

Ethics of Human Genome: DNA Database Society

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In our society today DNA is being extracted from people and placed in a national database in hopes that the DNA sample will match a cold case. Who will own your genome and DNA? DNA contains an individual's unique genetic code, which, tells a lot about who you are. Today, in California these cold cases are being run against a database with current inmates DNA. The second database holds the DNA evidence found at crime scenes or rape kits. The police officers will be the primary government agency allowed to take anyone's DNA to put in the inmate database. Our society is currently allowing it. Our rights and privacy are at risk because of a database called Cold Case.

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The Human Genome project at the University of California focuses their research on find a way to help relieve and treat suffering and to cure genetic diseases. The lab also strives for the prevention of diseases like Huntington's and Parkinson's disease. Yet the information gathered by the lab at UCSC is accessible to all those with an Internet connection.

In our society today DNA is being extracted from people and placed in a national database in hopes that the DNA sample will match a cold case. Yet not just criminals are being forced to give DNA samples but also citizens that have not yet been convicted of any crime. Why is this being allowed, who is controlling the information collected from the DNA samples? As time goes by our country is slowly becoming more of a Database Society. The database that risks the rights and privacy of our society is known as the Cold Hits database.

Genetic Profiling or Population Control?

How will this information available to all be used? Who will own your genome and DNA? In the United States and in other counties the beginnings of Genetic profiling are present. November 17, 1992, began the use of DNA as vital evidence used to catch criminals across all states. An example of the usage of DNA is evident in the case of a young secretary who was raped and strangled in Minneapolis. The only evidence found at the scene of the crime was genetic. This evidence was run against a database, which holds DNA profiles. The database found a match. The DNA belonged to Martin Perez. Perez was already in prison and was convicted of rape. He is now serving a life sentence in a California State Prison.¹ In 1989, the United States started collecting

DNA from convicted criminals and placed it in a database. In 1992, it became a national database where all the states could run their DNA sample against 1.3 million genetic profiles.²

California Genetic Profiling, Cold Hits

In the past, many cases were left unsolved as a result of not having the appropriate technology to use with DNA. Today, in California these cold cases are being run against a database with current inmate DNA. If there is a match of DNA this is known as a "Cold Hit", a form of criminal investigation. The DNA in those case files was run against all the current prison inmates housed in the United States prisons.

DNA extraction can be done with a cotton swab in the mouth or by using a piece of hair. DNA, a cellular acid contained in blood, semen or other bodily fluids and tissues, is an ideal tool for crime solving. DNA contains an individual's unique genetic code. A DNA sample taken from blood, semen or even traces of saliva in a bite can be used to match the person believed to have committed a crime.³ In many cases the evidence linking a suspect with the crime scene is a cold hit.

In California, there are 222,508 Cold Hits in the state profiles and in the state offender database. There are two databases, one holds the DNA from convicted criminals and in many states from those who have not yet been convicted is known as the Offender database. The Offender database can be accessed, by any government police agency across the nation. The second database holds the DNA evidence found at crime scenes or rape kits. Then the Offender database is ran against the DNA evidence database. Cases that are inventoried in the national evidence database number 10,223, these are cases that have

¹ Ivery, Steve. Courttv.com

² Ibid.

³ Ibid.

evidence kits from unsolved crimes hoping that they have a DNA match against the Offender database. Cases that are screened 9,321; public laboratories screen the evidence in order to determine if there is sufficient DNA material to profile in the database since not all evidence is profiled. Cases Profiled 5201, private labs and public labs receive the samples and check to see if the sample is worth uploading. Cases Uploaded 3740, the DNA sample is then uploaded to CODIS, which is the local, state, and national offender database, which has a \$50 million, grant. If there is no immediate hit it will be ran once again if there is new information added to the CODIS database.

Cold Hits 328, when an unsolved crime sample matches an offenders DNA in the databank at the local, state or national level it becomes a cold hit. Case-to-Case Matches 276, when a sample matches another case in the CODIS database, but does not necessarily have the identity of a suspect. Therefore, linking all the cases together may help solve the cases all at once. For the Cold Hit Tracking System Users there are currently 255 users that can access the database through the Internet. User access is controlled depending on the needs and authority and is used to track the evidence the person has submitted.⁴ There is no law protecting or overseeing those who have access to the DNA information. There are no protocols that protect the information from being leaked. It is not clear what the information can be used for or what it cannot be used for. There is no proof that the information cannot be tainted or manipulated before or once it is in the database. There is a security feature that allows an administrator to monitor access to its users.

Currently there are over 200,000 unsolved sexual assault cases in which biological evidence was collected yet never analyzed.⁵

About 160 prisoners have refused multiple times to provide samples in California. State law bars the use of force to obtain DNA. As a result, prison officials have begun to seek court orders to attain DNA samples. California's 606 death-row inmates are excluded from the DNA database, at least temporarily; pending appellate court resolution of a challenge filed on their behalf.⁶ Current federal law only allows DNA from convicted adults to be placed in the database; however, the legislature is working on including convicted juveniles.

What laws protect us?

If a person has a genetic disease, they cannot be refused employment or training for a position.⁷

⁴ *Cold Hits Statistics for Database as of 5/19/04.*
<https://coldhit.doj.ca.gov/dna/stats.asp>

⁵ *Cold Hits Background.*
<https://coldhit.doj.ca.gov/dna/about.htm>

⁶ *Sanders, Jim. DNA Efforts Pay off in Crime Fight*

⁷ <http://www.genome.gov/11510220s>

Currently there is one law prohibiting genetic discrimination, California S654 (in 1998) as well as the Senates S.1053 (in October 14, 2003). There is no protection against police officers taking DNA at traffic stops. There is also no clear law protecting Californians from DNA extraction at any point. Who will have the right to take DNA and when will it be legal to take it?

A legitimate fear is that there it will be a rookie police officer or an untrained police officer will be the ones collecting DNA. Due to the fact that this "evidence" or

Will there be a law that will protect me from my DNA being used against me if it is found on the sidewalk?

"sample" could be of tremendous importance in a criminal investigations it is very important for the sample of DNA to be taken and treated with great care. The possibility for DNA to be tainted is huge. Also the question of planted DNA is going to be a large question mark. Since DNA can be collected without a person we actually leave our DNA in more places than one really realizes.

What are the odds that I cut my finger and bleed on the sidewalk and that DNA will be available to be planted somewhere to frame me? Will there be a law that will protect me from my DNA being used against me if it is found on the sidewalk after I have refused to give a sample of it? If an investigating party cannot get a court order to force me to give my DNA can they follow me around and collect a cup or bottle with my saliva after I have drank and discarded it in the garbage? In that case the fight between public and private property will be fought out in court. I feel that the biggest argument will be if the garbage is that which comes directly from my private residence or if it is at a public area.

Who owns your DNA?

Is it ethical for the prison system to invade someone's privacy or does a prisoner give up their rights to their DNA once they are convicted? Currently the only people who have to give their DNA are those convicted of sexual offenses. But, will it stop there? What protects us from it eventually spilling over to anytime you are pulled over you must give your DNA?

In New York City, those who are caught shoplifting will also become a part of the database regardless of whether or not they were convicted. In many states when a person is arrested and a DNA sample is given in attempt to prove their innocence, this DNA will be kept in the database forever. Even if the agency that collected the DNA says that they do discard cleared DNA there exists no law that says that they can't keep it in the database.

What about genetic profiling? Police officers will continue the inequality that is very noticeable of traffic stops based on racial reasons. The police officers will be allowed to take anyone's DNA. Most of the DNA that will come from traffic stops will be that of people of color. How can we control police officers from arresting anyone just to take a DNA sample without

any real justification?⁸ There is an extreme solution supported by Professor James Watson, one of the founders of DNA. His suggestion is that all people give a sample of DNA at birth so there isn't this selective process of some providing DNA and others not, thus creating a database society. There is a lot of information in DNA that the government would have access to and control over. Do we really want the government to have that much information about us? Where would this super database be kept? Will there be proper firewalls? One must make sure that this database is secure, if not, this can cause more problems with access to our genome. The future can bring pharmaceutical companies to target certain people based on genetic diseases that they may have. Insurance companies would be able to deny people the right to life insurance if they have a genetic marker for cancer or any other diseases. Will there be a law that will protect those with a genetic marker? Let us believe that there will be a law that will protect us from genetic discrimination. Yet, what will happen when information is leaked from the database, which causes an insurance agency to deny me health insurance?

For some time now, people who are arrested have been forced to give a fingerprint and to take a mug shot. This fingerprint database never goes away. One must also see that the information you can get from a fingerprint will never compare to the information that can be found in our genome. Later, this information could also be used by the pharmaceutical companies targeting people who have the possibility of developing a genetic disease.

The type of DNA sample that is taken from a person is known as "junk DNA".⁹ Although, this section of DNA may not medical related is still unique to the individual.

A big question one must ask ourselves is if "as a society do we want the government to have our genome and have the power to know everything that makes a person up?"

What if police officers randomly broke into our houses? They might find a lot of evidence to crimes and finally solve them. Nevertheless, our society has a standard for giving police unlimited access to our homes. We all want our privacy. There are also certain rights that we demand from our government and that our government has agreed to guarantee us under our Constitution.

What if we had a DNA database society? The risks are few now because most of people are not be able to decode the genome only a few educated have the ability to decode it. However, by opening the door to

have a genome database more and more of the general public will have the ability to read it. Similar to the computer revolution, at first only the elite, and small segments of the private sector and government would have access. Then slowly it will become accessible to big business and then it trickle down to the general public.

Centers will open where one can take a strain of hair and get a print out of someone's genome, get life expectancy a list of diseases. Perhaps that is far in the future from now, but we have to remember that what we do now will affect our future generations. This might be a reality several generations from now.

Federico Mayor from UNESCO(Universal Declaration On The Human Genome And Human Rights)¹⁰ wrote "knowledge is always positive what is negative are the applications." If the knowledge is used in a negative way that does not benefit humanity then that is unethical. Some may argue that the use in criminal investigations is positive. Yet faster and faster the use of the genome is not being used just for criminal investigations. Many human rights are starting to be infringed and the control of the DNA Database has

shifted from researchers who may follow the ethics of not harming humankind and using their research for good, like the lab at our campus. What kind of ethical guidelines do the Correctional facilities and police have to follow. Are they acting professionally? Given the track record of the police we see that many have not acted professionally by discriminating time and time again. This is the group who is collecting the DNA, which does not make me feel any safer. I don't believe that my

future generations at birth should give DNA samples. I also do not agree that the police be given the power to take DNA samples anytime they pull over a person, or one is suspected of shoplifting. Would that mean that mall security will be able to take DNA samples of those who they feel have been shoplifting or are causing trouble in the mall? We need more laws to protect us from the police just like there are laws that protect my home from being broken into by the police whenever they want.

Some may argue that leaving a case unsolved my be unethical because it is the duty of our police to solve the case and see that those offenders go to trail for what they have done. Although by continuing in the direction we are heading in by becoming a DNA database society more and more, our government is unethical by taking our rights. Also our society is to share some of the weight by allowing our politicians and government agencies to continue taking more of our rights.

...as a society, do we want the government to have our genome and have the power to know everything that makes up a person?

⁸ Irsay, Steve. *Cold hits v. civil liberties.*

⁹ *Ibid*

¹⁰ UNESCO studies ethical questions arising in genetics.

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