NATIONAL DNA DATABASE – TO BE OR NOT TO BE?

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Introduction

National DNA databases are very well established and their application has broadened in many countries around the world. Incorporation of latest genetic knowledge and its technical applications in the field of law enforcement are gaining importance in forensic genetics. DNA is a useful tool for defining a person because, unless they have an identical twin, everybody has a unique genetic code.

The National DNA Database is a government-based DNA profile database, which law enforcement agencies are using to identify suspects of criminal offenses. This consists of active sample reference databases that actively gather DNA from convicted offenders.

The importance of maintaining DNA databases can be well highlighted by following the rather well-known 1985 Kirk Bloodsworth case [1] in the USA. Kirk Bloodsworth was convicted for the rape and murder of a 9-year-old. It was in 1993 that his lawyers were successful in getting a DNA analysis done with the evidence found on the crime scene. This DNA did not match with that of Kirk Bloodsworth and he was set free. The DNA databases were subsequently improved and updated. In 2003, the crime scene DNA was run through the US National DNA database and it matched with that of a known criminal–Kimberly Ruffner. This case sums up everything—a crime that occurred in 1985 was eventually resolved in 2003, an innocent person who was sentenced to life was ultimately set free after about 8 years, and a murderer cum rapist who roamed around freely was finally caught 18 years after the offense was committed—all because of the importance of recognizing DNA and developing a database.

[1] Bloodsworth v. State, 76 Md. App. 23 (1988)

National DNA Database in India

India does not have a national DNA database. For DNA fingerprinting and diagnostics, an independent organization funded by the Department of Biotechnology, Ministry of Science and Technology, Government of India, a draft DNA Profiling Bill[2] was introduced in 2007. The DNA Profiling Bill sought to legalize the forensic collection and analysis of DNA samples and the creation of a national database. The Bill was further developed by an expert committee due to privacy concerns and a lack of safeguards. However, this never saw the light of day.

The DNA Technology (Use and Application) Regulation Bill, 2019[3] is also still pending in the Parliament. Some highlights of the Bill are as follows-

- The purpose of the Bill is to regulate the use of DNA technology to establish the identity of persons on matters laid down in the IPC, as well as offenses under other laws such as the Immoral Traffic (Prevention) Act 1956, the Medical End of Pregnancy Act 1971, the Protection of Civil Rights Act 1955 and the Motor Vehicles Act 1988 and various civil matters such as migration, parentage disputes, transplantation of human organs, etc.
- The Bill further seeks to establish a DNA Profiling Board. The Board, composed of 12 members, will be the supreme regulatory authority to grant accreditation to DNA laboratories and set guidelines, standards, and procedures for their operation.
- The members of the Regulatory Board shall consist of experts in the field of biological sciences; member of the National Human Rights Commission; the Director-General of the National Investigation Agency (or nominee); the Director of CBI (or nominee); the Director-General Police of a state; the Director of the Centre for DNA Fingerprinting and Diagnostics; Director of the National Accreditation Board for Testing and Calibration of Laboratories; Director of the Central Forensic Science Laboratory; Officers not below the rank of Joint Secretary from the Ministry of Law and Justice and Ministry of Science and Technology; and an officer not below the rank of Joint Secretary with knowledge and experience in biological science.

[2]https://lawcommissionofindia.nic.in/reports/Report271.pdf

[3] https://www.prsindia.org/billtrack/dna-technology-use-and-application-regulation-bill-2019#:~:text=the%202018%20Bill.,The%20DNA%20Technology%20(Use%20and%20Application)%20Regulation%20Bill%2C%202019,the%20identity%20of%20certain%20persons.

- The Bill seeks to establish a National DNA Data Bank and various Regional DNA Data Banks to maintain important indicators such as the index of the crime scene, the index of suspects or under-trials, the index of offenders, the index of missing persons and the index of unknown persons deceased. DNA laboratories are required to share with the Data Banks the DNA data thus collected during the analysis.
- In general practice, DNA samples may only be collected with the written consent of the individual but consent is not required for offenses punishable more than seven years of prison or death. The magistrate may order the taking of body substances if he is satisfied that there is sufficient and reasonable cause.
- No laboratory shall conduct DNA tests without receiving Board accreditation. The Board may grant or renew accreditation to such laboratory within a period of ninety days from receipt of the application, subject to such conditions as it may deem appropriate.
- The National DNA Data Bank shall, on receiving a written request of a person who is neither an offender nor a suspect or an under-trial, but whose DNA profile is entered in the crime scene index or missing persons' index of the DNA Data Bank, for removal of his DNA profile therefrom, remove the DNA profile of such person from DNA Data Bank under intimation to the person concerned. The Bill provides for the removal of suspect DNA profiles upon filing a police report or court order, and sub-trials upon court order.
- The Board shall take all necessary measures to ensure that DNA profile information is protected against access, use or disclosure not authorized under the proposed Act.
- Whoever willfully discloses such data in any manner to any person or agency not entitled to receive it under this Act shall be punishable with imprisonment for a term which may extend to three years and also with fine which may extend to one lakh rupees; willfully obtains individually identifiable DNA information from the DNA laboratory which may extend to three years and also with fine which may extend to one lakh rupees; accesses information otherwise than in accordance with the provisions of this Act; knowingly and intentionally, destroys, alters, contaminates or tampers with biological evidence which is required to be preserved under any law for the time being shall be punishable with imprisonment for a term which may extend to five years and also with fine which may extend to two lakh rupees.

Why does India not have a national DNA database?

An objection to databases of all descriptions is that the information contained in the obtained samples is more compendious than is necessary for criminal investigation purposes. [4]In contrast to a fingerprint, the sample obtained for a DNA profile may reveal not only whether X was at the crime scene, but also whether X had any genetic defects or diseases, such as AIDS. The uses to which this superfluous information could be put raises important questions about civil rights. Apart from the objections of principle above, it appears that national testing lacks cost-effectiveness. The apprehension and lack of trust is a common reason for people not being in favour of such reforms. Perhaps more education and awareness on how DNA analysis and maintaining a DNA database can help ensure a much safer society is the need of the hour. Our system is also reluctant to accept forensic science with open arms. The continued reluctance to lend more teeth to investigative agencies is partly attributable to their 'not so clean past' as well as the lack of experts and training facilities.

Benefits of National DNA Database

Implementing such a system will help solve crimes such as homicide and rapes that are rising in our country at alarming rates. DNA match makes it easier to identify who was actually present on the crime scene in case of a number of suspects for crimes, and also helps to exonerate the innocent. DNA database system would help in family searching and hence, the correlations become more feasible when the data sets are larger. It is seen that this system enhances detection of crime rates in countries like UK where rates were seen increasing from 26% to 40% after DNA samples were uploaded with national database.[5] The benefits of National DNA includes their ability to serve as an useful law enforcement tool by combatting crime more effectively, their contribution to preventing miscarriages of justice and their ability to prevent offenders from

[4] (2004) 8 SCC (J) 17

[5] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1490298/

further criminal activity, which in turn is expected to reduce crime and increase public safety and security.

It will be worthwhile to take a look at some cases where DNA analysis was used or where the sheer presence of a robust DNA database proved to be the clinching factor in not only bringing the Accused to book but also ensuring that the innocent are not wronged.

1. The 'Yorkshire Ripper' case: [6]A series of murders, all targeting women, ripped through Yorkshire (England) from 1975 on-wards. The assailant came to be known as The 'Yorkshire Ripper'. It was in 1978 that the Yorkshire Ripper sent some letters and a cassette tape to the police. The letters as well as the tape mocked the police and were seen as him challenging the Police to catch him if they could. The Yorkshire Ripper was eventually caught in 1981 and turned-out to be a man called Peter Sutcliffe. While he admitted to his crimes, it turned-out that he was not the man who had sent the letters and the tape to the Police. With the advancement of DNA analysis, it was in 2005 that the 'cold case' was re-opened and the saliva from the envelopes of the letters that the Police had received in 1978 was taken for analysis. The DNA so extracted was run through the DNA database and were found to match with those of a man called John Humble. John was arrested 30 years after he had committed the offence and was sentenced to 8 years in prison for having obstructed the course of Justice.

2. James Bain [7]case: This is the case where DNA came to the rescue of an innocent man after he was falsely convicted on charges of rape and stayed in prison from 1974 to 2009. The Florida law allows for compensation of USD 50000 for every year that an innocent man spends in prison and James Bain ended up getting 1.75 million USD. However, he did lose about 35 years of his life for an offence he did not commit. He would have been behind bars for the rest of his natural life, but for the advanced DNA technology and the ability of experts to look-up at cases as old as this one.

[6] Hill v Chief Constable of West Yorkshire [1988] 2 WLR 1049

[7] James Bain, Appellant, v. STATE of Florida, Appellee. No.2D08-1640.

3. Colin Pitchfork [8] case: In 1986, Richard Buckland was exonerated, despite having admitted to the rape and murder of a teenager near Leicester, the city where DNA profiling was first discovered. [9]DNA analysis helped establish that he was not responsible for the murders that he had confessed to. The DNA analysis helped track the real culprit and Buckland was set free. The real culprit, Colin Pitchfork did confess and described his act in detail.

4. The Palo-Verde case[10]: This is a fascinating case as it takes us through yet another dimension of DNA analysis. It is not just the humans who have DNA present in them but every species is made-up of it. And the DNA present in other species can just as easily be used to crack criminal cases. In 1992, DNA from a palo-verde tree was used to convict Mark Alan Bogan of murder. DNA from seed pods of a tree at the crime scene was found to match that of seed pods found in Bogan's truck. This put him at the scene of the crime. This is the first instance of plant DNA admitted in a criminal case.While this case has nothing to do with maintaining a DNA database, it certainly tells us how important it is to invest in the field of forensics and DNA analysis. Every plant and every tree can be individualized for each of them will have a different DNA.

The effectiveness as well as the increasing use of DNA analysis in solving criminal cases all over the world can be gathered from the above examples and India must not lag. The checks and balances can certainly be put in place. The possible gaps in the concept can be plugged and they must not deter us from stopping in the tracks.

Even the Mali math Committee Report, 2003[11] made some valuable suggestions in this regard:

- Section 313 of the Code of Criminal Procedure must be modified to draw adverse inferences against the accursed if, therefore, he fails to answer any relevant information against him, making it easy for law enforcement authorities to use DNA tests against him.

[8] R v Pitchfork, 2009 EWCA Crim 963
[9] https://www.theguardian.com/uk-news/2016/jun/07/killer-dna-evidence-genetic-profiling-criminal-investigation
[10] State v Bogan No.1 CA-CR 93-0453.
[11] https://doj.gov.in/sites/default/files/Agenda.pdf

- Specific legislation should be enacted providing the police guidelines setting a consistent system for obtaining genetic engineering.
- A national DNA database should be developed which will be of enormous help in combating terrorism.
- The establishment of more well-equipped laboratories to manage DNA samples and evidence.
- Efforts should be made to raise awareness among the general public, the prosecutors, the magistrates, and the police.

Conclusion

The DNA test is a strong boon in the criminal administration of justice. DNA profiling can be especially helpful in cold cases or old unsolved crimes. It can also help quickly identify repeat offenders, by comparing samples from the crime site to the DNA database. The presence of DNA at nearly every crime scene helps us determine exactly who was at the crime scene, with a national database. This allows for finding, trying, and convicting criminals, executing justice, and protecting other citizens. A database of Forensic DNA from crime scenes can also provide intelligence on the presence of 'links' among various crime scenes, potentially identifying serial offenders and assisting in crime pattern analysis. The time and money saved by quickly identifying suspects through DNA evidence far outweighs the financial expense of maintaining a DNA database. The DNA Technology (Use and Application) Regulation Bill, 2019 aims to use DNA to solve crimes by allowing it to be used for criminal investigation, recognizing missing persons, and assessing biological relationships among individuals. It also enables select individuals with built-in safeguards to store genetic information against its misuse. Apparently, the reasoning behind this Bill is that the expansive use of DNA in a criminal investigation may contribute to higher rates of conviction, particularly in cases of murder, rape, human trafficking, and other crimes involving the human body. A few important provisions have been incorporated into the bill to safeguard the privacy of the citizens. Most importantly DNA profiling would only

be used for identifying purposes and not for any other purpose. Secondly, without prior written consent, no bodily substance would be taken from anyone. However, this may not apply to persons punishable either with death or with more than seven years' sentence. Thirdly, the supervision and assessment of DNA standards would be the responsibility of a statutory body called the “DNA Profiling Board”. The DNA profile would only be indexed or used for comparison if the person was suspected of a crime or if he was a prior offender. Given the rise in cases of sexual assault against women in India, the need of the hour is the DNA database. Although much needs to be done to improve the country's adoption of DNA casework, there is sufficient evidence to demonstrate that law enforcement and investigative agencies can solve a complex crime and help deliver swift justice if the proper policy and supporting infrastructure is provided. The "witness" to the DNA is unstoppable if it is given a chance to speak the truth and nothing but the truth.