thus far, I have conceived of inequality primarily in terms of race and class, but forensic DNA profiling inevitably invokes gender equity issues as well. Indeed, as de Coster and Heimer (2006) have argued, gender, race, and class should be seen as intersectional, and the Duke lacrosse case illustrates their point well. Forensic DNA profiling depends on the presence of biological material at a crime scene, and, therefore, in its initial deployment, it was overwhelmingly used for sexual assault cases (and murders involving sexual assault). Early DNA technology usually required semen or blood to generate an identifiable sample.

This is less true today, as the sensitivity of tests has enabled investigators to gather identifiable traces of DNA from hair and skin cells. Nonetheless, DNA profiling must still be considered a technology that has special salience for investigation of sex crimes. This prompts us to ask whether forensic DNA profiling is ‘good for women,’ much as Crocker (2001) asked whether the death penalty (with its clear over-representation of rape–murder cases) was “good for women.”

On the face of it, DNA profiling would seem to be good for women. Sexual assaults are notoriously difficult to prosecute. Often, such cases depend heavily on the testimony of the victim, creating ‘he said–she said’ cases. Such prosecutions are often extremely hard on victims because defenses focus on attacking the victim’s credibility, motives, or perceived virtue — ‘putting the victim on trial’ (Sanday, 1996). Forensic evidence can place a defendant squarely at a crime scene, ruling out claims that the victim has, say, misidentified the suspect.

On further inspection, however, forensic DNA profiling is less useful that it might at first appear. It provides little help in cases in which identity is not an issue — acquaintance rapes and assaults in which the disputed issue is consent, rather than identity. Moreover, the existence of DNA evidence may be expected to shift a certain portion of defenses from identity to consent for the precise reason that identity can no longer be credibly contested. Thus, DNA evidence may shift some cases towards defenses that are harder on victims.

On a broader level, the resolution of identity disputes with the authority of science may have the effect of diminishing the seriousness with which the justice system takes non-stranger sexual assaults (Corrigan, 2006). The seemingly magical power of DNA to provide virtually irrefutable evidence against stranger rapists with no plausible consent defenses may shift prosecutorial interest, attention, and resources away from more difficult acquaintance rape cases. Such developments might even be expected to help redefine the crime of rape itself, possibly rolling back the feminist gains of the last several decades in broadening the definition of rape, both in terms of the formal legal definition and in terms of the practical exigencies of prosecutorial behavior, to include acquaintance rape (Estrich, 1986).

These possibilities have received relatively little scholarly attention, but there have been some feminist critiques of forensic DNA profiling on these grounds. Holmes (1994) noted that eyewitness testimony, upon which many sexual assault cases are particularly dependent, has emerged as the chief culprit in the cases of wrongful conviction exposed by post-conviction DNA testing. Thus, DNA might serve to undermine the credibility of eyewitness testimony in the criminal justice system, a development that might, on balance, be viewed as damaging to victims of sexual assault.

On a more fundamental level, Holmes suggested that the existence of a technological fix for the social problem of sexual violence might distract from more systemic remedial measures, many of which directly concern inequality, such as equalizing the social, economic, and political status of men and women, reducing poverty, and reducing tension in familial and social situations prone to violence. It should be noted that socially and economically marginalized women are more likely to be victims of sexual violence, especially when the notion of sexual violence is broadened to include acquaintance rape and domestic violence.

Compared to social policies, the identification of the perpetrator through forensic DNA profiling is a downstream, reactive, post hoc intervention. Yet, as Holmes (1994: 238) noted, “if legislative and judiciary branches of the government (and also women) believe that this technology has solved the rape problem, DNA typing might have a negative effect by causing social efforts to be relaxed or abandoned.”
Drawing attention to an almost entirely neglected topic, Lee (undated) explored the privacy implications of the inclusion of victims’ DNA in databases. Lee noted that the Canadian database retained samples taken from victims, and this appears to be true of many other databases as well. Lee suggested that this resulted in a policy that disproportionately represented women from marginalized groups in the database, since they are more vulnerable to sexual victimization. She also suggested that awareness of this policy might deter victims of sexual violence from reporting crimes.

**Conclusion**

Forensic DNA profiling has long raised issues of race, class, and gender equality; the O J Simpson trial in 1995 was the first highly publicized criminal case involving forensic DNA evidence in the USA, and it remains the best known DNA case today. The Simpson case, of course, contained fraught issues of race, class, and gender. Simpson, a successful African–American widely viewed as having effectively ‘crossed the color line,’ was accused of murdering his estranged white wife, and reactions to both the accusation and the verdict famously broke down along racial lines. Indeed, the polarized reaction to the verdict was widely read as symbolizing a persistent and apparently unbridgeable difference in the way blacks and whites viewed the criminal justice (or ‘just us’) system in the USA, differences that some commentators had apparently naively hoped had been erased by 1995 (Ross, 1997).

Other commentators saw gender, not race, as the fundamental issue in the case; some feminists criticized female African–American defenders of Simpson for allegedly allowing racial solidarity to trump gender sensitivity, portraying Simpson–defenders as cynically exploiting race politics to defend violent, misogynist behavior (Crenshaw, 1997). Still others argued persuasively that the dominant variable in the Simpson case was neither race nor gender, but class. Simpson’s treatment by the criminal justice system, no matter how imbued by race and gender, was nonetheless primarily distinguished from the treatment of other criminal defendants by his extraordinary financial resources, embodied by his legal ‘dream team.’

The Duke lacrosse case is, of course, no more representative of the mass of criminal cases processed in the American criminal justice system than was the Simpson case. The accused are hardly typical criminal defendants, especially for violent felonies, though the accuser is perhaps more representative of the typical American crime victim. Nonetheless, the Duke lacrosse case uncannily echoes questions that have been raised recently about the impact of the new technology of forensic DNA profiling on race, class, and gender inequalities in our justice system. The case prompts us to ask whether the increased use of forensic DNA typing and growing DNA databases mitigate or exacerbate these inequalities.

What of the ability of genetic technology to unravel the Duke lacrosse case? Police investigators requested DNA samples from the 46 white players on the team. (The team’s lone African–American player was exempted from the request, itself an interesting development in the light of the arguments in this paper.) All the players voluntarily submitted samples. On 10 April 2006, the North Carolina State Bureau of Criminal Investigation reported back DNA tests from the crime scene. Although details on what exactly was tested were not made public, the DNA tests apparently failed to implicate any of the Duke players.

Although the defendants sought to interpret this as evidence of innocence, prosecutors and some pundits illustrated the limits of DNA technology by pointing out that the DNA exclusion did not necessarily amount to exoneration, and three players were indicted for rape (Jarvie, 2006). The failure of the DNA evidence to implicate the defendants was one reason, but not the only one, for a gradual shift in public opinion and media coverage towards the defendant’s point of view. Eventually, most of the media came to portray the case as a rush to judgment propagated by the combination of a politically ambitious prosecutor and misguided race, class, and gender-based political correctness (Boyer, 2006), although some have still argued that there was enough evidence of a crime at the time to make the indictments reasonable (Wilson and Glater, 2006).

As of this writing, the case has all but crumbled. District Attorney Michael Nifong has dropped the rape charges, but retained kidnapping charges (which do not require evidence of penetration). Nifong has removed himself from the case, and his conduct is itself under investigation by the state attorney general, amid accusations that, among other things, the prosecution team conspired with the private laboratory that performed the DNA testing to conceal exculpatory results from the defense (Zucchino, 2007). The latter accusation is particularly salient for our purposes because it raises the question of whether this sort of thing happens all the time but is only discovered by well-resourced defendants (Thompson, 2006).

Even so, the actual truth of the case is still not known and probably will never be. How then should we read the Duke lacrosse case? Is it a symbol of how far race relations in American have come? The case represents a color reversal of the classic historical racial lynching case from the American South: an allegedly false cross-racial rape accusation by a woman, leading to a rush to judgment against a man of another race. Yet, in the Duke lacrosse case, the colors are inverted. The rape accusation was leveled against a white male defendant. Americans by and large — and the state — took her side, at least initially.
Then the case unraveled. Does this mean that all the apparent race, gender, and class progressiveness of the case was a mirage? Does the case demonstrate nothing more than that race, gender, class, and privilege always win out in the end, no matter what the facts?

Also, what role does DNA technology play in the heady cross-cutting dimensions of race, class, and gender? In the Duke lacrosse case, DNA might have provided the crucial evidence necessary for a rape victim to convince others to believe her story. It did not, perhaps because the story was false, perhaps merely because of the limits of the technology. Or, it might provide the crucial evidence necessary to exonerate innocent, well-resourced but unsympathetic, defendants from a false rape accusation. In the Duke lacrosse case, DNA may be functioning in precisely this way. Or, perhaps forensic evidence is serving as a distraction, preventing the public and legal actors from seeing clearly the damning circumstantial evidence: the notorious ‘C.S.I. effect’ (Podlas, 2006; Cole and Dioso, 2005; Tyler, 2006).

The complexities of the Duke lacrosse case demonstrate that the superficial image of DNA profiling as an inherently equalizing technology does not withstand deeper analysis. Even seemingly egalitarian proposals, such as a universal DNA database, will not necessarily have equalizing effects. Whether DNA profiling technology as a whole mitigates or exacerbates inequality does not yield a single, simple answer. Rather, the answer depends on the “equality of what?” (Sen, 1992) and the equality of whom. Inequality has complex and intersecting dimensions that include, but are not limited to, race, class, and gender. The Duke lacrosse case illustrates the way in which these dimensions can intersect one another in sometimes baffling ways and even ‘truth-telling’ technologies can bring us closer to, but not to, the truth.

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Notes

1. It is interesting to note that Galanter (1999) has pointed out that the inspiration for his famous work on the “Haves” and “Have-nots” was his study of law in India and its interaction with the caste system.
2. It is important to keep in mind that this has proven a cruel hope in more cases than those in which it has been borne out. The Innocence Project turns down most cases for the simple reason that the original evidence was not preserved. For those among this group who are indeed innocent (and if we extrapolate from the Innocence Project’s own figures, this is probably a good number of them), the raising and subsequent dashing of hope must be truly agonizing. It would be analogous to witnessing the completely unexpected discovery of a miracle cure for one’s affliction, but then being forever denied access to it.
3. Of particular interest in this regard is a radio-broadcasted conversation I had with Mark Fuhrman, the former Los Angeles Police Department detective notorious for his investigation of the murder of Nicole Brown Simpson. Fuhrman has been sympathetic to my criticisms of forensic evidence (Cole, 2003), but for different reasons. Fuhrman (2003) decries an over-reliance on science, which, he contends, should not replace what he calls “good old fashioned detective work.” Of course, for many, Fuhrman, who was famously tarred as racist by O J Simpson’s defense team, embodies for the public precisely what is wrong with “good old-fashioned detective work.” In retirement, Fuhrman has reinvestigated many notorious cases, including most interestingly an Oklahoma case in which he became convinced that a wrongful conviction occurred. In his account of this case, he describes his conversion to becoming opposed to the death penalty — for the very reason discussed: the potential for the execution of the innocent — and allies himself with the innocence movement in his exorcism of the notorious and powerful Oklahoma County prosecutor, Bob Macy.
4. An interesting way of testing this hypothesis would be to ascertain the commitment to phenotypic typing in a country, like the former regime in South Africa, where the ruling class is constituted by a racial minority.
5. Roberts (2004: 1280) argues that this implicit calculus does not take into account the impact of unjust or excessive punishment of individuals on their communities.

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