

# Legal Conundrum around DNA Profiling as a Tool for Justice

**Dr. Rohini Honap**

Principal & HoD,  
TMV's Lokmanya Tilak Law College, Pune, Maharashtra, India

**Keywords:** DNA, Constitutional Safeguards, DNA Technology Bill, Rights, Law, Crime Investigation

## Introduction

The DNA Based Technology made a ground-breaking impact in the field of science and totally revolutionized the field of medical science.

DNA, or deoxyribonucleic acid, is the basic building block for an individual's entire genetic makeup. It is a component of virtually every cell in the human body. DNA is found in human blood and is the same in his skin cells, semen, tissues, saliva, brain cells, teeth, mucus, fingernails urine, feces, bones, hair, organs, feces etc.

The ellipsis 'DNA' in recent times has become tantamount with solving crimes, testing for paternity, identifying human remains, and genetic testing.<sup>1</sup>

Universal Uses of DNA Analysis :

- Forensics (DNA is a key component in many criminal investigations.)
- Paternity Tests (DNA analysis can be used to determine the paternity of a child.)
- Ancestry Tracking
- Genetic Engineering
- Medical Tests
- Developing Vaccines
- Hormone studies

Recent times have seen immense advancement in a forceful criminal justice tool - deoxyribonucleic acid, or DNA. DNA can be used to recognize criminals with unbelievable precision when biological evidence is found. DNA can on the other hand also be used to discharge suspects and vindicate persons wrongly accused or convicted of crimes. DNA technology thus becomes a powerful tool increasingly guarantee accuracy and justice in the criminal justice system.

---

<sup>1</sup> [https://bio.libretexts.org/Bookshelves/Introductory\\_and\\_General\\_Biology/Book%3A\\_General\\_Biology\\_\(Boundless\)/14%3A\\_DNA\\_Structure\\_and\\_Function/14.1%3A\\_Historical\\_Basis\\_of\\_Modern\\_Understanding/14.1B%3A\\_Modern\\_Applications\\_of\\_DNA](https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book%3A_General_Biology_(Boundless)/14%3A_DNA_Structure_and_Function/14.1%3A_Historical_Basis_of_Modern_Understanding/14.1B%3A_Modern_Applications_of_DNA)

### **DNA Collected from a Crime Scene**

Recent advancement in DNA technology is facilitating law enforcement officers to solve cases earlier thought to be unfathomable.

DNA is a powerful legal investigative tool, and can be collected virtually anywhere. Because each person's DNA is different from every other individual's, except for identical twins, DNA collected from a crime scene can either link a suspect to the evidence or eliminate a suspect, similar to the use of fingerprints. Evidence from one crime scene can be compared with evidence from another, and can be linked to the same perpetrator locally, statewide, and across the Nation. Forensically, evidence that is several years decades old can also contain DNA. However, several factors can have an effect on the DNA left at a crime scene, including environmental factors (e.g., heat, sunlight, moisture, bacteria, and mold). Therefore, not all DNA evidence will result in an accurate DNA profile. Like fingerprints, DNA testing cannot reveal when the suspect was at the crime scene and how long. DNA has helped solve many cases when imaginative investigators collected evidence from non-conventional sources like of saliva on dandruff, cigarette butts, dirty laundry, toothpick tips postage stamps, etc. DNA analysis of a single hair even without the root found deeply embedded in a victim's body can be a vital piece of evidence. It also can be the evidence that links different crime scenes to each other in a small town.

Other Technical and Procedural concerns in using DNA as an investigative tool:

- Human blunders can find their way into the forensics procedure. DNA of poor quality collected from crime scenes may lead to erroneous results. DNA of one person may also be transferred via a third party to the crime scene or victim. DNA profiling, though very accurate, it is not absolutely infallible.
- The abuse, misuse, or misinterpreted, DNA evidence will result in gross miscarriage of justice. DNA is just one piece of the criminal justice conundrum, and should not be exclusively relied on to the exclusion of other investigative and analytical tools.

### **Balancing of Privacy, and Personal Rights in Context of DNA Evidence**

The ethical framework for human protection has its origins in the archaic Hippocratic Oath. The Hippocratic Oath, embodies the spirit of privacy of each patient, in respect of his personal information and lays the foundation for ethical framework for maintaining privacy of genetic and DNA data of an individual, to be used only for his benefit.<sup>2</sup>

Through scientific advancements, genetic testing has become cheaper and easier due to which the DNA of the person can be easily collected and stored in the database. But these developments have created a genuine concern for an individual's genetic privacy.

Forensic law experts and forensic scientists believe that the collection and usage of genetic information in criminal cases should be governed by some set of ethical principles. These ethical principles must ensure that the anonymity of an individual is maintained and a person with less anonymity must be given some special protection. These principles should also include the concept of consent. The investigating officers should always obtain consent from an individual collecting the DNA sample. These principles

---

<sup>2</sup> [https://www.medicinenet.com/hippocratic\\_oath/definition.htm](https://www.medicinenet.com/hippocratic_oath/definition.htm)

will maintain the balance between criminal justice and the right to genetic privacy. The use of DNA data in criminal trials may deliver justice by protecting public interests. But it has also made constant threats to some of the basic human rights such as the right to privacy, bodily integrity and autonomy of the person.<sup>3</sup>

Drawbacks of use of genetic information:

1. The genetic data comprises the DNA and genes of a person. And, if someone has access over them, then he can know everything about one's private life.
2. Many people for status of their health, take direct-to-consumer genetic tests (DTC) which are not 100% accurate. This gives access to private information to the third party.
3. If the genetic data gets stolen or someone has the unlawful access over it then it will surely affect the privacy of an individual.
4. The genetic data contains personal information of a person, of his present, past and future. And if there is a revelation of such information, then this may lead to some adverse effect in their lives by getting an unanticipated response from employers, insurance companies, government and others.<sup>4</sup>

New policies are developing to regulate direct-to-consumer testing for protecting genetic privacy. However, the consumer should go through the testing institutes privacy policy before signing up to prevent mishaps in future. And if the company violates its own policy, one can drag the company in the court under the relevant law, and while taking a genetic test at any clinic, precautions to understand the clinic's privacy policy must be taken. The genetic information contains very sensitive information about an individual, hence genetic privacy must be ensured.<sup>5</sup>

### Present Legal Conundrum around DNA Profiling in India

In India, the legal position of DNA fingerprinting has mostly remained dicey, fluctuating between among two opposite extremes of arriving at the truth or respecting personal privacy. The Constitution under Articles 51A(h) and (j) imposes duty upon the citizens to develop scientific temper, humanism and the spirit of Inquiry and reform to strive towards excellence. In individual and collective spheres, thus the parliament can legitimately undertake and promote technical and scientific methods to accelerate the administration of criminal justice.

Section 9 of the Indian evidence Act, 1872 act deals with 'facts necessary to explain or introduce a fact in issue or relevant fact'. Further, if the evidence of an expert is relevant under section 45, the ground on which such opinion is derived is also relevant under section 51. Section 46 deals with facts bearing upon opinions of experts. The opinion of experts based on the DNA profiling is also relevant on the same comparison. However, the question that is actually confounding is that whether a DNA analysis can be lawfully directed or not. In cases, such as Rape, the CrPC vide Section 53-A has provided that a person accused of rape can be examined by a medical practitioner, which may include the collection of bodily substances from the accused for DNA profiling.

<sup>3</sup> <https://blog.ipleaders.in/right-to-genetic-privacy-an-analysis/>

<sup>4</sup> <https://ghr.nlm.nih.gov/primer/dtcgeneticstesting/directtoconsumer>

<sup>5</sup> <http://sitn.hms.harvard.edu/flash/2018/understanding-ownership-privacy-genetic-data/>

## Constitutional Safeguards

### “Nemo debet prodere ipsum”, the Privilege against Self-incrimination

The fundamental right of protection against self-incrimination under Article 20(3), cannot be ignored in the context of violation of privacy by way of DNA fingerprinting, and its implications under Article 21 of the Constitution of India. Various contradictory and inconsistent judgments of different high courts, has resulted in legal uncertainty and confusion regarding the legal position of use of DNA technology as a tool of investigation.

### Relationship between the DNA Fingerprinting Technology, the Right against Self Incrimination and Right of Privacy

The Hon’ble Supreme Court in context of the right against self-incrimination in the case of State of Bombay v. Kathi Kalu Oghad & others.<sup>6</sup> An eleven Judge bench of the court held that:

“When an accused person is called upon by the Court or any other authority holding an investigation to give his finger impression or signature or a specimen of his handwriting, he is not giving any testimony of the nature of a ‘personal testimony’. The giving of a ‘personal testimony’ must depend upon his volition. He can make any kind of statement or may refuse to make any statement. But his finger impressions or his handwriting, in spite of efforts at concealing the true nature of it by dissimulation cannot change their intrinsic character. Thus, the giving of finger impressions or of specimen writing or of signatures by an accused person, though it may amount to furnishing evidence in the larger sense, is not included within the expression ‘to be a witness’. Thus the court established that, giving of fingerprint or collection of any other evidence of ‘private nature’ does not essentially attract the maxim ‘nemo debet prodere ipsum’, i.e., no one can be required to be his own betrayer; as the latter would mean that a person has produced knowledge through his own volition that would establish his guilt, either by way of undue influence, coercion or threat or not.”

In Bhabani Prasad Jena v. Convenor Secretary, Orissa State Commission for Women,<sup>7</sup> the Supreme Court whilst emphasizing upon the importance of DNA testing in the process of administration of justice held:

“When there is apparent conflict between the ‘Right to Privacy’ of a person not to submit himself forcibly to medical examination and duty of the court to reach the truth, the court must exercise its discretion only after balancing the interests of the parties and on due consideration whether for a just decision in the matter, DNA test is eminently needed.”

Furthermore to the pertinent issue of the right privacy of an individual, embedded in Article 21 of the Constitution, a fundamental question revolving around the application of DNA technology is - just how fundamental is the right to privacy of an individual and the degree of absoluteness, if there is one, exists?

However, in landmark case of Ram Jethmalani v. Union of India,<sup>8</sup> Supreme Court dealt with the right of privacy ornately and held Right to privacy is an integral part of right to life. This is a cherished

<sup>6</sup> AIR 1961 SC 1808

<sup>7</sup> AIR 2010 SC 2851

<sup>8</sup> (2011) 8 SCC 1

constitutional value, and important that human beings be allowed domains of freedom that are free of public scrutiny unless they act in an unlawful manner. The concept of fundamental rights, such as a right to privacy as part of right to life, is not merely that the State is enjoined from digressing from them. It also includes the responsibility of the State to protect such rights against the actions of others, even in the context of exercise of fundamental rights by such other persons.

Further, in Justice K.S. Puttaswamy (Retd.) v. Union of India & Others,<sup>9</sup> the Supreme Court in the Aadhar case. observed that there have been contradictory judgments on the issue but the law laid down in M.P. Sharma & Others v. Satish Chandra,<sup>10</sup> and Kharak Singh v. State of Uttar Pradesh & Others,<sup>11</sup> if read plainly and accepted as a law, the fundamental rights guaranteed under Article 21 would be denuded of vigour and vitality. The Court referred the matter to a larger bench for authoritative interpretation of law on the issue and the bench affirmed the right to privacy to be fundamental in nature.

Though in context of investigations for the furtherance of administration of justice, compelling State interest comes to the forefront, it is just one aspect of the broader ‘strict scrutiny test’, which was applied by the Court in Anuj Garg v. Hotel Association of India.<sup>12</sup> The other essential facet is to demonstrate narrow tailoring, i.e., the State must demonstrate that even if a compelling interest exists, it has adopted a method that will infringe in the narrowest possible manner upon individual rights to strike a delicate balance is maintained between the fundamental rights of the individual as well as the larger interest of the society.

In light of the confusing legal position described in aforementioned paragraphs, it was necessary to bring in a special dedicated legislation that governs the uses and Application of DNA Technology in India.

### **The Way Ahead by Introduction of the DNA Technology (Use & Regulation) Bill, 2017**

#### **Salient Features of the Bill<sup>13</sup>:**

- The objective of the Bill, is to regulate DNA technology usage for establishing the identity of persons in respect of offences under the Indian Penal Code, and other laws such as the Medical Termination of Pregnancy Act, 1971, Immoral Traffic (Prevention) Act 1956, the Motor Vehicles Act, 1988, and the Protection of Civil Rights Act, 1955, and for various civil matters such as genetic studies, hormone studies, migration, ancestry, parentage disputes, transplantation of human organs etc.
- Provision for establishment of a DNA Profiling Board. The Board, with 11 members, will be the regulatory authority to grant official recognition to DNA laboratories and lay down guidelines, standards and procedures. It will be the sole authority to make recommendations on ethical and human rights, including questions of privacy and issues related to DNA testing.
- 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

<sup>9</sup> (2015) 8 SCC 735 (2017) 10 SCC 1; AIR 2017 SC 4161

<sup>10</sup> 1954 AIR 300, 1954 SCR 1077

<sup>11</sup> 1963 AIR 1295, 1964 SCR (1) 332

<sup>12</sup> AIR 2008 SC 663

<sup>13</sup> The DNA Technology (Use & Regulation) Bill, 2017.

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.

- To set up a National DNA Data Bank and various Regional DNA Data Banks, with the purpose of maintaining important indicators such as crime scene index, suspects or under trials index, offenders index, missing persons index etc.
- The samples of DNA can only be collected with the written consent of the individual but for offences with punishment of more than seven years of imprisonment or death, consent is not required. The magistrate may, if he is satisfied that there is just and rational cause, may order for taking of bodily substances.
- No laboratory shall undertake DNA testing without obtaining recognition from the Board. The Board may, within a period of ninety days from the receipt of application grant accreditation to subject to such conditions as it may deem fit, or renew the same. On the revocation or suspension of accreditation of the DNA laboratory, the laboratory shall hand over all DNA samples and records relating to DNA testing from its laboratory to such DNA laboratory as may be directed by the Board.
- The National DNA Data Bank shall, on receiving a written application/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, remove the DNA profile of such person from DNA Data Bank . The Bill provides for the removal of DNA profiles of suspects or under trials only on the basis of a court order.
- Ensure guarding of DNA profiles, against access. To maintain confidentiality as disclosure is not permitted under this Act, except as provided under the Act.
- Willful disclosure of 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.
- Whosoever willfully obtains individually identifiable DNA information from the DNA laboratory may be punished with imprisonment, which may extend to three years and also with fine which may extend to one lakh rupees.
- Whosoever obtain accesses to 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.

### **Critical Analysis of the DNA Technology Bill**

The move to bring about a regulatory legislation for DNA technology is definitely a good move and must be applauded, as DNA is a fundamental and the most personal constituent of individual containing distinctive biological history about a person. On the other hand, the capability of the data being foully misused, by the investigating agencies, and other private organizations largely looms over the DNA Banks. To illustrate. The bill does not specify if samples collected in civil matters that may be stored in the data banks, may also lead to acute privacy violations. The important apprehension whether DNA

technology is foolproof, and whether the proposed law adequately addresses the possibility of misuse or abuse, is largely unrequited.

There also remains a chance where a wrong match could be fabricated or some mix up occurs while processing the DNA resulting in blatant loss to the persons rights and liberties and in such a case, giving it to a statutory agency could be a great imminent risk. The new draft Bill does try to address some of these concerns, although it asserts complete conviction in DNA technology. DNA profiling is "an accurate and well established scientific technique", says the 271<sup>st</sup> Law Commission Report of 2017, that has proposed the new draft.<sup>14</sup> (11)

The ever pertinent issues such as

- whose DNA may be collected,
- under what circumstances they have been collected,
- how mandatory was the consent of the individual for such collection of sensitive biological information,
- who can access the DNA databases,
- under what circumstances can records be deleted,

have been raised repeatedly, and as in case of every new piece of legislation, this one too has its own share of concerns, qualms and doubts and how it goes ahead is a matter of great anticipation.

## **Comparative Study of Existing DNA Laws in Other Countries and International Human Rights Aspect**

### **United States**

In the United States, the Federal Bureau of Investigation developed a DNA bank called as Combined DNA Index System (CODIS). The US Supreme Court in *Maryland v. King*,<sup>15</sup> (12) held that in cases where officers are making an arrest for a charge of serious offence, they are authorized to take DNA samples from the accused individuals by way of collecting cheek swabs and the same can be lawfully used as evidence in the court of law and such imposition of a person's privacy is valid under the Fourth Constitutional Amendment.

### **United Kingdom**

The Criminal Justice and Public order Act in the United Kingdom is the basis for the National DNA Database (NDNAD). The police, in certain cases is allowed to take DNA's of the arrested person before the investigating process begins so as to expedite the process.

The Disaster Victim Identification the International Society of Forensic Genetics,<sup>16</sup> (14) have laid down guiding principles that DNA laboratories must follow while handling cases, in which information is sought by the police or investigative agencies, in order to adhere to the moral obligations that are imposed upon them. Conditions in which database can be created and dealt with, have their own set of advantages and drawbacks.

<sup>14</sup> <https://lawcommissionofindia.nic.in/reports/Report271.pdf>

<sup>15</sup> [https://www.supremecourt.gov/opinions/12pdf/12-207\\_d18e.pdf](https://www.supremecourt.gov/opinions/12pdf/12-207_d18e.pdf)

<sup>16</sup> [https://www.researchgate.net/publication/23664528\\_DNA\\_Commission\\_of\\_the\\_International\\_Society\\_for\\_Forensic\\_Genetics\\_ISFG\\_Recommendations\\_regarding\\_the\\_role\\_of\\_forensic\\_genetics\\_for\\_disaster\\_victim\\_identification\\_DVI](https://www.researchgate.net/publication/23664528_DNA_Commission_of_the_International_Society_for_Forensic_Genetics_ISFG_Recommendations_regarding_the_role_of_forensic_genetics_for_disaster_victim_identification_DVI)

### **Conclusion**

The creation of DNA databases under ‘The DNA Technology (Use & Regulation) Bill, 2017’, raises several ethical and legal concerns, which need to be addressed appropriately, before the legislation is passed, in order to safeguard individuals and even accused persons, against the possibility of fundamental human rights violation. As there is a wide scope of application and execution of this technology, for the benefit of mankind, but like a double edged sword has to be used with great prudence and caution. A delicate balance thus, has to be struck between use for the advantage of persons as against the violations of fundamental rights under Art. 21 and Art. 20 (3), when it is sought to be used as a tool for administration of justice.

Thus a well classified system of the storing of DNA profiles, must be developed to segregate profiles for purely medical, scientific and other reasons from the profiles of suspects in criminal investigation. Maintaining of high standards of confidentiality, and appropriate release of information only to certified agencies or criminal justice investigation officials, must be scrupulously followed. All these safeguards are absolutely necessary to ensure the successful implementation of this legislation in its true intent and spirit of the law.