

A STUDY ON THE VALIDITY OF DNA PROFILING IN THE FORM OF EVIDENCE

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ABSTRACT:

DNA profiling is a technique by which an individual can be identified at molecular level. The use of DNA evidence in criminal investigation has grown in recent years. DNA testing has helped law enforcement identify criminals and solve difficult crime such as rape, murder and murder with rape etc. The potential of DNA typing has made possible the resolution of immigration problems and complicated paternity testing when the father is not available. Rapid identification of individuals in mass-disaster (man- made such as explosions) using DNA typing has also been possible .computerized DNA database for the identification of criminal offenders have been created in some countries. DNA is a powerful investigative tool because, with the exception of identical twins, no two people have the same DNA. In other words, the sequence or order of the DNA building blocks is different in particular region of the cell, making each person's DNA unique. No doubt, DNA has great importance in criminal investigation cases such as-murder, rape, disputed paternity, man-made disaster etc., still there is no specific provisions under Indian Evidence Act-1872 and Code of Criminal Procedure -1973 to manage forensic science issues. This paper examines the science of DNA identification and its use during criminal investigations and in criminal proceedings, including criminal trials, appeals and post-conviction proceedings. It describes the main benefits and costs of the increasing role of DNA identification in the criminal justice system with special emphasis to India. We hope that the challenges of DNA technologies will be solve in future.

KEYWORDS: DNA, Evidence, Validity, Investigation tool, DNA testing.

CHAPTER I

INTRODUCTION

DNA (Deoxyribonucleic acid), sometimes called the building block or genetic blueprint of life, was first described by the scientists Francis H. C. Crick and James D. Watson in 1953. Crick and Watson identified the double-helix structure of DNA, which resembles a twisted ladder, and established the role of DNA as the material that makes up the genetic code of living organisms. The pattern of the compounds that constitute the DNA of an individual life-form determines the development of that life-form. DNA is the same in every cell throughout an individual's body, whether it is a skin cell, sperm cell, or blood cell. With the exception of identical twins, no two individuals have the same DNA blueprint. In DNA analysis for a criminal investigation, using highly sophisticated scientific equipment, first a DNA molecule from the suspect is disassembled, and selected segments are isolated and measured. Then the suspect's DNA profile is compared with one derived from a sample of physical evidence to see whether the two match. If a conclusive non-match occurs, the suspect may be eliminated from consideration. If a match occurs, a statistical analysis is performed to determine the probability that the sample of physical evidence came from another person with the same DNA profile as the suspect's. Juries use this statistical result in determining whether a suspect is guilty or innocent. [\(Judge\) 2018](#)

The admissibility of the DNA evidence before the court always depends on its accurate and proper collection, preservation and documentation which can satisfy the court that the evidence which has been put in front it is reliable. There is no specific legislation which is present in Indian which can provide specific guidelines to the investigating agencies and the court, and the procedure to be adopted in the cases involving DNA as its evidence. Moreover, there is no such specific provision under Indian Evidence Act, 1872 and Code of Criminal Procedure 1973 to manage science and technology issues. Due to lack of having any such provision, an investigation officer has to face much trouble in collecting evidences which involves modern mechanism to prove the accused person guilty. DNA analysis has become a common form of evidence in criminal trials. It is also used in civil litigation, particularly in cases involving the determination of Paternity of Identity. Therefore the aim of the study is to analyse

the validity and admissibility of DNA profiling in the form of evidence under the Indian Evidence Act.

HYPOTHESIS:

- **H₀:** DNA is not admitted as an evidence in criminal investigation under Indian Evidence Act, 1872.
- **H_a:** DNA is admitted as an evidence in criminal investigation under Indian Evidence Act, 1872.

MATERIALS AND METHODS:

This paper is done on the basis of doctrinal research. A doctrinal research is done using research involving jurisprudential analysis of an issue, analysis of statute, historical or comparative growth of any legal doctrine or legal system, examination of any legal concept through case laws or legal theories, regulatory issues in corporate or IPR regimes, locating and weighing an idea in the constitutional context or human rights context, enforcement issues in various jurisdictions, international laws affecting the relevant domestic issue etc. are some examples of some broad areas of research which are possible through doctrinal research design.

CHAPTERIZATION:

- Chapter 1 deals with the **Introduction**, where the science of DNA with legal aspects has been discussed.
- Chapter 2 deals with the **DNA Profiling and Indian Legal System**, where the use of DNA in the Indian legal system has been discussed.
- Chapter 3 deals with the **Legal position of forensic techniques**, where the use of new forensic science and technology to find out criminals in the Indian legal system has been discussed.
- Chapter 4 deals with the **Admissibility of DNA as evidence in USA and in England**, where a comparative study has been done with the stand of DNA in the other countries as well as India.
- Chapter 5 deals with **Suggestion & Conclusion**, where the researcher has suggested various ways in which the laws can be implemented in more efficient way.

CHAPTER II

DNA PROFILING AND INDIAN LEGAL SYSTEM

DNA test provides perfect identity and is admissible¹. The admissibility of the DNA evidence before the court always depends on its accurate and proper collection, preservation and documentation which can satisfy the court that the evidence which has been put in front of it is reliable. There is no specific legislation which is present in India which can provide specific guidelines to the investigating agencies and the court, and the procedure to be adopted in the cases involving DNA as its evidence. Moreover, there is no specific provision under Indian Evidence Act, 1872 and Code of Criminal Procedure, 1973 to manage science, technology and forensic science issues. Due to lack of having any such provision, an investigating officer has to face much trouble in collecting evidences which involves modern mechanism to prove the accused person guilty. Section 53 of Code of Criminal Procedure 1973 authorizes a police officer to get the assistance of a medical practitioner in good faith for the purpose of the investigation. But, it doesn't enable a complainant to collect blood, semen etc. for bringing the criminal charges against the accused. The amendment of Cr. P. C. by the Cr. P. C. (Amendment) Act, 2005 has brought two new sections which authorize the investigating officer to collect DNA sample from the body of the accused and the victim with the help of medical practitioner. These sections allow examination of person accused of rape by medical practitioner and the medical examination of the rape victim respectively. But the admissibility of these evidences has remained in a state of doubt as the opinion of the Supreme Court and various High Courts in various decisions remained conflicting. Judges do not deny the scientific accuracy and conclusiveness of DNA testing, but in some cases they do not admit these evidences on the ground of legal or constitutional prohibition and sometimes the public policy. There is an urgent need to re-examine these sections and laws as there is no rule present in the Indian Evidence Act, 1872 and Code of Criminal Procedure, 1973 to manage science and technology issues. Many developed countries have been forced to change their legislation after the introduction of the DNA testing in the legal system. There are certain provisions which are present in the Indian Evidence Act, 1872 such as Section 112 which determine child's parentage and states that a child

¹Pantangi Balarama Venkata Ganesh vs. state of Andhra Pradesh, 2003 crlj 4508(AP)

born in a valid marriage between a mother and a man within 280 days of the dissolution of the marriage, and the mother remaining unmarried shows that the child belongs to the man, unless proved otherwise but again no specific provision which would cover modern scientific techniques. DNA analysis is of utmost importance in determining the paternity of a child in the cases of civil disputes. Need of this evidence is most significant in the criminal cases, civil cases, and in the maintenance proceeding in the criminal courts under Section 125 of the Cr. P. C.²

The introduction of the DNA technology has posed serious challenge to some legal and fundamental rights of an individual such as “Right to privacy”, “Right against Self-incrimination”. And this is the most important reason why courts sometimes are reluctant in accepting the evidence based on DNA technology. Right to Privacy has been included under Right to Life and Personal liberty or Article 21 of the Indian Constitution, and Article 20(3) provides Right against Self- Incrimination which protects an accused person in criminal cases from providing evidences against himself or evidence which can make him guilty. But it has been held by the Supreme Court on several occasions that Right to Life and Personal Liberty is not an absolute Right. In *Govind Singh v. State of Madhya Pradesh*,³ Supreme Court held that a fundamental right must be subject to restriction on the basis of compelling public interest. In another case *Khark Singh v. state of Uttar Pradesh*,⁴ Supreme Court held that Right to privacy is not a guaranteed right under our Constitution. It is clear from various decisions which have been delivered by the Supreme Court from time to time that the Right to Life and Personal Liberty which has been guaranteed under our Indian Constitutions not an absolute one and it can be subject to some restriction. And it is on this basis that the constitutionality of the laws affecting Right to Life and Personal Liberty are upheld by the Supreme Court which includes medical examination. And it is on the basis that various courts in the country have allowed DNA technology to be used in the investigation and in producing evidence. To make sure that modern technologies can be used effectively, there is an urgent need of a specific legislation which would provide the guidelines regulating DNA testing in India.

² <http://jlsr.thelawbrigade.com/index.php/2017/06/16/admissibility-of-dna-in-indian-legal-system/>

³ A.I.R.1975 S.C.1378: 1975 Cr.L.J.1111.

⁴ A.I.R.1963 S.C.1295: 1963 (2) Cr.L.J.329.

The refusal of the Supreme Court to dismiss the Delhi High court's decision in **Rohit Shekhar v. N.D.Tiwari**,⁵ ordering veteran congress leader N.D. Tiwari to undergo the DNA test is very important from the viewpoint of the admissibility of such evidence. In this case, Rohit Shekhar has claimed to be the biological son of N.D. Tiwari, but N.D. Tiwari is reluctant to undergo such test stating that it would be the violation of his Right to privacy and would cause him public humiliation. But Supreme Court rejected this point stating when the result of the test would not be revealed to anyone and it would be under a sealed envelope, there is no point of getting humiliated. Supreme Court further stated that we want young man to get justice; he should not be left without any remedy. It would be very interesting to see that how courts in India would allow the admissibility of DNA technology in the future.⁶

DNA in Civil Cases:

The call for DNA test on civil side is generally made to settle the paternity issue involved in cases of divorce, maintenance, inheritance and succession etc. It is noteworthy that Section 112 provides for the legitimacy of a child born during wedlock and the only ground to rebut this presumption is non access of the husband. Thus at one point of time it was an issue before the court dealing with paternity issues whether such test could be ordered.[\(Gill 2014\)](#)

This issue was discussed at length in **Gautam Kundu vs. Bengal**,⁷ where the division bench of apex court, inter alia, held as follows:- —

(1) *That courts in India cannot order blood test as matter of course*

(2) *There must be a strong prima facie case in that the husband must establish non -access in order to dispel the presumption arising under section 112 of the Evidence Act*

⁵ MANU/DE/3701/2010: 2011(121) DRJ 563.

⁶ International Journal of Humanities and Social Science Invention ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714 www.ijhssi.org Volume 2 Issue 7| July 2013| PP.15-21 www.ijhssi.org “The Role of DNA in Criminal Investigation– Admissibility in Indian Legal System and Future Perspectives”

⁷ (1993) 3 SCC 418

(3) *No one can be compelled to give sample of blood for analysis.*

However subsequently a full bench of the Supreme Court in *Sharda v Dharmpal*,⁸ considered the power of a matrimonial court to order such test and clarified that Goutam Kundu (supra) is not an authority for the proposition that under no circumstances the Court can direct that blood tests be conducted. It, having regard to the future of the child, has, of course, sounded a note of caution as regard mechanical passing of such order. The Court after hefty discussion summed up three significant conclusions,

1. A matrimonial court has the power to order a person to undergo medical test.
2. Passing of such an order by the court would not be in violation of the right to personal liberty under Article 21 of the Indian Constitution.
3. However, the Court should exercise such a power if the applicant has a strong prima facie case and there is sufficient material before the Court. If despite the order of the court, the respondent refuses to submit himself to medical examination, the court will be entitled to draw an adverse inference against him.

In *Bhabani Prasad Jena v. Convener Secretary, Orissa State Commission for Women and Another*,⁹ the Supreme Court sketched the approach for courts while directing DNA test. The apex court observed, —In a matter where paternity of a child is in issue before the court, the use of DNA is an extremely delicate and sensitive aspect. One view is that when modern science gives means of ascertaining the paternity of a child, there should not be any hesitation to use those means whenever the occasion requires. The other view is that the court must be reluctant in use of such scientific advances and tools which result in invasion of right to privacy of an individual and may not only be prejudicial to the rights of the parties but may have devastating effect on the child. Sometimes the result of such scientific test may bastardise an innocent child even though his mother and her spouse were living together during the time of conception. In our view, 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

⁸ (2003) 4 SCC 493

⁹ (2010) 8 SCC 633

exercise its discretion only after balancing the interests of the parties and on due consideration whether for a just decision in the matter, DNA is eminently needed. DNA in a matter relating to paternity of a child should not be directed by the court as a matter of course or in a routine manner, whenever such a request is made. The court has to consider diverse aspects including presumption under Section 112 of the Evidence Act; pros and cons of such order and the test of 'eminent need' whether it is not possible for the court to reach the truth without use of such test.

It would be worth to mention the judgment of the Delhi High Court in *Shri Rohit Shekhar v. Shri Narayan Dutt Tiwari and Anr*,¹⁰ in which the court has gone a step further. In peculiar facts of this case, the petitioner, who was born during a subsisting marriage of her mother, asked for DNA test on the respondent, claiming the latter to be his biological father. The Court has ordered DNA test on the respondent a third party to marriage, primarily recognizing, from various international covenants, the right of a child to know of his biological antecedents. However the Court has been cautious to judgments of the Hon'ble Supreme Court in *Sharda* (supra) and *Bhabani Prasad Jena* and justified on reasons a prima facie case for ordering DNA test.

In the case of *Anita M/O Eknath katkar vs. Add.commissioner kashik & ors*,¹¹ the Supreme Court in this case ordered the DNA and acted on the report and dismiss the petition. The child got relief and court held that the respondent is the mother of petitioner.

CHAPTER III

LEGAL POSITION OF FORENSIC TECHNIQUES

Legal position—In India the legal position of forensic technique has to pass through a three-fold litmus test viz.

¹⁰ Ibid.7

¹¹ Civil Appeal number;- 5588 of 2017, DOJ 25 April 2017.

1. What is the constitutional validity of such test?

The constitutional validity can be challenged on the basis of Article 20 (3) of the Indian Constitution which provides that —No person accused of an offence shall be compelled to be a witness against oneself. The answer can be drawn from *State of Bombay Vs Kathikalu*,¹² where it was held by the Hon'ble Court that giving the specimen and information for forensic examination is just like providing relevant facts within the meaning of Sections 9 & 11 of Evidence Act and it does not fall under the parameter of evidence against one self.

2. What is the evidential value of the forensic information obtained from the experts?

A general rule is that opinion of a person having special skill or knowledge in a particular field shall be admissible to the court of law (Article 45 Indian Evidence Act). Thus the expert assists and determines fact in issue and relevant fact to furnish information to judicial officers. Though it is not a conclusive proof but it can be used as corroborative evidence.[\(Taupin 2013\)](#)

In *Madan Gopal Kakkad vs. Naval Dubey and Another*,¹³ it was held that opinion of expert is admissible.

In *Machindra vs. Sajjan Galpha Rankhamba*,¹⁴ has observed that an expert opinion should be demonstrative and supported by conversing reasons.

3. In the absence of any concrete legislation what stand is taken by judiciary regarding admissibility of DNA forensics?

At present in India there is no concrete law to govern issues of admissibility of forensic technique. Some sections i.e. Sections 53, 54, 53(A), 164(A) of Code of Criminal procedure govern science and technology issue to certain extend.

¹² AIR 1961 SC 1808

¹³ 1992 AIR SCW 1480

¹⁴ Criminal appeal number 1794 of 2013,D.O.J April 19,2017.J P.C Ghose and R.F.Nariman

Therefore it is completely left on judicial discretion either to permit DNA test or to deny any such request. Such a condition creates confusion and uncertainty over subordinate judiciary. Issues of concern and privacy of right is also dealt with.

In *Asit Kapoor vs. Union of India*,¹⁵ it was held that no party to a legal proceeding can be compelled for any scientific test against his/her will as it has effect of infringing upon his right to privacy. Some important guidelines are issued in *Gautama Khandu vs. State of West Bengal & Anr*,¹⁶ which is summed up as follows:

- Matrimonial court has power to order a person to undergo some medical test.
- Such order wouldn't be considered as violation of Right to personal liberty enshrined under Article 21 of Indian Constitution.
- Such a power is exercise by court when there is strong prima facie case and sufficient material before the court. If the respondent refuses to medical examination despite of the order of the court, then court will be entitled to draw adverse inference against him. Thus Indian judiciary had adopted forensic evidence but it is legislative machinery which is lagging behind in assimilating scientific development which plays important role not only to solve high profile cases but rape cases and post-conviction matter also

Application in evidence:

Coming to the application in criminal cases, DNA tests can be effectively used in criminal cases for the following purpose. First, it assists in positively identifying the perpetrators of crime, particularly in cases of sexual assault and homicide where identification is often a central issue. Second, to identify the remains of victims of violent crimes. The most suitable application of DNA tests for these purposes is evident in two popular cases namely, *Santosh Kumar Singh v. State*,¹⁷ (establishing commission of rape by the appellant) and *Surendra Koli v State of U.P.*,¹⁸ (to identify dead bodies of victims).

¹⁵ AIR 2004 Del 2003

¹⁶ AIR 1993 SC 2295

¹⁷ (2010) 7 SCC 263

Statutory Recognition: It should be noted that the Explanation to Sections 53, 53A and 54 of the Code of Criminal Procedure, 1973 was amended in 2005 to clarify the scope of medical examination of the accused, especially with regard to the extraction of bodily substances, and in particular to use of DNA Profile technique.

In *Krishna Kumar Malik v State of Haryana*,¹⁹ the Supreme Court in a rape case observed, —Now, after the incorporation of Section 53 (A) in the Criminal Procedure Code, w.e.f. 23.06.2006, brought to our notice by learned counsel for the Respondent-State, 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 provision in the Cr.P.C. prosecution could have still resorted to this procedure of getting the DNA test or analysis and matching of semen of the Appellant with that found on the undergarments of the prosecutrix to make it a fool proof case.

CHAPTER IV

ADMISSIBILITY OF DNA AS EVIDENCE IN USA AND IN ENGLAND

AMERICA

IN USA, all scientific evidence in criminal trials including evidence derived from DNA identification analysis, must satisfy the test of admissibility in effect in a particular jurisdiction. In general, courts use of two tests. The so-called *Frye test*, which was pronounced by the U.S. Circuit Court for the District of Columbia in *Frye v. United States*,²⁰ or one of its variations, is used in a majority of jurisdictions. Under the Frye test, a novel scientific technique must have gained general acceptance the relevant scientific community before it is admitted by the court. The second rule follows the basic relevancy standard of the federal rule of evidence and is used in a majority of state jurisdictions. For admissibility under the federal rules, scientific evidence must have some relevance to the issues in the case, and its probative value must outweigh the

¹⁸ (2011) 4 SCC 80

¹⁹ (2011) 7 SCC 130

²⁰ (293 F. 1013, 1014 (D.C. Cir. 1923)

potential *for* prejudice. In *Daubert v. Merrell Dow Pharmaceuticals*,²¹ the U.S Supreme Court ruled that the federal rules of evidence have replaced the *Frye* test in federal court trials. Additionally, the court defined a new federal standard under the rules, the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable. Determining reliability entails a preliminary assessment of —whether the reasoning or methodology underlying the (expert) testimony is scientifically valid and whether the reasoning or methodology can be applied properly to the facts in issue.

The court provided a nonexclusive list of factors that may be used to determine scientific validity: (1) whether a theory or technique can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of errors in using a particular scientific technique and the existence and maintenance of standards controlling the technique operation; and (4) whether the theory or technique has been generally accepted in the particular scientific field. While the *Daubert* test applies to federal courts, most state courts continue to follow the *Frye* test.

In general, state and federal courts have increasingly accepted DNA evidence as admissible. In general, courts that have used the *Daubert* standard have been more likely to admit DNA evidence, although many jurisdictions that have relied on *Frye* have also permitted it. Nearly all cases, in which DNA evidence was ruled inadmissible, have been in jurisdictions that have used *fyre*. In *People v. Castro*,²² the New York Supreme Court in a 12 week pretrial hearing exhaustively examined numerous issues relating to the admissibility of DNA evidence. Castro was accused of murdering his neighbour and her 2-year old daughter. A blood stain on Castros watch was analysed for a match to the victim. The court held: DNA identification theory and practice are generally accepted among the scientific community. DNA forensic identification techniques are generally accepted by the scientific community. Pretrial hearings are required to determine whether the testing laboratorys methodology was substantially in accord with

²¹ 509 US 579, 113 S.C. 2786 (1993)

²² (1985) 38 Cal.3d 301 , 211 Cal.Rptr. 719; 696 P.2d 111

scientific standards and produced reliable results for jury consideration. The *Castro* ruling supports the proposition that DNA identification evidence of exclusion is more presumptively admissible than DNA identification evidence of inclusion. In *Castro*, the court ruled that DNA test could be used to show that blood on Castros watch was not, but could not be used to show that the blood was that of his victims.

ENGLAND

England is widely recognized as having the most effective and efficient approach to the use of DNA technology in the world. DNA technology and DNA data basing have been central to the process of criminal investigation since the establishment of the National DNA Database in 1995, England has become a world leader in discovering innovative ways to use DNA to identify suspects, protect the innocent to convict the guilty.

CHAPTER V

SUGGESTION & CONCLUSION

Thus DNA test as evidence of identity has come to be recognized in our judicial system.. **James D Watson** one of the discoverers of DNA who was awarded the 1962 Nobel Prize for medicine for the same, has made the following observations about handling of DNA evidence, Keeping track of molecular evidence, as opposed to knives and guns, can be an especially demanding chore; scrapings from a side walk may be visually indistinguishable from scrapings from a gatepost, and subsequently extracted DNA sample will doubtless look even more alike when placed in a small plastic test tubes.

Thus although DNA is an exact science its use in evidence has its concerns, which aggravate in Indian scenario where collection of evidence is shrouded with lack of promptness and conduct of medical test always remains under a question mark. The law, it is said, walks a respectable distance behind Science, but courts try to keep abreast. It is submitted that the court while taking help of such evidence need to be careful so that justice is secured to both the parties. The Supreme Court has come up with observations on the civil side directing courts to be extremely careful while ordering DNA test. However there is void of such guidelines or

observation on the criminal side where the degree of guilt and punishment both is high and this is one area which requires our attention.

The **researchers found some lacunae** in conducting these test on accused. The author has opined that if our system over comes these drawback then this test can become good weapon in the arsenal of investigating agencies to bring justice be done. Some of the suggestions are follows:-

- Legislators should take necessary step to legislate a uniform and national level law on conducting DNA tests and its admissibility in court rooms. Because in the absence of proper statutory recognition a situation of confusion and uncertainty prevails over investigating agencies and subordinate judiciary.
- To amend existing laws so as to incorporate provisions regarding permitting blood test for generating DNA profiling.
- To regulate procedure in Forensic laboratories to increase reliability on its report. Labs should adhere to high quality standard; regularly participate in proficiency test, use of splitting method and uniform standard for DNA testing be adopted.
- A national commission be created to regulate and monitor DNA profiling laboratories. Process and acceptability to post conviction DNA testing be incorporate in Indian laws. DNA samples should not be collected as a matter of routine and they should be recommended when information is relevant to a specific crime in question. DNA samples should be collected from suspect only after prior approval of a Judge/ Magistrate.
- Proper training is provided to investigating agencies to overcome contamination issue. Proper chain of custody should be maintained. Proper training and sensitization of legal fraternity is required so as to overcome issues like prosecutor's fallacy.

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