

AN ANALYSIS ON DNA TECHNOLOGY UNDER THE INDIAN JUDICIAL SYTEM

Written by *Nilakhi Barman** & *Ashutosh Ranjan Srivastava***

** 4th year BA LLB Student, Symbiosis law School, Hyderabad (Symbiosis International University, Pune)*

*** 4th year BA LLB Student, Symbiosis law School, Hyderabad (Symbiosis International University, Pune)*

ABSTRACT

The forensic DNA analysis is commonly used to detect the criminal activities but, it is also used in civil cases to establish the paternity of disputed offspring. The majority of cases regarding disputed paternity arise in the context of affiliation orders, divorce proceedings and questioned legitimacy. 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 with rape etc. Rapid identification of individuals in mass-disaster 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 the order of the DNA building blocks is different in particular region of the cell, making each person's DNA unique. DNA has great importance in criminal investigation cases as well. This paper examines the science of DNA identification and its use during criminal as well as civil proceedings. There is also analysis of the laws concerned with different country.

Keywords- Identification, Self-incrimination, Privacy, Constitutional Validity, Evidentiary Value.

INTRODUCTION

Today, crime is being committed in more sophisticated methods and in an organized manner. In addition, new types of crime are continuously taking place. To efficiently handle with such situations, investigative authorities also rely on systematized and scientific investigative methods. DNA technology is one of the investigative tools in recent times after the pioneering work done by Professor Sir Alec Jeffrey's in Lichester University, London in 1985. Before 1980's, DNA was used for scientific research and scientific purpose only. Now, it has gained a prominent role in forensic science. Forensic science, as a scientific method, working within the constraint of the legal system, affords guidelines to civil and criminal investigations besides giving accurate information about all the attending features of identification of criminals. The origin of DNA technology improves the status of forensic science from passive to active key player in the administration of justice.

DNA or Deoxyribonucleic acid is a genetic blueprint of every human being. The chemical component of DNA in the cells of each individual is unique. This is the sole determining factor to identify one separately from another except the genetically identical twins. The innovation of the said science can be used to identify criminals with an incredible accuracy when biological evidence is recovered at the crime scene. At the same time it can also be used to exonerate persons mistakenly accused or convicted of crimes. For that reason, DNA technology is considered to be the best one to find out the truth. Former Justice Markendey Katju, in his book "Law in the Scientific Era"¹ said: *"Science has, no doubt, existed since ancient times. But in earlier age, science (i.e. the study of nature's law) and technology (i.e. the application of these laws for producing socially useful goods) were almost independent activities, having no interlink. Engineering developed at that time largely independent of science and was guided by experience and tradition. It is only in the modern age that science and technology have become closely interlinked, and the gap between them has narrowed down. The result of scientific discoveries and technical inventions accelerate the rapid progress of both science and technology and the radical transformation of society. Moreover, in the modern scientific era, subjective knowledge based on experience is largely replaced by objective experimental deterministic knowledge that minimizes chance and probability factors and ensure certainty in our lives."*

APPLICATION OF DNA ANALYSIS TECHNIQUE

Deoxyribonucleic Acid (DNA) technique is increasingly very important to make sure correctness and fairness in the criminal justice system. News stories praising the triumphant application of DNA to resolve offence flourish all through the World. Advancement in science now provides law enforcement agencies with an unparalleled opportunity to conclusively identify those suspected of having committed the crime. DNA and other forensic testing have revolutionized investigation of crime in just 5 years. DNA, the common abbreviation for deoxyribonucleic acid is used with increasing frequency in the criminal justice system to determine the guilt of innocence. Improvement of DNA testing have also provided a powerful tool to the law enforcement to link suspect even to very old murders, provided that DNA evidence has been properly preserved.

The application of DNA technology ensures fairness in the criminal justice system. In fact, the usefulness of DNA technology has played an important role in the investigation of crime. Some of the uses are: (a) Identification of convicts in sexual assault cases, (b) Identification of convicts in murder cases, (c) Identification of paternity and maternity of the child, (d) Identification of mutilated remains, (e) General identification of criminals, and (f) Immigration purposes.ⁱⁱ

(a) Identification of convicts in sexual assault cases: DNA evidence is very useful in sexual assault cases. Immediately after the incident of rape, the biological evidence recovered at the crime spot or the sample collected from the victim's body is compared with that of the samples collected from the suspect through the use of DNA technology. The results of comparison may help to establish whether the suspect has committed the rape or not. If the suspect has committed rape, it can be established with a greater accuracy.

(b) Identification of convicts in murder cases: In murder cases, the DNA technology is used to identify the real culprit who has committed the crime. The accused who committed murder may often leave some biological evidence at the crime scene like blood stains, hair roots, and bodily fluids. In many times blood stained articles like weapon, sword, and blood stained clothes of the victim may be seized from the possession of the accused. All these material evidences are useful for DNA analysis, which indicates the presence of the accused on the crime spot.

(c) Identification of paternity and maternity of the child: Generally all persons inherit DNA pattern from their biological parents. If the paternity or the maternity of the child is disputed, the mere comparison of DNA obtained from the father or the mother with that of the child can offer a foolproof with a greater accuracy.

And sometimes the female baby is exchanged for a male baby in hospitals. In such a case, DNA test solves the problem. The real parents of the baby can be identified by DNA test. Similarly, the identification of a missing person or a deceased person can also be identified through the use of DNA Technology. For instance in India, DNA identification was made to identify the parentage of children missing from their parents during the tsunami attacks in December 2004.

(d) Identification of mutilated remains: In India, DNA technology was used to identify the mutilated remains of the victim and the suspect who died in Rajiv Gandhi Assassination case in 1992. It was also used to identify bodies recovered from mass graves in Gujarat, after the Hindu-Muslim riots in 2002. It was also used to establish the identity of victims who died in twin tower attacks in the United States of America in 2001.

(e) General identification of criminals: Sometimes the police may arrest many persons on the suspicion that the crime has been committed by any one of them. During that occasion, some biological evidence recovered by the police at the crime spot or from the victim can be compared with suspects through the use of DNA technology in order to identify the real culprit. In fact, DNA technology is not only to identify the real culprit but also to exculpate the innocent suspect if he/she is not indulged in crime.

(f) Immigration purposes: DNA testing is often utilized in family based immigration cases where a United States resident or citizen wishes to sponsor a relative for admission into the United States. In such cases, the sponsor and their relatives are required to prove their biological relationship through DNA testing (paternity test, maternity test, and family relationship test). DNA testing ensures that international applicants who are fraudulent can be identified and prevented from entering the nation. Most developed countries use DNA test for the support of immigration process.

Thus DNA technology is of immense use under the criminal justice system and it is being effectively used all over the world. In the criminal investigation, DNA is mainly used to link

the criminal with a crime. And moreover, DNA is considered to be a powerful weapon against a crime because of its objectivity, scientific accuracy, infallibility, and impartial character.

In case of **Bachubai Khasiya v. state of Gujarat & Anotherⁱⁱⁱ**, it was held by the court that the science of DNA is at a developing stage and when the random occurrence Ratio is not available for Indian society, it would be risky act solely on a positive DNA report, because only if the DNA profile of the accused matches with the fetus, it cannot be considered as conclusive proof of paternity. **“Contrarily, if it is solitary piece of evidence with the possibility of involvement of the accused the offence”**.

In Patingi Balaram Venkata Ganesh v. State of Andhra Pradesh^{iv}, it was alleged that the accused and the co-accused had fired at the deceased. Witnesses identified the assailant as wearing a pink shirt and testified that the accused had been injured during the firing. The pistol and the blood stained pink shirt were recovered and blood found on the shirt to match with the blood of the accused as per as DNA. The court relied on all the available evidence including the DNA evidence, found him guilty.

LEGISLATIONS IN INDIA

➤ CONSTITUTION OF INDIA

- **Article-51A: Fundamental Duties**

The Constitution of India by Article 51A the parliament is legislatively competent to make laws with respect to the Union Agencies and Institution for professionals, vocational or technical training, promotion of special studies and research, or scientific or technical assistance in the investigation or detection of crimes and with respect to coordination and determination of standards in institution for higher education or research and scientific and technical Institution.

- **Article- 20(3): Right to Self-Incrimination**

Article 20(3) of the Indian Constitution provides that, no person accused of any offence shall be compelled to be a witness against himself. Article 20(3) contemplates forcing testimony is thereby incriminating oneself in a crime.

Therefore police cannot forcibly extract confession. The term 'witness' in this clause means source of information thereby incriminating himself. In **Ramalal Bhogilal Shah v. V.K. Guha**^v, the Supreme Court held that protection is only against the person being compelled to be a witness against himself. It doesn't mean that he need not give information of matters and he also cannot deny DNA Test if it is properly performed under the Order and supervision of respective courts.

- **Article 21 of the Indian Constitution- Right to Privacy**

It states that, no person shall be deprived of his right to life and personal liberty except according to the procedure established by law.

Thus, in the light of **Article 21**, a person's right to life or personal liberty cannot be taken away by the state except in accordance with a procedure established by law. The Supreme Court in **Menaka Gandhi v. Union of India**^{vi}, held that a person can be deprived of his life and personal liberty if two conditions are complied with:

- i. There must be a valid law.
- ii. There must be a procedure established by that law, provided that the procedure is just, fair and reasonable.

In **Thongorani Alias K. Damayanti v. State of Orissa And Ors**^{vii} while discussing the direction to conduct DNA test by collecting blood sample of the accused whether would it infringe the rights of the accused rights under Articles 20(3) and 21 of the Constitution of India, the Orissa High Court ruled that: The only restriction for issuing a direction to collect the blood sample of the accused for conducting DNA test would be that before passing such a direction, the Court should balance the public interest vis-à-vis the rights under Articles 20(3) and 21 of the Constitution in obtaining evidence tending to confirm or disprove that the accused committed the offense concerned.

While balancing this interest, consideration of the following matters would be relevant.

- i. The extent to which the accused may have participated in the commission of the crime;
- ii. The gravity of the offense and circumstances in which it is committed ;

- iii. Age, physical and mental health of the accused to the extent they are known;
- iv. Whether there is less intrusive and practical way of collecting evidence tending to confirm or disprove the involvement of the accused in the crime.
- v. The reasons, if any, for the accused for refusing consent

➤ **INDIAN EVIDENCE ACT, 1872**

Indian Evidence Act (hereinafter referred to as IEA) does not directly specify the use or applicability of DNA technology. The Sections which take into consideration the use and application of DNA technology directly or indirectly are as under:

- **Section 9 of IEA** deals with the facts which establish the identity of anything or person whose identity are relevant in so far as they are necessary for that purpose.
- **Section 45 of the IEA** deals with the expert evidence when the court has to form an opinion on any point of foreign law or science or art or as to identity of handwriting and finger impression.
- **Section 112 of IEA** deals with the provision of legitimacy of child born and at the same time there is no access between husband and wife is established. The obvious purpose behind this section would be to prevent the unnecessary bastardization of illegitimate children. The problem that is been referred to by this section has come up for consideration by the supreme court in the case of **Kamti Devi v. Poshiram**^{viii}. In the facts of this case, the respondent was the husband of the appellatant. Fifteen years after the marriage, the appellatant gave birth to a child. The respondent filed a civil suit for declaration that he was not the father of the said child. The Supreme Court opined that to conduct a DNA test to clarify such question. The DNA test reports has indicated that respondent was not the father of the child but that is not enough to rebut the conclusiveness of the marriage. The DNA analysis has played a vital role in getting the grab of the real father of the child.^{ix}

➤ **CRIMINAL PROCEDURE CODE, 1973**

- **Section 125 of the Criminal Procedure Code (Maintenance of Wife and Children):** DNA test is very helpful in determining the legitimacy of child

when dealing with the case of maintenance because it is often a contention by the husband that the child born to his wife is illegitimate and not entitled to maintenance. DNA test has clarified many such issues without violating any of the substantive or procedural provision.

- **Section 53 of Criminal Procedure Code** makes a provision for the examination of the person of the accused by a registered medical practitioner at the request of a police officer not below the rank of Sub-Inspector in order to ascertain the fact which may afford evidence and also to use such force as is reasonably necessary for that purpose. This is a part and parcel of the process of investigation

LEGAL POSITION IN INDIA

In India the legal position of forensic technique has to pass through a four-fold litmus test.

- *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 v. Kathikalu^x** 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 Section 9 & 11 of Evidence Act and it do not fall under the parameter of evidence against oneself.

- *What is the evidential value of the forensic information obtained from the experts?*

A general rule is that opinions of a person having special skill or knowledge in a particular field shall be admissible to the court of the law (Article 45 Indian Evidence Act). Thus the expert assists and determines fact in issue and relevant fact to furnish information to

judicial officers. It can be used as corroborative evidence. In **Madan Gopal Kakkad v. Naval Dubey and Another^{xi}** it was held that opinion of expert is admissible.

- *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 procedures govern science and technology issue to certain extent.

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. In **Asit Kapoor v. Union of India**^{xii} 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.

➤ *Why DNA Analysis a valuable evidence?*

DNA is a potential means because each person's DNA is different from others except identical twins.

- DNA remains the same all through the lifetime of a person.
- It does not change with age.
- No matter from which tissue one isolates DNA – brain, hair, semen, blood, bone, sputum, urine, skin, kidney or any other tissue, all give the same DNA fingerprinting pattern in an individual.
- The composition of a person's DNA does not change from cell to cell, except in egg and sperm cells. These cells have half from the complement of DNA present in other body cells.
- DNA evidence can solve particularly difficult cases where all other investigative techniques have failed like interrogation, sometimes witness turned into hostile, etc. Even the sample collected from the crime scene will help to solve this problem if the suspect really commits the crime. The sample collected from the crime scene if it be of suspect, it definitely matches with his sample. If the sample collected from the crime scene is other than the suspect, it does not match with his sample. The DNA evidence is either to acquit the person or to convict the person.

In **Gautama Khandu v. State of West Bengal & Anr**^{xiii}, 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 exercised by court when there is strong prima facie case and sufficient material before the court. If the respondent refuses to undergo medical examination despite the order of the court, then court will be entitled to draw adverse inference against him.

DNA AND SELF-INCRIMINATION

A Constitution Bench of the Hon'ble Supreme Court, in **Selvi v. State of Karnataka**^{xiv} while testing the validity of DNA tests on the anvil of Article 20(3) of the Constitution of India, made following observations, *“The matching of DNA samples is emerging as a vital tool for linking suspects to specific criminal acts. It may also be recalled that as per the majority decision in Kathi Kalu Oghad the use of material samples such as fingerprints for the purpose of comparison and identification does not amount to a testimonial act for the purpose of Article 20(3). Hence, it does not face constitutional hurdles in the Indian context”*.^{xv}

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. Secondly, to identify the remains of victims. The most suitable application of DNA tests for these purposes is evident in two popular cases namely, **Santosh Kumar Singh v. State**^{xvi} (establishing commission of rape by the appellant) and **Surendra Koli v. State of U.P.**^{xvii} (to identify dead bodies of victims).

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, with regard to the use of DNA Profile Technique.

In **Krishna Kumar Malik v. State of Haryana**^{xviii}, the Supreme Court observed, - Now, after the incorporation of Section 53(A) in the Criminal Procedure Code, it has become necessary for the prosecution to go in for DNA test in such type of cases.

POST-CONVICTION DNA TESTING

The phenomenon of exoneration as of wrongly convicted prisoner through post-conviction DNA Testing has received extensive and very positive media coverage. However, post – conviction DNA Testing more often than not, provided either inconclusive result or in many cases confirmed the guilt of the prisoner seeking testing^{xix}.

The fairy tale like story of the innocent men wrongly accused and convicted of a crime, later freed through post-conviction DNA Testing, is told every week in magazines, newspaper comment, television shows and radio interviews. DNA proof can be exercised to know the blamelessness of persons. The ability of DNA proof to exclude a person conclusively has made DNA profiling a valuable tool in post-conviction reviews. In case where the identity of the performer was at issue, and where the prosecution had relied on circumstantial evidence, DNA evidence can play a leading role in overturning a wrongful conviction.

The probative value of DNA Testing has been steadily increasing to conduct there test advances.^{xx}

MALIMATH COMMITTEE REPORT

With predominance of legal sprit in mind, Justice Malimath Committee recommended that DNA expert being included in the list of expert under Section 295(4) of Code of Criminal Procedure, 1973 Section 54 of Cr.P.C. provides for medical examination of the accused in case if there are any injuries o his person. In **Ananth Kumar v. State of Andhra Pradesh**^{xxi} the expression examination of the person includes physical examination, medical test of blood, Semen, sputum, urine etc. Thus under the provisions DNA Test can be done by medical practitioner. In **D.J Vaghela v. Kantibai Jethabai**^{xxii} the High Court held that obtaining of blood, semen, saliva, urine-under Section 53 of Cr.P.C, is not volatile of Article 20(3) and under Section 156 & 174 of Cr.P.C.

IDENTIFICATION OF PRISONER'S ACT, 1920

The Justice Mallimath Committee has recommended for amending Section 4 of Identification of Prisoner's Act, 1920 on lines of Sec. 27 of Prevention of Terrorism Act, 2002 (POTA)- provided that the police officer while investigating any case can request the Court of CJM or the Court of CMM, as the case may be, in writing or obtaining samples of handwriting, fingerprints, blood, saliva etc. from any accused person. If these recommendations are implemented, it will be possible to identify the culprit.

HUMAN DNA BILL (INDIA) -2012^{xxiii}

The Bill was drafted with an objective to enhance the protection of people in the society and administration of justice by analyzing DNA found at a crime scene, the victim or an offender to establish the identity in a criminal or civil proceeding mentioned under this Bill. In order to achieve these objectives, the following are essential:

- for regulating the use of DNA analysis of human body substance profiles,
- for the establishment of DNA Profiling Board to lay down the standards for DNA laboratories, collection of human body substances, custody trail from collection to reporting,
- for the establishment a National DNA Data Bank, and
- for matters connected therewith or incidental thereto.

For the regulation of DNA analysis, the Bill created the following:

- DNA Profiling Board,
- DNA Laboratories,
- DNA Data bank.

DNA PROFILING BILL, 2017

The draft DNA based technology (use and regulation) bill, 2017 has five provisions to safeguard the citizens privacy, which include:

- The DNA profiling will be used only for identification purposes and not for any other details
- No bodily substances will be taken without previous consent in writing. However, according to the wire report, the consent clause is not applicable for people on the more serious end of the criminal justice system. For persons accused of a crime that is punishable either by death or by a sentence of more than 7 years of prison, prior consent need not be sought.
- People found guilty of floating the norms proposed by the bill are liable to receive three years imprisonment and a hefty fine. It is also pointed out that a person's DNA profile can only be used for comparison I the index if the person has been suspected of a crime, or is a previous offender himself.

LAW COMMISSION REPORT, 2017

- DNA profiling board- a statutory; a DNA profiling board by constituted which would undertake functions such as lying down procedures and standards to establish DNA laboratories and granting accreditation to such laboratories; and advising the concern ministers/departments and of the central and state governments on issue relating to DNA laboratories. The board shall also be responsible to supervise, monitor, inspect and access the laboratory. The board will frame guidelines for training of the police and other investigating agencies dealing with DNA related matters
- DNA profiling would be under taken exclusively for identification of a person and would not be used to extract any other information
- DNA data bank: There shall be a national DNA data bank, and regional DNA data bank for the states, to be established by central government, the data bank will be responsible for storing DNA profiles received from the accredited laboratories and maintaining

certain indices for various categories of data, like crime scene index, suspect index, offender index, missing person index and unknown deceased persons index.

- With a view to assist the kith and kin of missing persons, provisions have been made for proper identification of missing persons on the basis of their bodily samples/substances.

COMPARITIVE ANALYSIS

➤ LAW IN UNITED KINGDOM

In 1994 the British Parliament passed the **Criminal Justice and Public Order Act**, which provided the legal foundation for national DNA database (NDNAD). The act allows the police to take DNA samples without consent from anyone charged with any offences that is classified as recordable, and also to search the database speculatively for matching profiles. Because of the Parliament act, the police are permitted to take DNA's of the arrested person before the investigating process begins so as to make the process faster.

The Court of Appeal, in **R (on the application of S) v. Chief Constable of South Yorkshire^{xxiv}**, upheld a legislation compelling preservation of finger prints, bodily samples, DNA profiles and DNA samples. It was contended that the amended provisions were incompatible with Articles 8 and 14 of the Human Rights Act, which dealt with protection of privacy and hence it was prayed that the finger prints and DNA samples of the concerned parties should be destroyed. In the said case, a distinction was drawn between the (taking), "retention" and "use" of fingerprints and DNA samples. The statutory basis for the retention of physical samples taken from a suspect was addition of new Section 64 (1 A) of the Police and Criminal Evidence Act, 1984 which provides that these samples could only be used for the purposes relating to the prevention or detection of crime, the investigation of an offence or the conduct of a prosecution.

➤ LAWS IN THE USA

The Federal Bureau of Investigation in early 1990 designed the combined DNA index system (CODIS) with the purpose of amalgamating forensic sciences and corroborated by the recent judgment of the US Supreme Court in **Maryland v. King^{xxv}** where in it

was held that when officers making an arrest for a serious offences are authorized to take an analyse a check swab of the arrestee's DNA and the same is legitimate under the forth Constitutional Amendment.

In the case of **People of the State of Illinois v. Reggie F. Mills^{xxvi}**, the evidence included regular fingerprints and semen stains, whose DNA was found to match miles by scientist at Cellmark Diagnostics, a DNA identification company in Maryland. This case ended with a general strong support for DNA evidence and faith that the technique can produce reliable results. In **Daubert v. Merrell Dow Pharmaceuticals^{xxvii}**, after analyzing the details of the standards of evidence previously set and the Federal rules of evidence, the Court put forth five criteria to characterize the weights of evidence:

- Whether the theory or technique has been tested?
- Whether the theory or technique has been subjected to peer review and publication?
- Whether the theory or technique has a known or potential rate of error.
- Whether the theory or technique has standard for controlling the technique is operation?
- The degree to which the theory or technique has been accepted in the relevant scientific community.^{xxviii}

➤ **INDIAN LEGAL SCENE: COMPARITIVE STUDY**

However, in India don't seem to have realized how was the potential of science technology is, DNA technology has made a drastic improvement in the methodology of providing different type of disputes of civil and criminal cases. Establishment in the middle of the 19th century, today in India there are about 21 well established forensic labs, 4 of them being administrated by the central government. The scientific methods are being adapted in crime investigation in India in an organized way from 1849 onwards. Despite having DNA technology in India, it is not seen used in the administration of criminal justice system.

There is no special enactment dealing with DNA profiling as is there in other countries however there are few legal provisions in Indian Constitution, the Indian Evidence Act 1872, the code of criminal procedure, 1973 and in the identification of Prisoner Act 1923 which deems to deal with DNA profiling.

In the case of, the Kerala High Court in **Vasu v. Santa**^{xxix}, had held that taking of blood sample is a constraint of personal liberty and cannot be carried out without consent, the Madras High Court relying upon a very old case had laid down that it appears doubtful whether such a compulsion can be made even after legislation.

- **POSITION IN CIVIL LAW:**

It may be mentioned at the very outset that dealing with civil cases, Courts in India have adopted a trend that a party cannot be compelled to give sample of blood for blood group test. Therefore such a sample cannot be collected against the will of such a person courts in India have adopted this general trend, in the absence of any statutory law in the field.

Hargovinda Soni v. Ram Dularey^{xxx}, the Madhya Pradesh High Court was categorically of the opinion that no person can be compelled to give a sample of blood against consent. In a case where a party does not consent for giving his sample for blood or DNA fingerprint test, the maximum the Courts can do is to draw an adverse inference against that party for such refusal. Indicating a gap in law on such question, a single judge of Madras High Court Head, however, held it long back, that “there is no procedure either in the civil procedure code or the evidence act which empowers the court to enforce” the taking or giving of blood samples.

It may be observed that a given circumstances, simply an adverse inference may not be of any consequences since such a process would tantamount the prevention of positive evidence before the court. The law was laid down by the Madras High Court in **Subayya Gounder v. Bhoopala Subramanian**^{xxxi}, was considered in the light of the circumstances.

- **POSITION IN CRIMINAL LAW**

A single judge of Gujarat high court in **Najabhai v. State of Gujarat**^{xxxii}, has held that the bar of article 20(3) of the Constitution of India would extend with regard to compelling the accused to submit himself to medical examinations also. However, this proposition runs contradictory to a decision by apex court in **State of Bombay v. Khathikalu Oghad**^{xxxiii}, wherein, such examinations were held not included within the meaning of becoming a witness. Referring to the powers conferred under Section 53, Cr.P.C the Andhra Pradesh High Court

has held that although there is no clear provision in Cr.P.C. for taking such blood samples yet there is no prohibition for taking such blood samples of an accused by exercising powers under Section 53 Cr.P.C. The Court observed that taking samples come within the scope of examination of the person of the arrested person.

JUDICIAL APPROACH OF DNA PROFILING

➤ A TWIST OF FATE: THE FIRST USE IN ENGLAND

A fifteen year old school girl, Lynda Mann was abducted in Narborough, England. The next day, her body was discovered raped and murdered. Three years later, another young woman met the same fate near Lynda's resting place. Richard Buckland was arrested and he confessed to the second murder only. An untested technique was applied; genetic figure printing through DNA analysis. Surprisingly, there was no match in either murder, so the test was repeated. Ultimately, Buckland was proven innocent. As to why he confessed, he claimed he had been pressurized by police. 5500 men from local area were then tested on DNA analysis. Colin Pitchfork pursued a friend to test in his place, but when he bragged about fooling the investigators, he was overheard and reported. His genetic profile matched the semen samples from both the girls and in 1987, he became the first murderer convict through DNA analysis.

➤ RAJIV GANDHI ASSASSINATION^{xxxiv}

The ex-Prime Minister of India, Late Sri Rajiv Gandhi was blasted using human bomb in 1991 during general election campaign in Tamil Nadu. The explosion splintered victims into pieces. The DNA profiling not only assisted in identifying the victim but also established the identity of the perpetrators mainly by the belt been recovered from the scene of crime, which was carrying paltry body flesh tissues. On the similar grounds, assassination of Chief Minister of Punjab, Late Mr. Beant Singh in an explosion was also revealed using DNA technology.

➤ N.D. TIWARI CASE^{xxxv}

This case is unique, as a young person (born in 1979) claimed before the court in 2007 to determine his paternity indicating a particular politician to be his father. His mother

was validly married to another person in 1963 and got divorced in 2006. Despite the fact that, Section 112 of the Indian Evidence Act, 1872 was competent to determine fatherhood, the court opted to ascertain paternity through DNA test. The DNA test, however, indicated Mr. N.D. Tiwari, the then Chief Minister of Uttar Pradesh and Uttarakhand as his biological father. But the significant question is whether the law recognized and accepts both social, legal and biological aspect of the case? Recently, in 2014, Mr. Tiwari and petitioner Mr. Rohit Shekher underwent out of court settlement and Mr. Tiwari has accepted himself as putative father of the petitioner.

CONCLUSION

Keeping in mind the aforesaid analysis, it is highly unsafe to convict or acquit a person solely on the basis of DNA Evidence. There must be a unique balance between scientific evidence and human evidence. In India till now, there is no specific DNA legislation to regulate the collection of biological sample for DNA analysis. Sections 53, 54, 53A, 164A, 173(8), 293(2) & (4) of the Criminal Procedure Code, 1973, Sections 45, 112 of the Indian Evidence Act, and Section 27 of Prevention of Terrorism Act, 2002 deal with DNA test. Though the DNA test has gained a statutory recognition under the above mentioned laws, often disputes arise as to the powers mentioned under Sections 53 of the Criminal Procedure code, 1973 and the constitutional validity of Section 53 of the Criminal Procedure Code, 1973. Therefore, the existing value-based criminal justice system cannot be done away with and such, a susceptible balance has to be struck between the modern system based on scientific and technological knowledge and our existing value based system. It should be remembered that the law directly deals with the basic complex human problems which are not of mathematical precision, and the fate of every case depend upon its own factual matrix. Thus, scientific evidences like DNA testing are one of the means to achieve the main goal and it is not an end in itself. However, we have to modify our administration of justice system remaining in the existing framework to the affect that we can effectively utilize the benefit of modern, scientific and technological advancement.

The judgments of the Supreme Court and various High Courts ruled that taking of biological samples from the accused for DNA analysis under Section 53 of the Criminal Procedure Code,

1973 does not face the constitutional hurdles under Article 21 and Article 20(3) of the Indian Constitution. The constitutional makers do not say that no person shall be deprived of his right or personal liberty under any circumstances. On the contrary, if such deprivation of right or personal liberty is in accordance with the procedure established by law, the same does not violate Article 21 of the Indian Constitution. If only physical examination of the skin and the body, is accepted without including taking of blood sample for determination of his blood group then the very purpose of Section 53 of the Criminal Procedure Code will be frustrated or defeated. Like that, a specimen handwriting or signature or finger impressions by themselves are no testimony at all being wholly innocuous because they are unchangeable except in rare cases where the ridges of the fingers or the style of writing have been tampered with. They are only materials for comparison in order to lend assurance to the court that its inference based on other pieces of evidence is reliable. They are neither oral nor documentary evidence but belong to the third category of material evidence which is outside the limit of testimony. The makers of the constitution should not have intended to put obstacles in the way of efficient and effective investigation into crime and of bringing criminals to justice. Hence, the taking and retention of DNA samples which are in the nature of physical evidence does not face constitutional hurdles in the Indian context.

In India great importance has been attached to the technique of DNA profiling. Keeping in view that today in the present society, the shrewd perpetrators of crime are continuously engaged in the commission of highly sophisticated newer crimes with great impunity, using complicated modes operandi there is an urgent need for a more rigorous, specific recent law on DNA Profiling to be enacted by the Government of India.

KEY FINDINGS

- Forensic DNA Profiling, when performed properly by qualified technical and scientific staff in an accredited facility, is rightly considered one of the most powerful tools for the individualizations of bodily substances.
- The important factor for successful DNA analysis is not necessarily the size of the stain, or even its age but the conditions under which it has been stored. So, the reliability of this DNA analysis is based on proper sample collection, proper preservation of

biological sample, the quality control maintained by the forensic labs, and the test conducted by forensic scientists

- Forensic DNA profiling can be extremely discriminating. Random match probabilities are often as low as to essentially pin-point an individual as the source of a bodily substances to the exclusion of all others.
- Forensic DNA Profiling is extremely sensitive, meaning that DNA profiles can be successfully determined from a very low quantities of DNA.
- Legislations in India give importance to DNA Profiling to a huge extent and have proof to be of utmost importance in a number of cases.
- Taking of biological sample from the accused for conducting DNA test does not violate article 21 and 20(3) of the Indian Constitution.
- The Court can order for medical examination of the accused including DNA test under Section 53 of the Criminal Procedure Code, 1973.
- Indian Judiciary has not given a judgment solely based on DNA evidence. But, at the same time it does not put any yardstick to accept the DNA. It has given a judgment depends on the facts and circumstances of each and every case.

SUGGESTIONS

- The government needs to make changes in the Criminal Procedure Code, 1973 for the accused to provide their DNA Samples to the investigating Agencies on the direction of competent court.
- The government should take quick methods to create database of DNA Based on ethnic group and regional consideration.
- There is requirement of transparency and accountability while collection of DNA.
- Forensic Experts must have also the requisite knowledge of the proper law and should be fully acquainted with the government regulation and orders which are issued from time to time.
- Section 112 has to be amended. Proper chance has to be given to the aggrieved person whoever either it may be the husband or the wife or the child to rebut the presumption lay down under Section 112 of the Indian Evidence Act, 1872 through DNA test.

- Advanced technologies like Laboratory information management systems and automation (LIMS), familial searching, LCN DNA testing can be adopted from the United Kingdom. The post-conviction DNA testing can be adopted from the United States of America.
- At present, when compared to the United Kingdom and the United States of America, India is highly populated and suffers from insufficient lab facility, staff facility and funding facility. Proper guidance should be followed from other nations which have been successfully incorporating DNA legislation in their countries especially from the United Kingdom and the United States of America.
- Specific DNA legislation should be enacted. The following provisions should be incorporated in that legislation.
 - Guidelines for the collection of biological samples;
 - Guidelines for preserving biological samples before DNA analysis;
 - Adequate laboratory facility;
 - Quality and standard of forensic laboratory;
 - Adequate staff facility;
 - The test conducted by forensic laboratory;
 - Funds;
 - Proper forum to review whether the admitted DNA test has been conducted by forensic laboratories;
 - Compliance with the National Privacy Principles which were recommended by Expert's Committee under the Chairmanship of A. P. Shah, the Former Chief Justice of Delhi High Court in 2012.

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