ROLE OF FORENSIC SCIENCE IN ADMINISTRATION OF JUSTICE IN THE INDIAN LEGAL SYSTEM

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I. Introduction

Crime is a part of any civilization. It is as old as human civilization itself.[1] Since the beginning of mankind, man has always tried to develop everything that he has come across. This has led to many inventions and discoveries. Man's ability to think has made it possible for him to achieve perfection in everything. The process of thinking gives birth to both constructive as well as destructive ideas. Destructive ideas generally lead to crime.[2]

It is often said that 'wherever there is civilization there will be crime'. Hence, ever since the beginning of civilization the humanity has witnessed a range of crimes having been committed in the society from time to time.[3] Crimes may be classified into five categories and they are traditional crimes such as theft, robbery, rape and rioting etc., political crimes, economic crimes, social crimes such as child marriage and miscellaneous crimes which are committed under local or special Acts such as offences under the Drugs and Cosmetics Act, 1940 (Act 23 of 1940).[4] To deal with crime every civilized nation has a set of rules called 'law.' Salmond has defined the term 'law.' He explained it as a body of principles,which are recognized by the State. The State applies them to achieve justice.[5]

The vigilant search of truth is the symbol of our criminal justice system. Our methods and rules of criminal laws are designed in such a way that ten guilty persons may escape but one innocent should not suffer. However, while ours is a system to be cherished, it is not a perfect system, and those charged with the administration of justice have a responsibility to look for its persistent improvement.

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1 Lalji Singh, *DNA Profiling and its Applications*, CBI Bulletin 30 (June, 1995).

2 Namrata Shrey, *Role of Medical Science in Criminal Administration*, Criminal Law Journal 235 (September, 2006).

3 Gurjeet Singh, *DNA Profiling and its Impact and Application on Law: Principles, Potentials and Pitfalls*, 4 Journal of Symbiosis Law College 46 (2004).

4 N. V. Paranjape, Criminology & Penology with Victimology (Central Law Publications, Allahabad, 2014) pp. 9-12.

5 N. V. Paranjape, Studies in Jurisprudence and Legal Theory (Central Law Publications, Allahabad, 2011) p. 143.

Initially the crimes committed in the society were mainly simple in nature as well as the manner in which they were committed. To solve these crimes traditional methods such as a testimony by an eye witness or confession by the criminal was sufficient. But over the period of time the credibility of the testimony of an eyewitness came under suspicion. Many eyewitnesses turned hostile or did not come up with their statement at all in front of the judiciary. This led the investigating officers to rely on the confessions made by the accused. But that was also not sufficient as mostly the accused would not testify against himself. This was followed by various inhumane treatments on the accused such as third degree torture of the accused in jails to force the accused to give a confession. But such a confession was not admissible in the court.

II. Use of Scientific Techniques in Crime Detection

Over a period of time criminals started using advanced technology and it became difficult for an investigating officer to catch them. Crimes, which were committed by the criminals, were no longer simple.[6] Hence, it was realized that there was a need to use modern and advanced technologies to solve any crime. Since then there has been a remarkable increase in the use of scientific methods.[7] Blood group testing, fingerprint comparison, footprint comparison, ear print comparison, DNA technology, micro-tracing and voice-analysis are some of the examples of various scientific methods that are used all over the world to solve crimes.

It goes without saying that these techniques have played a major role in solving numerous cases throughout the world. Some of them are:

i. Fruits of Palo Verde Tree—In this case a man was accused of killing a woman in Arizona. The pager of the accused was found near the dead body of the victim. The accused said that the victim robbed him and took away his pager and wallet. During the investigation the investigating officers found some bean like looking seeds in the truck of the accused. These seeds were later identified as the fruits of a tree called Palo Verde. A damaged Palo Verde tree was also found near the scene of crime. The question before the officers was whether each tree has a matchless DNA pattern. This was proved by a geneticist at the University of Arizona in Tucson. Interestingly, each Palo Verde tree has its own DNA pattern. The DNA pattern of the fruit, which was found in the truck matched with the tree at the scene of crime. Hence, the accused was convicted.[8]

6 Arun Kumar Singh, *Scientism of Investigation of Crime: A Boon or Bane*, 3 Chotanagpur Law Journal 42 (2010-2011).

7 Amita Verma, Cyber Crimes and Law (Central Law Publications, Allahabad, 2009) p. 1.

ii. Identifying September 11th victims—More than 2000 people died in the attack on the World Trade Centre on September 11, 2001. Identification of so many dead bodies was a challenge as most of the bodies were charred so brutally that only some tissues and bones were left. A panel of experts was made by the Institute of Justice. These experts matched the DNA samples from the dead bodies with their relatives. Sadly, out of 2792 people who died in the attack only 1585 could be identified.[9]

iii. Osama Bin Laden—Osama Bin Laden was killed on May 2, 2011 in Pakistan. After his death the challenge before the officials was to identify his body. For this task the officials used biometric and DNA technology. The biological samples from the dead body were compared with the samples from his family. A visual id was made and it was proved to the world that the body was indeed of Osama Bin Laden[10]

At the same time, in India the criminals are classy but the laws are not. The Indian legal system is based on laws such as the Constitution of India, Code of Criminal Procedure, 1973 (hereafter Code), Indian Penal Code, 1860, Indian Evidence Act, 1872, Code of Civil Procedure, 1908. It is the responsibility of law enforcing agencies to detect crime, apprehend perpetrators and to provide such evidence, which can help in solving the matter. India has enough number of legislations but they are mostly outdated. The Parliament passes new laws to control crimes in the society. However, the Parliament does not work in advance and generally laws are passed after the commission of a heinous crime.

It cannot be denied that detection of crime requires painstaking effort by a number of agencies. And now with a rampant increase in the technology the criminals have become more advanced as compared to the law. Even though a well-formed system of laws is not present in India the police officers have utilized many scientific techniques to solve various cases. Some of them are:

i. Rajiv Gandhi Assassination Case—Rajiv Gandhi was assassinated on May 21, 1991. He was killed by a suicide bomber. In the attack the bodies were dismembered and could not be identified. After the investigation it was found that a belt bomb was used for the attack. DNA tests helped in finding the body parts of the accused as well as of the victims. The identity of the

8 R. Usharani, *DNA Evidence and The Courts*, 1 Karnataka Law Journal 6-7 (2008).

9 Sarla Gupta Aggarwal & Beni Prasad Aggarwal, Forensic Science in Criminal Investigation & Trial: Prosecution & Defence (Premier Publishing Company, Allahabad, 2013) pp. 1071-1072.

10 Madison Park & Sabriya Rice, *How did U.S. Confirm The Body was Bin Laden's?*, *available at* http://edition.cnn.com/2011/HEALTH/05/02/bin.laden.body.id/. (last visited on October 4, 2017).

accused was also found by DNA tests.[11]

ii. Tandoor scam—On 2nd July, 1995 Mrs. Angoori Devi saw flames coming out of Bhagya Restaurant in Ashok Yatri Niwas in Delhi. She called the Beat constable who found a body in the *Tandoor* of the restaurant. The body was not completely burnt. Few droplets of blood were found near the crime scene. A DNA test was conducted and it was discovered that the body was of Mrs. Naina Sahni. After the investigation it was found that she was murdered by her husband.[12]

iii. Nithari Serial Murders—The crime, which shook the conscience of the entire nation, took place in the house of Moninder Singh Pandher in Nithari, Uttar Pradesh. The accused Surender Koli confessed that he used to lure girls and rape them and then kill them. Further he used to chop and cook the parts of the body and ate them. In this case the human skulls and various other body parts, which were recovered from the drain were sent for DNA analysis. This helped in identifying victims.[13]

iv. Neeraj Grover Murder Case—The biological sample from the dead body of Neeraj Grover, which was found in Manor, Maharashtra, was matched with that of his parents to identify him. To identify the accused in this case the police had matched the mud from the tyres of the car used by the accused and the scene of crime. Lieutenant Jerome Mathew was convicted in this case for culpable homicide not amounting to murder and Maria Susairaj for destroying evidences.[14]

It cannot be denied that these scientific techniques hold the possibility of finding an extremely accurate fact but on the other hand it often includes a risk of uncertainty, which our legal system is not willing to tolerate. There are several concerns such as the rights of an accused, which are highlighted over the period of time against the use of scientific techniques in any legal system.

III. Modern Techniques in Forensic Science

Various techniques such as Narco-Analysis, Polygraph or Lie-Detector Test, Brain-Mapping or P 300 Test, DNA Profiling and Fingerprints etc. are commonly understood as the forensic science in the field of law.

11 AIR 1999 SC 2640.

12 *Sushil Sharma* v. *Delhi Administration,* 1996 CriLJ 3944.

13 *Surendra Koli* v. *State of Uttar Pradesh,* AIR 2011 SC 970.

14 Shahkar Abidi, *Forensic Evidence Help Solve Neeraj Grover Murder Case*, *available at* http://www.dnaindia.com/mumbai/report-forensic-evidence-helped-solve-neeraj-grover-murder-case-1561005 (last visited on October 4, 2017).

i. Narco-Analysis Test—In the early 20th century the doctors used scopolamine along with morphine and chloroform to help induce a state called twilight sleep during child birth. A major side effect of scopolamine was that it caused disorientation, confusion and amnesia during the period of intoxication. In the year 1922, Robert House who was an Obstetrician in Texas used this technique on two criminals and found out that they had not committed the crime. The court also reached to the same conclusion after the trial. His idea and experiment gained a lot of attention and this led to the beginning of an era of use of Narco-Analysis in solving crimes.[15] Narco-Analysis is a process whereby a person is induced to a state of semi consciousness by the use of chemical injections. A truth serum is injected into the body of the person and thereafter he is interrogated. This process is even used for enhancing the memory of a witness.[16]

ii. Polygraph or Lie-Detector Test—The term Polygraph means several writings. Lombroso used this technique for the first time in 1895 to distinguish between reality and fraud. This technique is based on the fact that a person becomes nervous when he lies. This nervousness causes mental excitation. In order to hide this excitement adrenal glands are stimulated and they secrete adrenalin, which enters the blood stream. The pulse rate as well as the blood pressure increases due to the presence of adrenalin in the blood. When all these psychological changes are recorded it is known as Polygram. The Polygram is used to find out whether the person experienced any emotional stress while answering any particular question during the lie-detection test.[17] This test is conducted in three stages. They are pretest, polygraph test and post test. Initially the examiner prepares a set of questions. The correct answers of these questions are already knows to the examiner. On the basis of the reaction of the person a base line is created. Thereafter questions related to the case are asked. Whether a person is lying or not is diagnosed by behavioral and psychological changes, which are exposed by the graph. The sign of lie is derived from the baseline.[18]

iii. Brain-Mapping or P 300 Test—In this test various electrodes are placed on the body of the person. In most of the cases these electrodes are kept on the skin of head and face. These electrodes measure any changes in the

[15] Deepak Ratan & Mohd.Hasan Zaidi, An Introduction to Forensic Science in Justice Delivery System (Alia Law Agency, Allahabad, 2008) p. 13.

[16] P. Ramanatha Aiyer, The Major Law Lexicon (Lexis Nexis, India, 2005) p. 3121.

[17] Yawer Qazalbash, Law of Lie Detectors: Narco-Analysis, Polygraph, Brain Mapping, Brain Fingerprinting (Universal Law Publishing Co. Pvt. Ltd., New Delhi 2011) p. 60.

[18] *Available at* https://www.liedetectortest.uk/publications/lie-detector-test-procedure/ (last visited on October 4, 2017).

electrical field potentials in the person that are produced by neural activity, which happens in a brain when the brain is exposed to a stimulus. Human brain generates a unique pattern when it is exposed to a familiar stimulus. This pattern is recorded in Brain-Mapping. In this technique the person is not asked any questions but is shown some visuals. His response to those visuals is recorded. In this test the person is shown some relevant and some irrelevant videos, pictures or sound. If the person is familiar with any visual or sound then his body will transmit a P300 wave. These waves are recorded in the instrument. These records are examined to identify the familiarity of the person with a particular situation.[19]

iv. DNA Profiling—Frederick Micscher first discovered DNA in the year 1869. It was Sir Alec Jeffery who used this technology to solve a crime for the first time in the Collin's case in the year 1984 in England.[20] Scientists have developed various other technologies to enhance the use of DNA Technique to solve a crime such as, RFLP (Restricted Fragmented Length Polymerase) and PCR (Polymerase Chain Reaction).[21] DNA Tests are highly effective as each individual except identical twins have a unique pattern of DNA. It cannot be tampered with and its credibility can't be questioned.[22]

v. Fingerprints—All human beings are born with a characteristic set of ridges on their fingers. These ridges can be in the shape of a loop, swirls or whirls. They are rich in sweat pores. Oil gets trapped in these ridges. When a finger touches a place it leaves the fingerprint of an individual on that place. The fingerprint pattern of each individual is distinct. It is this unique pattern of the fingerprint that motivates a police official to record the fingerprints at the scene of crime. The fingerprints can be used later on to identify the culprit.[23]

IV. Forensic Science v. Human Rights

In order to conduct a forensic test on an individual, body samples from that individual are required. These samples can be obtained with the consent of an individual or coincidently. These samples can also be obtained by force or

[19] *Available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3171915/ (last visited on October 4, 2017).

[20] Surbhi Singh Sisodia, *DNA Profiling: Use of Forensic in Administration of Justice*, 4 Indian Law Review 74 (2012).

[21] B.R. Sharma, Scientific Criminal Investigation (Universal Law Publishing House, Delhi, 2013) p. 155.

[22] J.K. Mason & McCall Smith (eds.), Medico-Legal Encyclopedia (Butterworth, London, 1995).

[23] *Available at* http//.Sciencejrank.org /Pages 12822/Forensic Science Fingerprinting.html. (last visited on October 4, 2017).

coercion on an individual. If a body sample is obtained with the consent of an individual then there exists no doubt on the use of that sample for a forensic test. If a sample is taken by force or coercion then the results of a test is not admissible.

In all these cases the most important question,which arises is that whether a forensic test can be conducted on a sample that is obtained coincidentally? Can a forensic test be conducted on a sample, which was neither obtained by force nor by consent of an individual?[24]

There are two theories, which make an attempt to give an answer to this crucial dilemma. As per the first theory a forensic test itself is not an infringement of a human right of a person. It does not violate the right to integrity of a human being. If the biological sample has been obtained lawfully either with consent of the individual or coincidentally then there is a right to perform a forensic test on such material. This theory is based on the logic that there is no legal consideration that is specific to forensic tests. The second theory is based on the fact that it is the right of every individual to decide what happens to any sample that is taken from his or her body. As per this theory if a biological sample is taken by consent or even coincidentally then also it is the right of an individual only to decide whether a forensic test can be done on that material or not. If a forensic test is conducted without the consent of that individual then it will be considered a violation of right to integrity.[25]

The term human right is defined in section 2(d) of the Protection of Human Rights Act, 1993 (Act 10 of 1994).[26] When the issue of use of scientific evidences in a trial is debated, the foremost question that arises is that it infringes the right of an accused person. The second issue that arises is that it infringes the right of privacy of not only the person whose body sample is collected but also of those who are related to him.[27] A balance needs to be struck between all these issues if scientific evidence is to be produced before the court of law.

[24] Subhash Chandra Singh, *DNA Profiling And The Use Of DNA Evidence In Criminal Proceedings*, 53(2) Journal of Indian Law Institute 220 (April-June, 2011).

[25] *Id.* at 221.

[26] The Protection of Human Rights Act, 1993 (Act 10 of 1994), section 2(d), "Human rights means the rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India".

[27] Subhash Chandra Singh, *Protection of Human Genetic Information: Balancing Interests in the Use of Personal Genetic Data*, 55(2) Journal of Indian Law Institute 179-181 (April-June, 2013).

V. Forensic Science v. Right Against Self Incrimination

In every case where the prosecution demands for taking of DNA samples for the purpose of investigating the case it is challenged by the accused on the ground that such a demand is violative of Article 20(3) of the Constitution of India.[28] It is true that our Constitution gives protection to an accused against testimonial compulsion. However, the Supreme Court of India has always aimed to increase the scope of this right in such a way that it does not hamper the rights of the victim. A balance is created between the rights of both the parties in a case.

The Supreme Court in *M.P. Sharma* v.*Satish Chandra*[29] declared that the immunity given under Article 20(3) is absolute. It provides a protection to the accused from giving any kind of evidence, which can be used by the prosecution against him but later on in the year 1961 the court narrowed down this decision in *State of Bombay* v. *Kathi Kalu Ougadh.*[30] The court pointed out that only self-incriminatory statements are not admissible and reasonable force can be used according to the powers given in the Code. Referring to the powers conferred in section 53 of the Code the court held that it is valid to use such force as is reasonably necessary for making such an examination. The court remarked in *Anant Kumar* v. *State of Andhra Pradesh*[31] that even if there is no specific provision for taking blood samples in any statute the samples can be taken under section 53 of the Code. The court held that taking of blood and semen sample from a person comes within the scope of examination of the person. An examination of a person by a medical practitioner will be conducted by taking a sample of his blood, semen, urine etc. and if due to this examination discomfort is caused to any person then that alone cannot be a reason for not allowing the examination of that person. This discomfort is justified.

In *Ratan Lal Bhogi Lal Shah* v. *V.K. Guha*[32] it was held that the armor given by Article 20(3) of the Constitution of India doesn't mean that the accused is not required to give evidence on any matter at all. The accused can be asked to give information in matters, which do not incriminate him. The accusatorial system gives too much importance to the right of the accused. It does not care about law enforcement. If the accused is innocent then why should he take refuge under Article 20(3), when subjected to DNA Test? In

[28] The Constitution of India, Article 20(3), "No person accused of an offence shall be compelled to be a witness against himself".

[29] AIR 1953 SC 300.

[30] AIR 1961 SC 1808.

[31] 1977 CrLJ 856 SC.

[32] AIR 1973 SC 116.

order to reach the right conclusion one must see the right perspective.

VI. Forensic Science v. Right to Privacy

In India right to privacy is enshrined in Article 21 of the Constitution of India.[33] India is a signatory to Universal Declaration of Human Rights, 1948 and to International Covenant on Civil and Political Rights, 1966. Article 12 of the Declaration protects a person from capricious interference with his right to privacy.[34] Similarly, Article 17 of the Covenant also gives protection from unlawful interference with the right to privacy.[35] Right to privacy is now a fundamental right as was declared by the Supreme Court in *Justice K. S. Puttaswamy (Retd.)* v. *Union of India.*[36]

If a question arises whether taking of a body sample from a person infringes the right of privacy the answer will be no but if that body sample is misused then definitely it infringes the right of privacy of a person. There are several instances in the history where biological samples were misused. Such as in the late 1930's Hitler's eugenic based program of race hygiene resulted into a program of euthanasia where many adults and children with various physical and mental disorders were killed. This policy ultimately culminated into killing of millions of Jews.[37] Employers and insurers can further misuse information. It can lead to loss of employment or other insurances.[38]

Recently news about leak of sensitive information in *Aadhaar* was also revealed by a study published by Centre for Internet and Society (CIS), a Bengaluru-based organization. In a study published on May 1, two researchers from CIS found that data of over 130 million *Aadhaar* cardholders was leaked from just four government websites.[39]

[33] The Constitution of India, Article 21, "No person shall be deprived of his life and personal liberty except according to the procedure established by law."

[34] Universal Declaration of Human Rights, Article 48, "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of law against such interference or attacks".

[35] International Covenant on Civil and Political Rights, 1966, Article17, "No one shall be subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence, nor to unlawful attacks on his honor and reputation and everyone has the right to the protection of the law against such interference and attacks".

[36] AIR 2017 SC 4161.

[37] Alka Bhatia and Neha Dixit, *Forensic DNA Databases: Socio-Legal Impediments and Solutions*, 43 (1&2) Indian Socio-Legal Journal 20 (2017).

[38] *Ibid.*

[39] *Available at* http://indiatoday.intoday.in/technology/story/aadhaar-data-of-130-millions-bank-account-details-leaked-from-govt-websites-report/1/943632.html (last visited on October 4, 2017).

It is the responsibility of the government to ensure that such sensitive information of any individual must not leak. If a National DNA Database is created then the information stored in that databank must be kept confidential. If any information from this databank is misused then it will lead to a gross violation the right to privacy.

VII. Legislative Approach Towards the Use of Forensic Science in India

Unlike most of the developed countries in the world India does not have a specific legislation till date which deals with the use of DNA Technology in solving cases. Section 53(1) of the Code[40] provides that a registered medical practitioner can examine an accused. The medical practitioner can conduct such an examination only when a request is made by a police officer. This examination is done by the use of scientific techniques such as DNA profiling. The provision gives the power only to police officers in criminal cases. However, this provision is only for criminal cases. In civil cases a complainant cannot bring a culprit for DNA profiling. Moreover, not every registered medical practitioner is competent to know the complex principle of DNA profiling. Under section 293 of Code, the scientists of DNA Finger printing and Diagnostics are not specifically exempted from being examined as a witness; they have to give evidence in each and every case personally. As DNA profiling is an exact science so these scientists must be exempted.

Section 45 of the Evidence Act, 1872 provides for relevancy of an opinion of an expert on the question of handwriting or finger impression and under section 73 a comparison can be done of the signature, writings or seals with other admitted documents. But, it is not binding on an accused to give sample of his handwriting and this causes another lacuna in the process of investigation.Under section 27(1) of Prevention of Terrorism Act, 2002 court can ask for samples of handwriting, finger prints, foot prints, photographs, blood,

[40] The Code of Criminal Procedure, 1973 (Act 2 of 1974), s. 53(1), "When a person is arrested on a charge of committing an offence of such a nature and alleged to have been committed under such circumstances that there are reasonable grounds for believing that an examination of his person will afford evidence as to the commission of an offence, it shall be lawful for a registered medical practitioner, acting at the request of a police officer not below the rank of sub-inspector, and for any person acting in good faith in his aid and under his direction, to make such an examination of the person arrested as is reasonably necessary in order to ascertain the facts which may afford such evidence, and to use such force as is reasonable for that purpose."

saliva, semen, hair, voice of any person.[41]As per section 27(2) if the accused does not give his samples then it will lead to a negative inference against him.[42]

The Law Commission of India has prepared the DNA Based Technology (Use and Regulation) Bill, 2017. According to this bill right to collect DNA samples is given to licensed laboratories, police stations and courts in the country. The samples will be analyzed to give information about the identity of the person. This information will be safely stored in a databank. This can be used to either identify any person who was missing or even any dead body that was unidentified. Any sample, which was recovered from any scene of crime or from an undertrial/suspect or an offender, can be stored in this database. The main highlight of this bill is that before a medical practitioner takes any sample from a person, the consent of that person is mandatory. But if a person is convicted of an offence that is punishable with death or imprisonment of more than seven years then the provision of mandatory consent is not applied before collecting the sample from that person. The consent must be in written form.

The databank shall have indices for suspects and offenders. If a person is a suspect or an offender then his samples will be matched with the entries in the suspects' and offenders' indices. If a person is neither a suspect nor an offender then his samples will be matched with the samples that were recovered from the crime scene or from missing persons or the samples that were of any dead body that was not identified. Only when a person who is not a convict or an offender gives an application his profile will be deleted from the databank. There is no provision for an automatic deletion or time bound deletion of any profile. If no application is given then the data will not be deleted.[43]

VIII. International Approach Towards the Use of Forensic Science

Several countries have developed their laws in such a manner that modern scientific techniques can be utilized to deal with criminal cases. In United

41 Prevention of Terrorism Act, 2002 (Act 2 of 2002), section 27(1), "When a police officer investigating a case requests the Court of a Chief Judicial Magistrate or the Court of a Chief Metropolitan Magistrate in writing for obtaining samples of handwriting, finger-prints, foot-prints, photographs, blood, saliva, semen, hair, voice of any accused person, reasonably suspected to be involved in the commission of an offence under this Act, it shall be lawful for the Court of a Chief Judicial Magistrate or the Court of a Chief Metropolitan Magistrate to direct that such samples be given by the accused person to the police officer either through a medical practitioner or otherwise, as the case may be."

42 Prevention of Terrorism Act, 2002 (Act 2 of 2002), section 27(2), "If any accused person refuses to give samples as provided in sub-section (1), the Court shall draw adverse inference against the accused."

43 Law Commission of India, 271ST Report on Human DNA Profiling - A Draft Bill for the Use and Regulation of DNA-Based Technology (July, 2017).

States of America— The Federal Bureau of Investigation (FBI) designed a Combined DNA Index System (CODIS). This system combines forensic science and computer technology into a system, which can help in solving crimes. There are two statutes namely; the DNA Identification Act, 1994 and Violent Crimes Control and Law Enforcement Act 1994 which regulates the identification of an accused using forensic evidences.[44] In *Maryland* v. *King*[45] it was held that DNA test is not a violation of the fourth Constitutional amendment.

In United Kingdom—A National DNA Database was created under the Criminal Justice and Public Order Act, 1994. Under this Act the DNA sample of any accused charged with an offence classified as 'recordable offence' can be taken. The police officers are allowed to take the DNA samples of the arrested person before the process of investigation begins.

China established a DNA Bank in the year 1999. The convicts as well as the suspects of sexual crimes can be compelled to give their body sample for DNA tests. A time period of ten years is prescribed for storing the body sample. A person who is punished for imprisonment of more than five years can be asked to give a non-intimate body sample.

In the year 2000 Canada passed the DNA Identification Act, 2000. Under this Act a DNA databank was established. The samples under this Act can only be collected for legal purposes and privacy of an individual is protected.

IX. Conclusion

It is the need of the hour to have a system that is not only specific but also unambiguous to solve several cases in which scientific technologies are used. A well-formulated system will help in successful application of scientific technologies in Indian legal system. If a law is made on the use of forensic science then it must ensure that the data that is collected is secured and not misused by any unauthorized person. Such misuse of data will definitely lead to an infringement of a right to privacy, which is now a fundamental right in India. The main aim of the Parliament should be to bring in force a law, which has specific guidelines that will regulate the collection of data from the scene of crime or from any person. It should also have rules, which can guide an investigating agency before they collect a biological sample. It should create a balance between the rights of the accused as well as of the victims. There must be safeguards to balance the conflicting interests of both the parties. If in future

44 Jyotrimoy Adhikari, DNA Technology in Administration of Justice (Lexis Nexis Butterworths Wadhwa, New Delhi, 2007) p. 35.

45 133 SCt 1958 (2013).

such a law is made and passed by the Parliament then it will help the judges to handle cases more conveniently and evidences, which are collected by the use of scientific technology will be examined more accurately.

India can take a cue from the DNA Identification Act, 1994. The DNA Index System that is called CODIS under this Act has a three-tier system to store information. The first level is the Local DNA Index System. At this level information is stored by the laboratories of the local police and sheriff departments. The second level is the State DNA Index System. In this system local laboratories can exchange information throughout the State. The third level is the National DNA Index System. Here information is shared on a national scale.

Whenever the process of DNA profiling is used on a human being it involves three types of intrusion of individual privacy. When the samples are taken from the body of any person then it infringes the right to privacy of body of a person. It leads to intrusion of genetic privacy of a person as information, which can predict the genetic structure of a person can be revealed. It can also lead to an intrusion of behavioral privacy of a person. Application of these scientific technologies can reveal where a person has been and what he has done.

A welfare state like India should not disregard the right to privacy even at the cost of larger interest of the community. If sound principles for protecting the privacy of a person are made then it can automatically enhance the legitimacy of use of scientific technologies in solving cases. A well-framed, transparent law must be formulated to protect the issue of privacy of an individual. The system must be accountable for any misuse of the Technology. Such a system would reassure the community that the use of this scientific technology is for a greater good. It is for the safety and security of the citizens and is done legitimately with the authority of law. Right to privacy cannot be denied.