

Constitutionality and Legal Aspects of DNA Profiling in Indian Courts - An Analysis

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Abstract

In the field of forensic science, one of the most significant biological discoveries during the 20th century is the discovery of DNA. The word "DNA" stands for "Deoxyribonucleic acid" which is a thread-like chain of nucleotides. It is a molecule that contains the genetic code of living organisms. Nowadays, DNA tests are performed for various purposes like archeological surveys to keep a record of genetic codes, paternity and maternity test, search for genetic ancestors, to assess the health problem of an unborn fetus and the probability of risk of certain genetic diseases, criminal investigations, tracking down long-lost relatives and space research w.r.t. new species and unidentified articles from the outer space. "DNA Profiling" is performed to determine an individual's DNA characteristics. "Privacy", on the other hand, is a fundamental inalienable right, intrinsic to human dignity and liberty, secured under Article 21 of the Constitution of India. In this field of forensic science, the "Right to Privacy" generally comes into the picture when DNA profiling is conducted to establish the paternity and maternity of a child and in cases of criminal investigations for identification of the criminals. A DNA sample of a person reveals the person's identity and genetic relationship with the other person when compared; therefore, a question regarding safeguarding the privacy is generally raised while performing DNA Profiling. Although DNA Profiling serves the court proceedings but safeguarding the database always remains a matter of concern. This research paper aims to examine how much secure are the DNA Profiles in India and till what extent the Right to Privacy can be exercised w.r.t. DNA Profiles in the matters of civil disputes and criminal investigations with a discussion on some insights of the draft bill of The DNA Based Technology Bill, 2017 and DNA Technology Regulation Bill, 2019. Further, this research paper also aims to suggest some safeguards w.r.t. individual's Right to Privacy in the context of DNA Profiling. The analysis of this research paper will be based on a doctrinal approach.

Keywords

Constitutionality, DNA Profiling, Privacy.

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Introduction

“Science” is quite uneasy to be defined in a simple definition but sometimes it can even be wrapped up in a few words. It is one of the interesting branches of knowledge or study dealing with nature and the behavior of natural things. Science is intellectual and practical activity encompassing the systematic study of the structure and behavior of the physical and natural world through observation and experiment.¹

“Forensic Science” is the application of the natural sciences to matters of the law; it includes a variety of different activities and specialties.² Forensic Science has proved itself as a significant element in controlling crimes while continuously serving a high quality of justice. With the advancement in science and technology, the capabilities and significance of forensic science laboratories will also continue to grow. Sometimes, the term “Forensic Science” is also used as a synonym for “criminalistics”. Criminalistics is concerned with the recognition, identification, individualization and evaluation of physical evidence using the methods of the natural science in matters of legal significance.³ In the field of forensic science, one of the most significant biological discoveries during the 20th century is the discovery of DNA.

The word “DNA” stands for “*Deoxyribonucleic acid*” which is a molecule that contains the genetic code of living organisms. It is a thread-like chain of nucleotides that carries the genetic instructions in the body of organisms. DNA is present in each and every cell in the living organisms and tells what proteins to make. Children inherit the DNA from their parents because of which children share traits with their parents like skin, hair, eye color, etc. The DNA present in a person is a combination of the DNA from each of their parents. The DNA has a double helix shape, which is like a ladder twisted into a spiral. Each step of the ladder is a pair of nucleotides.⁴

In 1869, the chemical DNA was first discovered, but in genetic inheritance, its role was not demonstrated until 1943. In 1953 James Watson and Francis Crick determined that the structure of DNA is a double-helix polymer, a spiral consisting of two DNA strands wound around each other. Each strand is composed of a long chain of monomer nucleotides.⁵ The children inherit genes from their parents. The individualizing characteristics of blood - the blood groups - the serum groups - the isoenzymes and hemoglobin all are inherited. The science of inheritance is called “*genetics*”.⁶⁶ Supra note 3 at 241.

“DNA Profiling” (also known as DNA fingerprinting) is performed to determine an individual’s DNA characteristics, called a “DNA profile”. It is a method

used to identify an individual by collecting a sample of DNA and examining the unique patterns in their DNA. The DNA sample of a person reveals the person's identity and his/her genetic relationship with the other person when compared, therefore, a question regarding safeguarding the right to privacy is generally raised while conducting DNA Profiling.

“Privacy” is a fundamental inalienable right, intrinsic to human dignity and liberty, secured under Article 21 of the Constitution of India. In this field of forensic science, the “Right to Privacy” generally comes into the picture when DNA profiling is conducted to establish the paternity and maternity of a child and in cases of criminal investigations for identification of the criminals.

A significant advancement can be seen in the field of science and technology with time. It is a great success attained by forensic science that the DNA sample of a living organism can tell so much about its genetic characteristics. It is imperative to mention that DNA testing has evolved as one of the most significant biological discoveries which we have today which can tell about genetic relationships, genetic disorders and all other genetic connections/traits which human beings share with each other, for example like children receive the traits from both the parents. DNA profiling also helps the courts in civil disputes and criminal investigations. Right to privacy generally comes into the picture, whenever DNA profiling is to be conducted. Although DNA profiling serves the court proceedings but safeguarding the same always remains a matter of concern. This research paper is concerned with how much secure the DNA Profiles in India are and till what extent the Right to Privacy can be exercised w.r.t. DNA Profiles in the matters of civil disputes and criminal investigations. This research paper also throws some light on some insights of the draft bill of The DNA Based Technology Bill, 2017. Lastly, the DNA Technology Regulation Bill, 2019 came up which has been drafted to maintain the harmony between the fundamental right to privacy and the legal necessity of DNA profiling.

DNA And Common Uses of DNA Tests

DNA contains the genetic code which is transferred from the parents to their children. That is why we generally see many similarities between parents and children. It can even be traced in long distant relatives. Genetic traits flow from generation to generation. From heart to skin, blood to bone, every cell which is present in our bodies contains a complete set of our DNA. Samples for the DNA test can be taken from anywhere in the body, including skin, hair follicles, blood, semen, saliva and other bodily fluids.

Nowadays, DNA tests are performed for various purposes. Some of the common purposes are: -

- Archeological survey to keep a record of genetic codes and progression of life on earth dating back centuries,
- Paternity and maternity test,
- Search for genetic ancestors,
- To assess the health problem of an unborn fetus and the probability of risk of certain genetic diseases,
- Criminal investigations,
- Tracking down long-lost relatives and
- Space research with respect to new species and unidentified articles from the outer space.

Constitutionality and Legal Aspects of DNA Profiling

DNA profiling is accepted in India. DNA evidence is used as strong evidence in civil and criminal trials with reliability nowadays. Section 45 of the Indian Evidence Act, 1872, recognizes the DNA proofing as admissible expert evidence which is totally based on scientific analysis. DNA profiling gives a unique and specific profile that is similar to a thumb impression which is why it is also known as DNA fingerprinting. It is a dynamic tool for the purpose of identification and is admissible evidence. DNA can be extracted or isolated from biological samples such as blood, semen, saliva, tissue, fingernails, hair, mucus, perspiration, cups, cigarette buds, stamps, bite marks, weapons, clothes, etc. depending upon the scene of crime, therefore, an evidence can be collected from almost anywhere. A due care is required during the collection and storage of DNA evidence because it can be easily contaminated and can lose its evidentiary value.

The Constitution under Article 51A(h) and (j) casts a duty on every citizen of India to develop the scientific temper, humanism and the spirit of inquiry and reform and to strive towards excellence in all spheres of individual and collective activity. Parliament is competent to undertake legislations which encourage various technological and scientific methods to detect crimes, speed up investigation and determine standards in institutions for higher education and development in technical institutions (Entry 65 & 66 of the Union List). The other relevant provisions of the Constitution are, (i) Article 20(3) which guarantees a right against the self-incrimination; and (ii) Article 21 which guarantees the protection of life and liberty of every person.⁷

A. Indian Evidence Act, 1872

Some provisions of The Indian Evidence Act,1872 which are dealt with while deciding a case in the context of the scientific test of DNA: -

- **Section 9:** facts necessary to explain or introduce a fact in an issue or relevant fact.
- **Section 45:** opinion of experts
- **Section 51:** grounds of opinion, when relevant
- **Section 112:** Birth during the marriage, conclusive proof of legitimacy (this section provides that birth during the continuance of a valid marriage is a conclusive proof of legitimacy with only one exception that the parents had no access to each other during the period of conception)
- **Section 114:** presumption as to the absence of consent in certain prosecution for rape⁸

If the expert evidence is relevant u/s 45, the grounds on which such opinion is derived are also relevant u/s 51. Section 46 provides for the 'facts bearing upon opinions of experts.' The expert opinion based on the DNA profiling is also relevant to the analogy. But still, whether the DNA test can be directed by a court of law or not always remains a debatable issue.

B. Criminal Procedure Code,1973

- **Section 53-A:** this provision was added vide the Code of Criminal Procedure (Amendment) Act, 2005 w.e.f 23-6-2006, providing that a person accused of rape can be examined by a medical practitioner and this process will include the taking of bodily substance from the accused person for DNA profiling.
- It is noteworthy that, the said Amendment substituted the Explanation to sections 53 and 54, and made it applicable to section 53A as well, to clarify the scope of 'examination', especially with regard to the use of modern and scientific techniques including DNA profiling. Section 53 authorizes the police officials to get a medical examination of an arrested person done during the course of an investigation by registered medical practitioner. The Explanation provides that "Examination shall include the examination of blood, blood-stains, semen, swabs in case of sexual offenses, sputum and sweat, hair samples and fingernail clippings by the use of modern and scientific techniques including **DNA profiling** and such other tests which the registered medical practitioner thinks necessary in a particular case".⁹
- **Section 311-A:** this provision was added to give power to the Magistrate to order a person to give a specimen signature or handwriting.

Some Important Case Laws on DNA Test and Right to Privacy

The Hon'ble Supreme Court in *Bhabani Prasad Jena v. Convenor Secretary, Orissa State Commission for women*, held that when there is apparent conflict between the right to privacy of a person not to submit himself forcibly to medical examination and the 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.¹⁰

In *Dharam Deo Yadav v. State of Uttar Pradesh*, the Hon'ble Supreme Court dealt with the admissibility of DNA evidence. It was observed by the Hon'ble Supreme Court that "Crime scene has to be scientifically dealt with without any error. In criminal cases specifically based on circumstantial evidence, forensic science plays a pivotal role, which may assist in establishing the evidence of crime, identifying the suspect, and ascertaining the guilt or innocence of the accused. One of the major activities of the investigating officer at the crime scene is to make a thorough search for potential evidence that has probative value in the crime. Investigating officers may be guarded against potential contamination of physical evidence which can grow at the crime scene during collection, packing and forwarding. Proper precaution has to be taken to preserve evidence and also against any attempt to tamper with the material or cause any contamination or damage."¹¹

Section 112 of the Indian Evidence Act, 1872, is exception to the scientific test of DNA. Section 112 of the Indian Evidence Act provides that if the parents were residing together at the time of conception of the child, then for the purpose of avoiding the paternity of the child, DNA testing cannot be used as a method. An idea behind this exception is to safeguard the interest of the child and to avoid the bastardization of the child. In case of *Dipanwita Roy v. Ronobroto Roy*¹² in Civil Appeal no. 9744 of 2014, the Supreme Court of India upheld the validity of section 112 of the Indian Evidence Act despite the DNA test proving otherwise.

In the case of *Nandlal Basudev Badwaik v. Lata Nandlal Badwaik* the Court held that depending on the facts and circumstances of the case, it would be permissible for the Court to direct the DNA examination to determine the veracity of the allegation(s) made in a case. If the direction to hold such a test can be avoided, it should so be avoided. The reason is that the legitimacy of the child should not be put in peril.¹³

In the case of *Sharda v. Dharampal*, the Court observed that if everyone started using Article 21 as a shield to protect themselves from going through the DNA test then it will be impossible to arrive at a decision. The Delhi High Court also held that DNA testing does not amount to a violation of any of the rights.¹⁴

In *Krishan Kumar Malik v. the State of Haryana*, the Supreme Court explained that even in the absence of section 53A Cr. P.C., DNA profiling could be permissible under law. The Court observed: Now after the incorporation of section 53A in the Criminal Procedure Code with effect from 23.06.2006.....it has become necessary for the prosecution to go in for DNA test in such type of cases, facilitating the prosecution to prove its case against the accused. Prior to 2006, even without the aforesaid specific provisions in Cr. P.C., the prosecution could have still resorted to this procedure of getting the DNA test.....to make it a foolproof case....¹⁵

In the case of *Rohit Shekhar v. Narayan Dutt Tiwari &Ors.*, the Delhi High Court held that “a person can be forced to undertake the test for the reason that the valuable right of the party cannot be taken away by asking the said party to be satisfied with comparatively week adverse inference”.¹⁶

In *Kharak Singh v. State of Uttar Pradesh*, a six- Judges Bench held that “....Nor do we consider that Article 21 has any relevance in the context as was sought to be suggested by the learned counsel for the petitioner., the right of privacy is not a guaranteed right under our Constitution and, therefore, the attempt to ascertain the movements of an individual which is merely a manner in which privacy is invaded is not an infringement of a fundamental right guaranteed by Part III.”¹⁷

In *Ram Jethmalani v. Union of India*, Supreme Court dealt with the right of privacy elaborately and held that the “Right to privacy is an integral part of the right to life. This is a cherished constitutional value, and it is important that human beings be allowed domains of freedom that are free of public scrutiny unless they act in an unlawful manner.... The solution for the problem of abrogation of one zone of constitutional values cannot be the creation of another zone of abrogation of constitutional values.... The notion of fundamental rights, such as a right to privacy as part of the right to life, is not merely that the State is enjoined from derogating from them. It also includes the responsibility of the State to uphold them against the actions of others in the society, even in the context of the exercise of fundamental rights by those others.”¹⁸

In *Justice K S Puttaswamy (Retd.) v. Union of India*, it was held that “the right to privacy is protected as an intrinsic part of the right to life and personal liberty under Article 21 and as a part of the freedoms guaranteed by Part III of the Constitution.”¹⁹

The DNA Based Technology (Use and Regulation) Bill, 2017

With the upcoming issues relating to DNA profiling and the right to privacy coming into conflict with each other, we can see The DNA Based

Technology (Use and Regulation) Bill, 2017 (in short called DNA Bill) as a light of hope in harmonizing the conflict between the two. Our government had earlier also made an attempt to draft a bill in this regard which was called The Human DNA Profiling Bill of July 2015. But this draft bill faced criticism for arbitrarily assigning wide-ranging discretionary powers, for not possessing the necessary privacy and data security safeguards, and for refusing to submit to a higher authority that could hold its administration accountable. Therefore, because of these shortcomings, this bill was not introduced by the government. But later, the government came up with a new version of the DNA bill titled as The DNA Based Technology (Use and Regulation) Bill, 2017 combating the shortcomings of the previous draft bill.

Features of the new version of DNA Bill are as follows: -

- ❖ DNA profiling board– the board is empowered under this DNA bill for performing the activities under the provisions of the bill. The DNA profiling board will consist of 11 members and at least 4 out of the 11 members can be scientists familiar either with ‘biological science’ or specifically with DNA fingerprinting. The board will be the one who will have the final say in all the activities performed under the provisions of the bill, which can be broadly classified as: -
 - Supervising the laboratories which are vested with the duty of collecting DNA samples and preparing the genetic fingerprints;
 - supervising the maintenance, operations, upgrades and security of the DNA databank; and
 - advising the government on all matters which are related to DNA profiling, analysis and the data therefrom.
- ❖ DNA Data Bank – the databank is vested with the duty of storing the genetic information obtained from people, under the five possible indices at national and regional levels. The five possible indices are as follows :-
 - Crime scene
 - Suspect/ undertrial
 - Offender
 - Missing person
 - Unknown deceased persons

There will be a databank director who will be responsible for all the activities and decisions concerned with the databank. The such director will be required to have a scientific qualification.

- ❖ For the collection of DNA samples, there will be licensed laboratories, police stations and courts around the country. After the collection, the sample will be analyzed for unique information about the person's identity, then it will be stored in a databank and thereafter, it will be used as evidence in the trials and to identify the missing or unidentified persons.
- ❖ Safeguards provided under the DNA bill: -
 - Data allowed from 13 positions instead of 17 - according to the earlier draft bill of 2015, the data was allowed from 17 positions, or loci, on an individual's genome to be stored in the databank and later on used it for analysis. It was pointed out that this can result in certain personality traits of the individual being identified beyond the extent that is actually necessary to confirm the sequence's uniqueness. Therefore, now in the new draft, the number of loci has been changed to 13.
 - Written consent – now, under the new draft bill, it is required to obtain the written consent from an individual before his/her DNA sample can be obtained by a medical practitioner. But this consent clause is waived for those persons who have been accused of a crime that is punishable either by death or by more than seven years of imprisonment.
 - If an individual has been designated a suspect or an offender, then only his/her DNA profile can be compared to the entries in the suspects and offenders indices in the databank. Until then, his/ her DNA profile can be compared only to a crime scene, missing persons and unknown deceased person's indices.
 - DNA profiles of persons who are neither a suspect nor a convict – this is the category of individuals like parents of missing children, victims of assault, etc. The profiles of such persons enter into the databank only when they give consent to it in the first place, in the hope that it will help in locating their missing child or identifying the accused in respective cases. Records of such persons will also be removed when the particular case is solved. He/she has to write a letter to the databank director for the purpose of removing the record from the databank.
 - License – all the DNA testing laboratories are required to apply for the right license with the DNA profiling board within 60 days of the enactment of the new draft bill.

Thereafter, in 2019 a new bill on DNA was introduced i.e., DNA Technology Regulation Bill 2019.

DNA Technology Regulation Bill, 2019

In 2019, this new bill came up and it provides for: -

- Establishment of a DNA Regulatory Board,
- DNA Data Banks on National and regional levels,
- DNA laboratories,
- Protection of information,
- Penalties in case of violation of confidential information.

Some features of the new bill are like that it will contribute to fast-track criminal cases, the two major components are the DNA Data Banks and the DNA Regulatory Board. There will be two kinds of databanks, national and multiple regional. These databanks will be maintaining the data in various categories accordingly which are like: -

- The crime scene index,
- The suspects' or undertrials' index,
- The offenders' index,
- The missing persons' index and
- An 'unknown' deceased person index.

The Regulatory Board will consist of 12 members and the respective fields from where these members will be chosen have also been provided in the bill. The Board is entrusted with the responsibility regarding the storage of the DNA data securely and to keep a check that the data is being used properly.

It has been observed that the bill still contains some problems regarding the written consent, and it fails to state anything about voluntary consent. Further, there is no specific mention of the storing of DNA samples for the civil matters in any index. How the DNA labs will be storing the copies of the sample and whether they are accredited by the board to do so, that is another question. Another major issue is that the bill does not specify that to ascertain the identity of which part of an individual's DNA can be analyzed.

We can see that the legislature is in process to bring a certain set of laws to regulate this area. When a new law comes up it has to go through various challenges as well. It is expected that soon after eradicating all the drawbacks, a new law will be passed on regulating the DNA profiling.

Conclusion

The DNA Profiling is an accurate and well-established scientific test that plays a pivotal role in many civil disputes, and criminal investigations and apart

from that in many other fields also like an archeological survey for keeping a record of genetic code, and space research. r.t. unidentified articles, for medical research purposes, etc. The use of DNA Profiling involves various legal and ethical issues and there exists a concern and apprehension in the minds of the common man that it might get misused if not protected and may result in the disclosure of personal information. Privacy is considered as an intrinsic part of Article 21 of the Constitution of India. The new draft Bill of 2017 contains the provisions which intend to protect the right to privacy of an individual. It permits for processing of DNA samples only for 13 positions which would not violate in any manner the privacy of a person and will never go beyond the identification of an individual and therefore, it eliminates the apprehension of revealing genetic traits and thus the DNA Bill of 2017 proves to be in consonance and in conformity with the aforesaid provisions of law

Suggestions

- 1) The new draft Bill of 2019 must contain the provision for automatically removing the record of the acquitted persons from the Data Banks.
- 2) The Bill of 2019 must specify the period in which the DNA records must be retained for different categories in the Data Bank.
- 3) A regular test of quality check must be conducted to avoid any theft and contamination of the DNA sample/record.
- 4) The trainings should be provided to the people who are engaged in storing the DNA samples.
- 5) More clear provisions with respect to voluntary consent should be brought into the new bill.
- 6) The provisions for storing the sample for civil matters need more enlightenment.
- 7) It should be specified which part of an individual's DNA can be analyzed for ascertainment of the identity.

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