

Topics for Our Times: The Proliferation and Risks of Government DNA Databases

Captivated by what appear to be the unassailable advantages afforded by DNA technology to identify individuals, state and federal governments are establishing DNA databases at a rapid clip. Over 30 states and the federal government now collect DNA samples from criminals, and the military is collecting samples from enlistees at the rate of 200 000 per year.^{1,2} The public generally supports these efforts because DNA helps in making difficult identifications, such as those required in rape cases or in the aftermath of bombings. But, at what cost do DNA databases confer an advantage over traditional identification systems?

DNA-typing can succeed in select cases where traditional identifiers fail, but it is more expensive and, because of the care its handling requires, less reliable.³ These disadvantages challenge the wisdom of expanding DNA databases as a technological quick-fix response to crime. Moreover, DNA databases pose a serious risk to the public health from their threats to genetic privacy. DNA used to identify a criminal also contains details about a person's genetic make-up. Scientific analysis of this "future diary" can reveal susceptibility to diseases as diverse as cancer and alcoholism.⁴ Recent research has identified over 4,000 genetic diseases and conditions, and much current work focuses on behavioral or psychological conditions, such as obesity and depression. Genetic analysis can also disclose kinship, paternity and, some would argue, race.⁵ Genetic information should be private information.

Currently, few, if any, samples stored in government DNA databases are analyzed for purposes other than personal identification. But the potential for unlocking these "future diaries" exists.⁴ Their contents could reveal information useful to their owners, such as indications of medical conditions that preventive measures could ameliorate. But history suggests caution here. Genetic information has often been used to stigmatize or discriminate against people.⁶⁻⁸

Genetic discrimination in the United States dates back to the turn-of-the-century eugenics movement, which sought to create a stronger nation by sterilizing people considered mentally inferior or prone to criminality. The major "flaw" of many people targeted by these popular

campaigns was simply that they were poor.^{7,8}

Officials continue to misinterpret and misuse genetic information. Recently, both private insurers and the military have confused a person's being a carrier of an altered gene with actually suffering from the associated disease, and they have seriously and unnecessarily penalized people.^{6,7,9} Insurers have categorized people found to have genetic alterations as suffering from "pre-existing" conditions and have cut off their benefits.¹⁰

Eugenic sterilization laws may be off the books for now, but continued misunderstanding of genetic information indicates that vigilance should be exercised in allowing the government to collect DNA. This is especially true as genetic research focuses on socially controversial topics such as homosexuality or criminality.

If the government were to confine its collections to violent criminals and active duty soldiers, concern would decrease. Many samples in government DNA databases, however, may not belong to soldiers or felons. Some states have expanded their forensic databases to include misdemeanors, such as sexual misconduct or sodomy.^{11,12} Others have proposed even more extreme applications such as requiring DNA donation from those found guilty of issuing "abortion [sic] articles," or using "profane, obscene, or impure language or slanderous statements [in] a sporting event."¹³ While the latter have not been enacted, these moves to include misdemeanors suggest a tendency to see DNA databases as sources for social control.

Some states plan to keep criminal samples on file permanently. Calculations based on the number of annual felony convictions alone in the United States suggest that criminal databases will quickly reach the millions.¹³ The military plans to keep samples for 50 years,¹⁴ and its collection soon will top 4 million. Most samples in the military collection belong to civilians discharged from the military, while a substantial portion of the criminal samples may belong to people guilty of minor misdemeanors or of felonies that if recommitted would not leave DNA behind. Because genetic information pertains not only to the individual whose DNA is sampled, but to everyone who shares in that person's blood line, poten-

tial threats to genetic privacy posed by these collections extend well beyond the millions of people whose samples are on file.

State and federal governments hasten to defend DNA collecting by saying that they will guard the confidentiality of their samples.¹⁵ Some agencies, in particular the military, point out that they store samples unanalyzed and thus do not have routine access to the genetic information that analysis could reveal. While storing samples unanalyzed enhances privacy, this is not the intent of most collections, nor does it constitute the degree of protection that the military implies. The military retains the right to analyze the samples when it wishes. Furthermore the regulations protecting against release of samples, analyzed or not, are inadequate. Under certain restrictions, such as for crimes carrying sentences of more than one year, the military allows its samples to be used in court proceedings, and it allows samples to be released to next of kin after death.¹⁴ While the latter might not seem egregious, there are any number of legitimate reasons (particularly paternity) that people might not want their DNA analyzed after death by family members.

Alabama allows forensic DNA records to be disclosed in any unspecified "judicial proceeding," leaving the door open to a wide variety of questionable requests. Alabama also allows the DNA collected for criminal identification to be analyzed for medical research, albeit with identifiers removed.¹¹

Some critics have suggested that the way to respond to confidentiality concerns is through improved statutory protections restricting access to genetic material.^{2,15} Historical precedent, however, challenges the wisdom of relying too heavily on statutes or regulations limiting access to these collections.

One hundred years ago, fingerprinting was hailed as the innovative identification technology. The military, then as now, led in its adoption. In 1906 the Army set up its own fingerprint system to detect deserters who tried to reenlist and to determine whether new recruits had criminal backgrounds.¹⁶ The Navy and Marine Corps soon followed suit. As J. Edgar Hoover, FBI director, began to build that agency's fingerprint system in the 1930s, he began to pester the armed

forces to use his Identification Division to run checks on military fingerprints, which he promised then to return. Later, he wanted to keep military prints permanently at the FBI.¹⁷⁻²⁰ The Army agreed to this program in the mid-1930s. The Navy and the Marine Corps staunchly resisted because they did not want to stigmatize their personnel by inclusion in the FBI's database. Eventually national security fears during World War II made continued opposition too costly, and all branches capitulated.²¹

The lesson here is an easy one. Guarantees made under one set of political conditions are not necessarily honored under other political conditions. Fingerprints and accompanying information solicited in the act of enlisting during the 1930s became FBI-owned dossiers in the 1940s. DNA collected by the military to help identify war dead or collected by the criminal justice system to identify recidivists could end up in the possession of other government agencies with different agendas. Already, today's military is entertaining the notion of conducting medical research with the samples it collects, despite earlier, vocal promises to confine its repository to the task of identifying bodily remains.²²

Today's compelling and rapidly evolving interest in genetics assures that DNA databases will continue to draw support, and it is likely that there will be proposals to use government DNA databases for purposes other than those for which they were expressly created. The arguments used will seem compelling, as did, for example, the argument to protect national security during World War II.

While others have concentrated on how to regulate access to these databases,² I would like to draw attention to collection policies. If DNA is not collected in the first place, it will not be available for improper use. DNA-typing can meet only a handful of identification challenges that traditional means cannot. We should reserve DNA for those situations that clearly demand it, limit DNA collecting to fit those purposes, and thus limit the

state's potential access to its citizens' genetic information.

Criminal collections ought to be limited to wrongdoers who are actually likely to leave DNA behind in the commission of a future crime. Collection for white collar felons and for perpetrators of victimless crimes can be eliminated and funds instead concentrated on establishing adequate storage and analysis facilities for DNA from violent criminals. The military's repository could become voluntary and still serve its stated intention of identifying war dead for those who desire such a service. Failing this, the military must assure not only that soldiers are allowed to request destruction of their samples, but also that soldiers are informed that the samples exist and of the implications of leaving genetic information on deposit with the government.²³

Few lessons from history and little in current politics reassure us that DNA held by the government is safe from being used for purposes that its citizens—if granted a choice—would prefer to avoid. DNA collections that now seem little more than a clever hedge against the randomness of violent crime and wartime death, could become, without proper controls, a source for wide-ranging medical and social discrimination. □

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