From DNA of Family, a Tool to Make Arrests
Privacy Advocates Say the Emerging Practice Turns Relatives Into Genetic Informants

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He was a church-going father of two, and for more than 30 years Dennis Rader eluded police in the Wichita area, killing 10 people and signing taunting letters with a self-styled monogram: BTK, for Bind Torture Kill. In the end, it was a DNA sample that tied BTK to his crimes. Not his own DNA. But his daughter's.

Investigators obtained a court order without the daughter's knowledge for a Pap smear specimen she had given five years earlier at a university medical clinic in Kansas. A DNA profile of the specimen almost perfectly matched the DNA evidence taken from several BTK crime scenes, leading detectives to conclude she was the child of the killer. That allowed police to secure an arrest warrant in February 2005 and end BTK's murderous career.

The BTK case was an early use of an emerging tool in law enforcement: analyzing the DNA of a suspect's relatives. In the BTK example, police had a suspect and were looking to tie him to the crime. But now, states are moving to conduct familial searches of criminal databases, looking for close-to-perfect matches with DNA from crime scenes. A partial match with a convicted criminal could implicate a brother or daughter or father of the convict. Such searches, advocates say, constitute a powerful law enforcement tool that, experts say, could increase by 40 percent the number of suspects identified through DNA.

As things stand in some states, lab analysts who discover a potential suspect in this way may not be permitted to share that information with investigators. Such a policy, said William Fitzpatrick, a New York state district attorney, "is insanity. It's disgraceful. If I've got something of scientific value that I can't share because of imaginary privacy concerns, it's crazy. That's how we solve crimes."

But the technique is arousing fierce objections from privacy advocates, who maintain that it turns family members into genetic informants without their knowledge or consent. They complain that it takes material collected for one purpose and uses it for another. And with the nation's DNA database disproportionately comprised of minority offenders, they say, it amounts to placing a class of Americans under greater scrutiny merely because their relatives have committed crimes.

"If practiced routinely, we would be subjecting hundreds of thousands of innocent people who happen to be relatives of individuals in the FBI database to lifelong genetic surveillance," said Tania Simoncelli, science adviser to the American Civil Liberties Union.

Nonetheless, California, which maintains the world's third-largest criminal DNA database with more than 1
million samples, will soon become the first state to adopt a protocol to allow for familial searches. Last week, Colorado performed a test run of familial search software on its criminal database. In Massachusetts, officials say they plan to develop a policy to allow familial searches.

The technique is being adopted as states and the federal government expand their databanks to include profiles of people who have been arrested but not convicted of certain crimes.

Only Maryland has expressly banned familial searching in a law adopted this month to expand its DNA database to include anyone charged with a violent crime. The FBI, which maintains the world's largest forensic DNA database with almost 6 million profiles, said it has so far refrained from adopting the technique because of concerns about constitutional challenges.

"The FBI would be more comfortable with congressional authorization to conduct familial searches," said Thomas Callaghan, head of the FBI's national DNA database.

However, he said, the bureau does occasionally find partial matches. When it does, under an interim policy, it allows states to follow up to see whether a relative is involved.

An advisory group to the FBI has proposed a final policy that goes further, recommending that partial matches be subjected to additional DNA testing and statistical analysis that would help investigators home in on relatives of people in the federal database.

"How is that not familial searching?" said Simoncelli of the ACLU. "You're still using the database to try to get to family members."

The key is intent, Callaghan said. The bureau is "not deliberately trolling the database looking for relatives," he said.

Heightening privacy concerns are the growing number of local jurisdictions that maintain DNA databases not restricted to criminals. Some include the DNA of victims, suspects or even lab workers. Such collections, which critics call "rogue databases," are barred from inclusion in state and national databases, but rules about their use by law enforcement agencies are unclear.

The Supreme Court has repeatedly held that authorities may not conduct searches for general law enforcement purposes without suspicion about individuals. Although convicted criminals have a diminished expectation of privacy, searching a database for unknown relatives might violate that principle, said Jeffrey Rosen, a George Washington University law professor.

"The idea of holding people responsible for who they are rather than what they've done could challenge deep American principles of privacy and equality," he said. "Although the legal issues aren't clear, the moral ones are vexing."

Finding BTK

BTK first struck in 1974, strangling a man, his wife and their two children, 11 and 9, in their home. He killed six more times over the next 17 years, tying up his prey with electrical tape, nylon stockings and rope.

After 14 years of silence, BTK reemerged in 2004, sending messages to authorities via the media hinting that he was about to strike again. Computer forensics revealed that a document on a CD sent to a local...
television station had been saved by a person named "Dennis" at a local church.

Investigators zeroed in on Dennis Rader, the congregation president, but before they moved, they wanted evidence tying him to the crimes.

They learned that Rader had a daughter who had attended Kansas State University, and they reasoned that at some point she must have used the medical clinic, said Wichita police Lt. Ken Landwehr. "It was suggested that she probably had a Pap smear," he said. Federal law requires that labs keep Pap smears for five years, principally in case of legal challenges over diagnoses.

The prosecutors obtained a subpoena and a court order for the daughter's specimen to compare with BTK's DNA. (An exemption in the Family Educational Rights and Privacy Act allows law enforcement to obtain a student's health data with a court order.)

"It was obviously good detective work," said Nola Tedesco Foulston, the prosecutor in the case.

At the same time, said George Washington University law professor Sonia Suter, "it is so troubling to think that somebody would have a sample taken for her medical welfare that is then used to implicate her father."

To Phyllis Hedge, daughter-in-law of a BTK victim, it is justified by the need to stop violent criminals. Her mother-in-law, Marine Hedge, was stalked and strangled by BTK in 1985. Twenty years later, Hedge said, she and her husband, Tommy, were stunned and elated to see on television a picture of her mother-in-law with news of BTK's arrest. In 2005, Rader was sentenced to 10 consecutive life terms.

"Whatever it takes to catch these people who do these atrocities, who have no respect for human life, whatever it takes to get them, is totally appropriate. . . . I'm grateful to [Kerri Rader]," she said.

Landwehr said he spoke with Kerri after her father had been arrested and that "she had no problem" with the use of her Pap smear. "What we had to do, we had to do," he said. "She understands that." Through her husband, Kerri Rader declined to comment.

Matching the Markers

To match DNA from tissue samples -- skin left under fingernails, semen on a car seat, saliva traces on a water glass -- forensic scientists examine the information contained at 13 locations on the human genome. Two genetic markers -- one from each parent -- are scrutinized at each of those locations, creating a profile of an individual that can be compared against a database of criminals. A match on all 26 markers -- called alleles -- is a perfect hit, indicating the samples come from the same person. A match on at least 16 alleles, especially if they involve a rare one, could indicate that a close relative left a sample, experts said.

"It's an extremely powerful tool," said Mitch Morrissey, Denver District Attorney. Not using it would be a wasted opportunity, he said. "It's like you build a Porsche and you drive it like a Pinto."

But one area that has civil libertarians greatly concerned is the potential to apply the technique to local databases unregulated by the stringent rules that apply to the national database and its state counterparts. Last September, Denver conducted the first test in the United States of familial searching software on a DNA database, using the county's databank of 1,700 profiles. Along with profiles from suspects, it also included lab employees and people who allowed their DNA to be taken to eliminate them as suspects. The
people who were not suspects signed waivers, Morrissey said, allowing their DNA profiles to be used for research.

The test yielded three partial matches that, with additional testing and analysis, reflected a 90 percent likelihood relatives were involved -- one between a convicted felon and his brother, a rapist, and another between a prison inmate and his son, a burglar.

The third match linked a rape case suspect with the DNA profile of a lab employee. The suspect, it turned out, was the employee's brother. When investigators followed up, they found the case had been closed. "So there was no reason" to inform the employee that his brother had been identified through his DNA, Morrissey said.

"That's precisely the concern," said Stephen Mercer, a Rockville attorney specializing in DNA issues. "The trolling of rogue databases for information about family members is doubly invasive. It makes the persons in the databases -- many who are innocent -- genetic informants about their family members. And it extends that suspicion to their family members."

Morrissey said: "There is no inclusion of DNA that we don't have legally."

Other states and localities maintain "offline" DNA databanks of samples taken from victims or suspects never charged with a crime. Such databases, which also exist in New York, are a violation of the constitutional ban on unreasonable search and seizure, said Barry Scheck, a commissioner on New York state's Forensic Science Review Board. "If I get a sample from you and I don't tell you I want to put it in the database, that violates the scope of the Fourth Amendment," he said.

Prince George's County, for example, maintains a database with DNA profiles of both victims and suspects. Such local databases "have literally no oversight and regulation and yet are pushing the boundaries farther than anyone could imagine," said Patrick Kent, chief of the Maryland public defender's forensic division. "I do not think that victims of crime would be pleased to know that in addition to having been a victim, their DNA profile has been surreptitiously placed into a DNA database."

Prince George's County police spokeswoman Sharon Taylor said: "We manage the collection of evidence consistent with the law. It would be inappropriate for us to make any comment beyond that."

The British Model

Britain, with a database of 4.25 million profiles, has been doing familial searching for five years and has solved at least eight cases with it, said Tony Lake, chief constable of Lincolnshire and recent chairman of the DNA Strategy Board.

He cited as an example the "shoe rapist," who attacked at least six women, each time stealing their high heels. Twenty years later, his sister was arrested for driving under the influence and her DNA run against cold cases. That yielded a close match and led police to her brother. When he was arrested, his DNA was a perfect match and police found more than 100 stiletto heels hidden under a trap door.

In Britain, too, concerns have been raised about the use of familial searching at a time when the database is rapidly expanding to include people arrested for minor offenses and children as young as 10. In one case, a 15-year-old was arrested for refusing to get off a public bus and obstructing a police officer. His DNA was
taken. Although the charges were thrown out, the police have refused to remove his DNA profile from the database.

**A Rape Victim**

In the Lake Charles area of Louisiana, authorities in a nine-county area have uploaded 1,500 DNA profiles taken from victims and suspects. The profiles are kept indefinitely, said George Schiro, DNA technical leader of the Acadiana Crime Lab in New Iberia. "There's nothing in state law that precludes us from doing it."

The lab has never run a familial search against its database, he said. But in 2005, in an effort to solve a string of rapes that had taken place in the little town of Ville Platte between 1987 and 2001, an investigator asked Schiro to review another rape case from 1999. Perhaps the suspect in that attack, the victim's ex-boyfriend, was the serial rapist, said Rudy Guillory, an investigator in the prosecutor's office, recalling what he told Schiro.

So Schiro pulled the files and compared the strings of numbers. What he saw ruled out the ex-boyfriend but implicated a relative of the victim. "Y'all need to check her family," Guillory recalled he said.

"It was really a stroke of luck," Schiro said.

The victim's brother was found in Shreveport, La., and gave a DNA sample. Normand Wilson, 53, is now serving a 35-year sentence.

Richard White, Wilson's attorney, said he feared such cases might make rape victims think twice before reporting an attack. "Would I like to have my rape solved, or do I run the risk of having my DNA profile searched in a way that might point the finger at a family member?" he said.

Wilson's sister echoed that thought. "I feel betrayed," she said. "They did everything behind my back."

**Race and Justice**

Familial searching of offender databases would be of no use "if close relatives didn't commit crimes," said Frederick Bieber, a medical geneticist at Brigham and Women's Hospital in Boston.

"For reasons we don't understand, there is often a familial clustering in crime," he said. "This could relate to organized crime families, to street gangs, or it could be dysfunctional family units." He pointed to a 1999 Department of Justice study that found 46 percent of prison inmates had at least one close relative who had been incarcerated.

Behind that statistic is another troubling set of numbers, highlighting an issue at the heart of the debate over familial searching: racial justice. The national database, which is made up mostly of state contributions, has a disproportionate number of DNA profiles from non-whites.

Stanford University law professor Henry T. Greely estimates that at least 40 percent of the FBI database is African American, though they make up only 13 percent of the U.S. population. That is because in an average year, more than 40 percent of people convicted of felonies in the United States are African American, he said.
If the national database were used for familial searching, he said, and assuming that on average each person whose profile in the database has five first-degree relatives, authorities would be "putting under surveillance" roughly a third of the African American population, compared with about 7.5 percent of the European American population, he said.

"I don't think anybody's going to be falsely convicted," he said. "It's the time, hassle and indignity of being interviewed by the police. How much is that worth? How much does that cost a person? I don't know, but it's not zero."

*Staff researcher Magda Jean-Louis contributed to this report.*