ROLE OF FORENSIC SCIENCE IN THE INVESTIGATION OF HOMICIDE- A STUDY OF INDIAN LEGISLATION

A DISSERTATION TO BE SUBMITTED IN PARTIAL FULFILMENT
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Submitted By

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CONTENT

LIST OF ABBREVIATIONS

A.D.	Anno Domini
AIR	All India Reporter
B.C.	Before Christ
CBI	Central Bureau of Investigation
CIA	Central Investigation Agency
C.J.	Chief Justice
CQ	Control Question
CrPC	Criminal Procedure Code
DLC	Direct lie-control
DNA	Deoxyribonucleic Acid
FBI	Federal Bureau of Investigation
FIR	First Information Report
GABA	Gama Amino Butyric Acid
G.S.R	Galvanic Skin Response
MLR	Medico-Legal Reports
PMR	Post Mortem Reports
R-I	Relevant – irrelevant
UK	United Kingdom
U.S.A	United States Of America

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CHAPTER-ONE
INTRODUCTION

1.1 BACKGROUND

Crime in some form or the other has existed since the beginning of human race. As Science and technology developed, criminal and the concept of crime has undergone a tremendous change. Due to this, criminals used their intelligence to use technology to their benefit and the police investigators find it difficult to depend on their conventional style of investigation, interrogation, and surveillance to detect crime. The traditional way of detecting crime by using torturous methods is no longer applicable in the current scenario. Under this circumstance, the police investigators also depend on science to carry out their investigations. This is where Forensic Science has come to their rescue and acts as a powerful weapon in the hands of judiciary and law enforcement departments.[1]

'Forensic' is a word derived from the Latin term '*Forensis'* meaning belonging to court of Justice or public discussion and debate.[2] 'Forensic Science', means the science relating to or denoting the application of scientific methods and techniques to the investigation of crime. Forensic Science is a scientific discipline that deals with the recognition, individualization, identification, and evaluation of physical evidence by applying the procedure of natural sciences used for the purpose of administration of criminal justice.

Forensic science includes all branches of science like medicine, surgery, biology, photography, physics and Chemistry. However, in later years it has developed its own branches like, DNA Fingerprinting, Entomology, Anthropology, Ballistics, Hairs and

[1]B.S. Nabar, *Forensic Science in Crime Investigation,* 15(Asia Law House, Delhi 3 edition 2013)
[2]*Ibid.*

Fibers, Fingerprint Odontology, Pathology, Questioned documents and Toxicology. Currently, Forensic Engineering, Forensic Neuropathology and Forensic Accounting and Fraud Auditing are the other branches added to it.[3]

This research focuses on Role of Forensic Science in the homicidal cases and the procedure of investigation and studies DNA, Lie-Detection Tests, Fingerprinting and Fingerprints and puts an effort to identify their evolution with time along with their judicial aspects. The first type of lie detection test is Narco-analysis test where drug is administered through the veins resulting in the subject being hypnotized. At this stage the subject is more likely to reveal needed information which is favorable for the investigators. Sodium pentothal, a drug used for general anesthesia during surgical process is used for this test. It is utilized in the field of psychiatry and enables diagnosis of mental disorders.[4]

Secondly, Polygraph is another lie detection test which is an interaction between the mind and body. In this method various components and sensors of a polygraph machine are attached to the body of the person who is cross-examined by the expert.[5]Any changes in the pulse rate, respiration rate, blood pressure, and electrical resistance at the skin denotes conscious effort made by the subject to hold back information.

Brain Mapping is the third type of lie detection test, in which the test sensors are attached to the head of the person. Later on, some pictures are shown or is made to hear some sounds through the connected computer. Any kind of electrical activity or response shown is observed by the sensors and registers P300 waves. Such response happens when

[3]Lovely Das Gupta, "Forensic Science and Crime – A Potent Weapon in Criminal Justice Administration", *Cr.L.J.*, Feb. 2003, p. 38.
[4]*Selvi v. State of Karnataka*, AIR 2010 SC 1974 (1994).
[5]Rattan Singh, "Narcoanalysis: A Volcano in Criminal Investigation System", *Cr.L.J.*, June 2010, p. 171.

the person is connected with the picture shown or sound heard. This clearly shows that the individual is related in some way or the other with the incident.[6]

DNA Fingerprinting is the fourth type of test which is the biological blueprint of life. In our country this method is considered to be a vital method in the field of forensic science. This is a more comprehensive scientific examination than any other method or branch of forensic science.DNA Fingerprinting can be used to detect any type of crime like murders, hit and run cases, assaults, dacoities, encounter, rape and other body offences against anybody. This can be done with a variety of materials like hair roots, saliva, blood, semen, etc. The criminal unconsciously leaves any of these materials at the spot. Each and every living cell of our body has a DNA which helps to trace the person involved in the crime.

Fingerprint is another method used to identify the criminal and is considered to be the first innovative method used to investigate crime. This is considered to be the most effective means in today's scenario. It involves processes which is very effective in identification of the culprit involved.

1.1.1 ARTICLE 20 OF CONSTITUTION

As per Article 20(3) of the Constitution and in other statutory provisions Forensic Science Tests are often censured to be self-implication given under the code of criminal procedure, 1973 and Indian Evidence Act, 1872.

Article 20(3) of the Constitution of India secures right against self-incrimination to the accused person by providing that, "No person accused of an offence shall be compelled to be a witness against himself." The rule embedded in this Article consists of the following components (a) a right pertaining to a person 'accused of an offence'; (b) a

[6]GunjanAgrahari, "Narco analysis, P300 Test, Its Objective and Evidentiary Evaluation", *Cr.L.J.,* July 2007, p. 171.

protection against 'compulsion to be a witness'; and (c) a protection against compulsion resulting in his giving evidence against himself.

Constitution has implemented this ban in order to protect the convict from being forced to admit or deny facts related to them. This fundamental principle of English Criminal Jurisprudence is found to be linked with the provisions of Criminal Procedure Code, 1973 and in Indian Evidence Act, 1872.

1.1.2 CRIMINAL PROCEDURE CODE AND INDIAN EVIDENCE ACT

In Criminal Procedure Code, 1973, it is provided under section 53 – Examination of the accused by medical practitioner at the request of police officer, section 53-A – Examination of the persons accused of rape by medical practitioner, section 91 – Summons to produce documents or other things, section 161 – Examination of witness by police, section 162 – Statement to police not to be signed; use of statement in evidence, section 313 – Power to examine the accused, section 315 – Accused person to be a competent witness. The relevant provisions in this regard under Indian Evidence Act, 1972 are to be found in – Section 24 – Confession Caused by inducement, threat or promise, when irrelevant in criminal proceedings, Section 25 – Confession to police officer not to be proved, Section 26 – Confession by accused while in police custody not to be proved against him. Section 27 – How much of information received from the accused may be proved.

The Supreme Court in its landmark verdict case of *NandiniSathpathy v. P.L. Dhani* clarified the scope of Article 20(3) and the provisions of the Criminal Procedure Code, 1973.[7]According tothis case the Supreme Court states that, "Section 161 at the Criminal Procedure Code permits the police to examine the accused during the time of investigation. The prohibitive sweep of Article 20(3) of the Constitution goes back to the stage of Police Interrogation – not commencing in court only. Similar issues are covered

[7]AIR 1978 SC 1025.

by both the provisions considerably as police investigations are related. The ban implemented on self-accusation and the right to silence at the time of investigation or trial in a way protects the accused in regard to offences. This helps him to deter from voluntary disclosure of criminal related matters. It is also said that testimonies obtained by any means, like by physical threats or violence but by psychic torture, atmospheric pressure, environmental coercion, tiring interrogative prolixity, over bearing and intimidatory methods should be accepted as evidence. According to this, refusing to answer or answering honestly can't be regarded as compulsion under Article 20(3). The prospect of prosecution may lead to legal tension in the exercise of a constitutional right, but then, a stance of silence is running a calculated risk. On the other hand if there is any mode of pressure, subtle or crude, mental or physical, direct or indirect, but sufficiently substantial, applied by the police man for obtaining information from an accused strongly suggestive of guilt, it becomes 'compelled testimony', violative of Article 20(3)."[8]

Several cases such as *People's Union for Civil Liberties v. Union* of have alleged the validity of various lie detection tests in India before the Supreme Court and in various High Courts.[9]*Ramchandra Reddy v. State of Maharashtra*,[10]*Rojo George v. Deputy Superintendent of Police*,[11]*Santokben Sharmanbhai Jadeja v. State of Gujarat*,[12]*Dinesh Dalmia v. State*.[13] In the case of *Selvi v. State of Karnataka*,[14] the Supreme Court observed that the compulsory administration of impugned techniques violates the right against self-incrimination. This is because the underlying rationale of the said right is to ensure the reliability as well as the voluntariness of the statements that are admitted as evidence. This court has recognized that the protective scope of Article 20(3) extends to the investigative stage in criminal cases and when read with section 161(2) of Code of

[8]*Ibid.* para 53.
[9]AIR 1997 SC 568.
[10]AIR 1992 SC 1689.
[11](2006) KLT 197.
[12]2007 Cr.L.J. 4466 (Guj.).
[13](2006) Cr.L.J. 2401 (Mad.).
[14]AIR 2010 SC 1974 (2060).

Criminal Procedure, 1973 it protects accused persons, suspects as well as witnesses who are examined during an investigation. The test results cannot be admitted in evidence if they have been obtained through the use of compulsion. Article 20(3) protects an individual's choice between speaking and remaining silent, irrespective of whether the subsequent testimony proves to be inculpatory or exculpatory. Article 20(3) aims to prevent the forcible 'conveyance of personal knowledge that is relevant to the facts in issue'. The results obtained from the each of the impugned tests bear a 'testimonial' character and they cannot be categorized as material evidence. Forcing an individual to undergone any of the impugned techniques violates the standard substantive due process which is required for restraining personal liberty. Such a violation will occur irrespective of whether these techniques are forcibly administered or during the course of an investigation or for any other purpose since the test results could also expose a person to adverse consequences of non-penal nature. The impugned techniques cannot be read into the statutory provisions which enable medical examination during investigation in criminal cases, i.e. sections 53, 53A and 54 of the Code of Criminal Procedure, 1973. Such an expensive interpretation is not feasible in the light of the rule of 'ejusdem generis' and the considerations which govern the interpretation of statutes in relation to scientific advancements. The compulsory administration of any of these techniques is an unjustified intrusion into the mental privacy of an individual. It would also amount to cruel, inhuman or 'degrading treatment' with regard to the language of evolving international human rights norms."

In the case of *Selvi v. State of Karnataka*[15] while discussing the validity of DNA Fingerprinting, Supreme Court observed that the matching of DNA samples is emerging as a vital tool for linking suspects to specific criminal acts. 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, the taking and retention of DNA

[15]AIR 2010 SC 1974 (1978).

samples which are in the nature of physical evidence does not face constitutional hurdles in the Indian context.

In this study the researcher puts an effort to bring out the effectiveness and risks involved in the forensic science tests and also the conflict that exists between the constitutional guarantee given under Article 20(3).

1. 2 STATEMENT OF PROBLEM

Forensic science is that piece without which the puzzle of a criminal investigation incomplete. Without the application of forensic science, criminals can never be convicted unless an eyewitness is present. While detectives and law enforcement agencies are involved in the collection of evidence, be it physical or digital, it is forensic science that deals with the analysis of those evidence in order to establish facts admissible in the court of law. Thus in a world devoid of forensic science, murderers, thieves, drug traffickers and rapists would be is roaming scot-free. The duties and responsibilities of a forensic scientist in a criminal investigation is crucial as it involves the careful examination of an evidence while ensuring that it is not tampered with. A diverse pool of forensic scientists and forensic tools go into the investigation of a criminal act. Thus in this paper we will study how it aids in investigation process and how to connect the evidences with the culprit so to reach out to the actual person who commit crime, so that no innocent gets punished. As a saying is famously said," hundred of criminal scan go unpunished but any innocent must not be punished".

1.3 NEED FOR PRESENT RESEARCH

Whether the case of prosecution is Homicidal or Non-Homicidal it can be determined through the deep analysis and proper examination of forensic evidence. Forensic science helps to determine what actually happened, how the crime has been committed, which procedure is adapted by the offender, by which weapon murder is caused, at what time

the crime is committed, these questions are essential part of investigation process and they could be answered after performing some crucial forensic tests, and these tests cannot be conducted by any person, they must be performed by experts in forensic science as these tests involve technicalities. Some of these tests are mentioned below:

1. Fingerprint Analysis[16] – Fingerprints are unique patterns of lines that consist of ridges and loops which remains the same for rest of our lives. They are unique, permanent, universal, distinguishable and inimitable that are frequently available in crime scene and all these distinctive features makes it crucial as evidence. The items that we touch in our daily lives are often left with impressions of our fingerprints since our body produces oil that acts like invisible ink. These virtually invisible images are generally called latent fingerprints and they can be easily made visible through the application of colored powder used for fingerprinting. Nowadays fingerprints can be identified electronically by using a biometric scanning process known as automated fingerprint identification system. The positive fingerprint matches conducted by an expert witness as a proof of identity are frequently accepted by the courts beyond reasonable doubt.
2. DNA Analysis[17] – DNA profiling is the most potent and versatile mode found till date and holds a special position in criminal investigation and trial. DNA or deoxyribonucleic acid is a molecule that holds the unique genetic information and hereditary characteristics from which the living organisms are originated. DNA profile just like a fingerprint is unique (individualistic). There are two types of DNA, nuclear and mitochondrial DNA though both are used for the identification of individuals but nuclear DNA is widely used for better specific identifications.[18] Through this

[16] http://www.forensicsciencesimplified.org/prints/how.html
[17]J.B. Holton, L. Tyfield, in Scientific Foundations of Biochemistry in Clinical Practice (Second Edition), 1994
[18]O. WHITE, T. DUNNING, in Automated DNA Sequencing and Analysis, 1994

analysis the due materials from the suspected source are compared to ascertain the identity or non-identity of the common source. DNA is very eminent tools for forensic investigation as even the little amount of genetic material can yield enough data for the purpose of comparison.

3. Hair and Fiber Analysis[19] – Human beings constantly sheds materials from their bodies and clothing like hairs or fibers that are adhered to our apparels via carpet, furniture or through such other things. At the crime scene samples of hair are taken and then compared with hair of suspect to establish a similarity within a limited degree of certainty. If the hair still has root tissue on it then there is more possibility for positive identification using DNA analysis. With the help of microscopic examination the size, color, type of hair and fiber samples can be easily determined to conduct comparisons.
4. Serological Analysis[20] – Serology is the scientific study of serums such as blood and other body fluids like saliva, semen, urine, sweat, tears including other liquid secretions. Among all the body fluids blood is most important fluid in crime detection. Blood is about 7% of body weight and has solid and liquid constituents. The liquid constituent is plasma and solid constituent includes red blood cells, white cells and platelets. Blood spatter analysis is a new forensic specialty. The patterns of blood spatter furnish data for reconstruction of crime scene as well[21]. Today it is considered more superior to fingerprints. Body fluids are detected and identified with precision to eliminate potential suspects it is now possible to individualize a given sample of blood and to provide proof in investigation process.

[19] https://archives.fbi.gov/archives/about-us/lab/forensic-science-communications/fsc/july2000/deedric3.htm
[20] J. Ballantyne, in Encyclopedia of Forensic Sciences, 2000
[21] G. Sensabaugh, in Encyclopedia of Forensic and Legal Medicine (Second Edition), 2016

5. Ballistic Analysis – The understanding of Ballistic analysis is essential for investigation in the number of gun related crimes. There are techniques in ballistic science that address the unique aspects of firearm and bullets.[22] There are numerous variants of firearm in each category that are studied precisely and help in gathering more information regarding the crime. In forensics, mainly small arms are encountered. Small arms are small caliber firearms which can easily handled, carried and operated by a single person. The most common firearms used in India includes handguns, pistols, revolvers, rifles, machine guns, sub-machine guns, muzzle loaders and improvised firearms.[23]
6. Toxicological Analysis – Toxicology is that branch of science which deals with poisons, poison can be defined as a substance if consumed either accidently or purposely by a living being can cause adverse effect which may even lead to death. Toxicology deals with the investigation of drugs of abuse or toxic substances. This field involves toxicology and other disciplines such as biotechnology, pharmacology, analytical- and clinical chemistry to aid the legal investigation to find out the actual cause of death.[24] Forensic toxicology incorporates a number of analytical techniques for detection of drugs from a variety of samples procured from the subjects. Drugs are often seen in suicidal, accidental and homicidal deaths. The detection of poisoning and its identification is an important aspect of forensic science. Homicidal poisons are often misused to kill people. Some common homicidal poisons are arsenic, aconite, opium and potassium cyanide. Toxicologists examine blood, urine, hair, oral fluids and other tissues to ascertain the presence and quantity of drugs or poison

[22] https://www.nist.gov/ballistics
[23] https://aboutforensics.co.uk/firearms-ballistics/
[24] [24]https://medcraveonline.com/FRCIJ/forensic-toxicology-biological-sampling-and-use-of-different-analytical-techniques.html

in a person body[25]. Forensic toxicology also involves the usage of some basic principles obtained from other branches of science such as pharmacology, analytical and clinical chemistry for examining the samples and the results are presented before the court. Toxicological reports can assist investigation by showing whether the drug ingested was fatal or not and can calculate the approximate time the drug was introduced into the body.

Other tools and techniques used in forensic investigation includes – Narco-analysis Interrogation (Truth Serum Test), Psychological Detection of Deception (Lie Detector), Brain Mapping and Polygraph Test. Some of the additional forensic technologies that serve major contribution during investigation are Forensic Pathology, Forensic Anthropology, Forensic Odontology, Forensic Psychology and Forensic Engineering.

1.4 IMPORANCE OF PROBLEM

Evidence can be in any form of data or information that is presented in the court which could possibly prove the guilt or innocence of whosoever is the suspect. Forensic science played a vital role by introducing forensic evidence in the field of law. Forensic evidence is obtained by using scientific methods and later called on to be produced in the court. It acts as a proof for the offence or defense and also determines the extent of participation of any person in crime. Forensic evidence is collected, processed, analyzed, interpreted, and presented to provide information regarding the corpus delicti and revelation about the modus operandi. It can be utilized to link crimes that are presumed to be related to one another. This linking of crimes helps the police authorities to narrow the range of possible suspects and to establish patterns of crime that helps in the identification and prosecution of the accused. Some of the common Forensic Evidences are classified as

[25] https://medcraveonline.com/FRCIJ/forensic-toxicology-biological-sampling-and-use-of-different-analytical-techniques.html

physical evidence, transfer evidence, trace evidence, pattern evidence and transient evidence.

- Physical evidence is usually found at crime scenes and contributes in understand the case by perceiving these evidences. Example- fingerprints, footprints, handprints, cut marks, tool marks and such other marks.
- Transfer evidence refers to that evidence which is exchanged as a result of contact between two objects.
- Trace evidence exists in small traces or are very minute in size that usually goes unnoticed and can be transferred or exchanged between two surfaces, example- dust, soil, hair, fiber and other materials.
- Pattern evidence includes finger impressions, foot impressions, gunshot residue and other impressions that are later interpreted to discover the evidence.

Transient evidence are temporary evidence and can be easily altered or lost that must be recorded on the crime spot as soon as possible which includes odors, temperature and certain imprints that doesn't lasts for longer period of time. For the collection of these evidences and their proper care forensic science is needed, as a forensic scientist knows well how to secure blood samples which has already dried up before collection, and how to extract DNA from those samples. Thus forensic science helps at initial level of investigation.

1.5 AIMS AND OBJECTIVES

Forensic science is one of the significant characteristics of criminal justice system. Fundamentally, it deals with exploration of scientific and physical clues gathered from the crime scene. Forensic science explains the distinctiveness (who) of the suspect who committed the crime. The evidence clearly specifies the nature (what) of the crime committed. The circumstantial evidences also speak about the time (when) of the

incident. The forensic evidence proves the location of the offence (where/crime scene).The forensic investigation also observes the method (how) of the offender. Finally, comes to conclude the reason behind the crime. The forensic investigators recreate the distinctiveness of the criminal and the victim

During the whole process of criminal investigation, evidence is gathered from the location of crime or from a person who is an eye witness to the whole incident, examined in a crime laboratory and then the results are presented in the court. Every crime scene is exceptional in nature and each case presents its own challenges. Forensic science plays a crucial role in the criminal justice system by providing scientifically based information through the analysis of physical evidence, the identity of the culprit through personal clues like fingerprint, footprints, blood drops or hair, mobile phones or any other gadgets, vehicles and weapons. It associates with the criminal through objects left by him at the sight and with the victim or carried from the scene and the victim. On the other hand, if the clues recovered do not link the accused with the victim or the scene of occurrence, the innocence of the accused is established. Forensic science, thus, also saves the innocent. Due to the emergence of DNA technology as a modern method of forensic science, provides wonderful amount of information to the investigating officers that enable him to find the criminal purely on the basis of scientific evidence which he has left at the location of crime.

1.6 NATURE AND SCOPE OF FORENSIC SCIENCE TESTS UNDER INDIAN CRIMINAL JUSTICE SYSTEM

The law has frequent need of medical and scientific knowledge, both in pursuing its enquiries and in preparing and presenting evidences for the courts.[26] The importance of this form of evidence is further highlighted by the fact that it aids a judge in determining

[26]Taylor, *Principles and Practices of Medical Jurisprudence*, 18(Churchill Livingstone, London 4th edition 1984)

the extent of liability, which may vary due to such testimony that be imposed on an offender.

As an obviate matter, expert witnesses have an advantage of a particular skill or training, since judges are not properly equipped to draw inferences from facts (as such) in certain technical matters.[27]

The word 'Forensic' comes from Latin term 'Forensis', which means 'of or before forum'.[28] In Roman times, a criminal charge meant presenting a case before a group of public individuals in the forum.[29]

Wharton Law Lexicon defines 'Forensic' as 'Science belonging to the Courts of Justice.'[30] According to Oxford Advanced Learner's Dictionary, 'Forensic' means, "related to or used in Court of Law". And the word 'Science' means, "Knowledge about the structure and the behavior of the natural and the physical world, based on the facts you can prove."[31]

So, 'Forensic Science' can be defined more broadly as that "scientific discipline which is directed to the recognition and evaluation of physical evidence by the application of the natural science for the purpose of administration of criminal justice."[32]

Forensic Science embraces all branches of science and applies them to the purpose of law. Originally, all the techniques were borrowed from various scientific disciplines like Chemistry, Medicine, Surgery, Biology, Photography, Physics and Mathematics.[33] But in the past few years it has developed its own branches which are more or less exclusive

[27]Shashank K. Jain, *Scientific Evidence and Opinion of Experts,*CrLJ, Sep. 2006, p. 209.
[28]Available at http://www.wikipedia.org/wiki/forensicscience, (visited on 20/05/2020)
[29]*Ibid.*
[30]Wharton*Law Lexicon*, 437 (Arkose Press 2001)
[31]*Id.* at p. 1142.
[32]B.S. Nabar, *Forensic Science in Crime Investigation*, 2008, p. 1.
[33]B.R. Sharma, *Forensic Science in Criminal Investigation and Trials*, 1999, p. 3.

domains of forensic science. The science of fingerprints, anthropometry, trademarks, documents and forensic ballistics essentially belongs to forensic science alone.[34]

1.6.1 Main Functional Elements of Forensic Science in Criminal Investigation

The prime functional components of forensic science are as follows:-

a) Corpus delicti – The cause of death could be homicidal, suicidal, accidental or natural. Forensic Science ascertains the cause and nature of death to establish whether the death was homicidal or non-homicidal. It can also differentiate a fake incident from the real one.

b) Modus operandi – The inspection of the corpus delicti, crime scene, evidentiary clues and the surrounding condition indicates the possible modus operandi.

c) Criminal identity – The identity of offender could be discovered with the help of many clues that includes mobile phone records, personal details like SMS, emails, transactions which provides some relevant information about his participation in crime. The culprit may also leave some traces behind like footprints, fingerprints, hair, blood drops, saliva, semen or other body fluids on the victim's body or on weapons at the place of crime. In certain circumstances a series of chain is created all of which when linked together connects a suspect with the crime.

d) Victim identity – Forensic Science through detailed study of personal clues helps to find out the unknown deceased person, any mutilated dead body or any skeletal remains. There are other clues as well that helps in identification of the victim body but DNA profiling and fingerprints gives major hints in this respect.

e) Forensic Scientists – Forensic scientists assists the criminal justice system in many ways. They apply the principles of the physical or natural sciences for the analysis of distinct evidences which is capable of proving the guilt or innocence of the suspect during investigation and trials. A forensic scientist takes the lead of investigation he distinguishes the real crime scene from the fake one. The

[34] *Ibid.*

sequence of events relating to any incident is established by him that aids in further investigation.

1.7 HYPOTHESIS

Forensic science helps the investigating officer in conducting investigation under Indian criminal justice system and thereafter reaching to a logical conclusion so that culprit could be caught without any doubt. Does forensic science tools are helpful in investigation process? Upto what extent it helps to reach to conclusion of investigation? How does it help the investigator to investigate? How evidences are to be collected and stored so that they don't decompose and end in nothing but ashes. Purpose of collecting particular evidence. How does weapons are examined?

1.8 RESEARCH METHODOLOGY

This research will be conducted using a doctrinal approach. In order to draw inferences and conclusions, analytical descriptive, evaluative, and insightful methods were used. A large number of books, journals, papers, documents, and other sources will be examined. In this project, all of the data sources used are secondary in nature. To raise awareness of investigators, prosecutor, attorneys, judges this research has been done. Case reports have been referred to a number of leading books on criminal practice and investigation, including All India Reporter, Supreme Court Cases, and Criminal Law Journal, Magazines, and Web Sources. Around 60% of the investigators are unaware of the concept and the factors to be considered when investigating for a crime.

1.9 SUMMARY OF CHAPTERS

Forensic science is the application of sciences such as physics, chemistry, biology, computer science and engineering to matters of law. Forensic science can help investigators understand how blood spatter patterns occur (physics), learn the composition and source of evidence such as drugs and trace materials (chemistry) or

determine the identity of an unknown suspect (biology).Forensic science plays a vital role in the criminal justice system by providing scientifically based information through the analysis of physical evidence. During an investigation, evidence is collected at a crime scene or from a person, analysed in a crime laboratory and then the results presented in court. Each crime scene is unique, and each case presents its own challenges.
The research work has been divided in five major chapters and further divided into various sub topics and sub to sub topics.

The first chapter which is named an introduction to the Role of Forensic Science in the Investigation of Homicide: A Legal Study. This chapter is an attempt to understand the overview of the research problem and understanding of the basic concepts along with origin and development of Forensic Science.

The second chapter discusses about Prime Components of Forensic Science in Criminal Investigations in which the glimpse of basic elements used in forensic investigations has been highlighted and it also tells about how both science and law are related with each other and shows to what extent science can provide assistance during criminal investigations.

The third chapter deals with the Legal Framework related to Forensic Investigation of Homicide in which Right against self-incrimination: Constitutional and Legal Perspectives has been taken into limelight. It takes into account various constitutional provisions regarding right against self-incrimination and legislative enactments with regard to the validity of forensic evidences.

The fourth chapter of this research work is dealt with Judicial Approach related to Forensic Investigation in which the Judicial Attitude as to the validity of Forensic Science tests has been emphasized on. It takes into account decisions of several High Courts and Supreme Court of India as well.

The fifth chapter attempts to conclusion and suggestion. This chapter finally concludes the study and finally provides some concrete suggestions to some of the issues already discussed in the research.

1.10 CONCLUSION

Forensic science encompasses a broad field of scientific knowledge in pursuit of crime and criminal forensic science has now established firm roots in India in the administration of criminal justice system. We, today, have a well organized network of laboratories, fully equipped with the most modern equipment's and trained manpower to handle it. Unfortunately, in spite of all around developments in forensic science, many police officers still seem to be unaware of the developments and the facilities offered by forensic science, which modern criminals are making the full use of science to commit crimes.

In such a scenario, it is absolutely necessary for the law enforcement agencies to acquire necessary skills and scientific technique to utilize the facilities offered by the rapidly developing forensic science to meet the challenges of crime and criminals.

CHAPTER TWO
PRIME COMPONENTS OF FORENSIC SCIENCE IN CRIMINAL INVESTIGATIONS

2.1 INTRODUCTION

In criminal investigation, utilization of forensic science is need of the modern time. India is missing behind due to lack in use of logical methods in investigation of crime. The utilization of legal proof isn't sufficient in India. Indeed, even in horrifying crimes huge number of hoodlums couldn't be indicted, so a couple of trials end in a conviction with the goal that violations and crooks are expanding step by step. These successive vindications are mostly because of out of date procedure of investigation which leaves numerous escape clauses. Along these lines for powerful investigation, logical proof are unavoidable parts. The acceptability of confirmations so acquired is additionally the matter of mesh concern. Utilization of third degree technique for making admissions has not totally evaporated and their abuse has expanded step by step. The significant level of exoneration cases shows the disappointment on part of indictment predominantly because of ill-advised investigation and witness turning antagonistic. Presently, nowadays the onlooker upon whom the instance of the indictment depends has turned into uncommon animal varieties because of dread of the hoodlums. Additionally, violations are so all around arranged and proficiently carried out by utilizing innovation that confirmations or pieces of information at crime scene is elusive.[35]

The utilization of forensic evidence may diminish the maltreatment of police controls in care. Custodial passing's, torment and mercilessness are wide spread in our framework and being accounted for as and when. Incomparable Court likewise enunciated in *D.K. Basu v. Territory of West Bengal*[36] authorizing offices must act inside the obligations of law and there is requirement for creating logical strategies for investigation and cross

[35] B.S. Nabar, *Forensic Science in Crime Investigation,* 2008, p. 1.
[36] AIR 1997 SC 610

investigation of blamed as custodial passing's and torment is only a blow at the standard of law. There is a wide spread inclination to utilization of the forensic science in criminal investigation. Investigation must bring about finding reality and gathering of proof to the official courtroom in order to see goal of the legal framework i.e finding a fact and decrease the culpability in the public eye with an obstacle impact of reality. At the point when, the investigation office gather the confirmations with no escape clause than just genuine organization of equity should be possible, in any case the path are only the worthless exercise.[37]

2.2 FACTORS AFFECTING EVOLUTION OF APPLICATION OF SCIENCE IN CRIMINAL INVESTIGATION

In this manner the utilization of science in criminal investigation has emerged from the accompanying components[38].

- **Social change**: The quick change of provincial society to urban have made the well established procedure out of date and the need of logical confirmations has been emerged to diminish the pioneer rule.
- **Hiding Facilities**: The snappy methods for gives the office to the crooks to move a great many miles away in the wake of perpetrating crime in scarcely any hours, the individual in question may get away, conceal them. It is huge annihilation of the arrangement that they can't make sure about the nearness of lawbreakers.
- **Technical Knowledge**: The specialized information on a normal man has expanded so the commission of crime has been expanded with the assistance of simple methods for innovation. Along these lines the investigation official consequently required to familiarize themselves with the utilization of innovation and forensic science.

[37] Lovely Das Gupta, "Forensic Science and Crime – A Potent Weapon in Criminal Justice Administration" , *Cr.L.J.*, Feb. 2003, p. 38.
[38] Taylor, *Principles and Practices of Medical Jurisprudence*, 1965, p. 1.

- **Wide field**: The field of exercises of the criminal is extending at upgraded rate. The hoodlums are being national just as worldwide. In the cases like medication dealing, human dealing, budgetary cheats and frauds, the hoodlums make their gathering and plan sorted out crime.
- **Better proof**: The physical proof assessed by a specialist is consistently having an opportunity to be a genuine one. In the event that a unique mark is found at the area of crime, it can have a place with just a single individual. In the event that this individual happens to be suspect, he should represent its quality at the location of crime. Similarly, if a slug is recuperated from dead body it can credited to just a single gun. In the event that this gun happens to be that of the denounced, he should represent its inclusion in the crime. Such proof is consistently verifiable.[39]
- **Speedy and precise equity**: Victim is a definitive victim and he has option to get rapid successful investigation and trial. However, one can't deny casualty's enthusiasm for speedy equity. Logical confirmations may prompt rapid and exact heading for investigation and the declaration of the proof set up in the official courtrooms by the master is likewise impact the decisions.

2.3 PRINCIPLEOF CRIME SCENE INVESTIGATION

the principle that supports crime scene investigation is a concept known as Locard's Exchange Principle, which states that whenever someone enters or exits an environment , something physical is added and removed from the scene, this principles is also defines as " Every contact leaves a trace"[40]. The logic behind this principle helps investigators to link suspects with victims, physical objects, and scenes. Evidences those, link a person to the scene is called as associate evidence. It includes items, as fingerprint, blood, body

[39]B.R.Sharma,Forensic science in criminal investigation and trails, Central New Agency, Allahabad, 1974, p.4

[40] http://www.forensicsciencesimplified.org/csi/principles.html

fluid, weapons, hair and fibers, these evidences helps in answering the question "Who did the crime?"

While reconstructive evidence allows investigators to gain an understanding of what happened at the crime scene as in a case of *Shushant Singh Rajput*[41] where officers of CBI recreated the whole scene to understand what actually happened when Shushant Singh died. A broken window, a blood spatter pattern, bullet paths, shoe print can all reveal what actually happened, these evidences answer "How did it happen?"

2.4 LAW OF INDIVIDUALITY

Each article, normal or man-made, has a singularity which isn't copied in some other item. This rule, from the start sight seems, by all accounts, to be in opposition to basic convictions and perceptions. The grains of sand or basic salt, seeds of plants or twins look precisely indistinguishable. In like manner, man-made articles: coins of a similar section made in a similar mint, cash notes printed with a similar printing squares in a steady progression (barring sequential number) and typewriters of a similar make, model and bunch give off an impression of being undefined. However the independence is consistently there. It is because of little blemishes in the materials, in the game plan of the precious stones, flawed stepping or because of incorporations of some unessential issue. The uniqueness has been checked in specific fields. The broadest work has been done in fingerprints. A large number of prints have been checked however no two fingerprints, even from two fingers of a similar individual have ever been seen as indistinguishable. The law of distinction is of principal significance in forensic science. Everything without exception engaged with a crime, has independence. On the off chance that the rational is set up, it interfaces the crime and the lawbreaker.[42]

[41] https://economictimes.indiatimes.com/magazines/
[42] A. Laxminath, "Criminal Justice in India, Primitism to Post Modernism," *Journal of Indian Law Institute,* Vol. 48, Jan. 2006, p. 26.

2.5 PRINCIPLE OF EXCHANGE

Agreement trades follow is the rule of trade. It was first articulated by the French researcher, Edmond Locard[43]. As per the head, when a lawbreaker or his instruments of crime interact with the person in question or the articles encompassing him, they leave follows. Likewise, the crook or his instruments get follows from a similar contact. In this way, a shared trade of follows like happens between the crooks, the person in question and the articles associated with the crime if these follows are distinguished to the first source, viz., the lawbreaker or his instrument (or the other way around), they set up the contact and pin the crime on to the lawbreaker. The head of trade is suitably shown in attempt at manslaughter arguments and in offenses against individual. The fundamental necessity of the guideline is the right response to the inquiry 'What are the spots or items with which the lawbreaker or his apparatuses really came in contact?' If the exploring official can set up the purposes of contact, he is probably going to procure a rich reap of physical intimations:

1. If a criminal enters the premises through a ventilator, he leaves his impressions in dust on the ledge.
2. If he breaks a window or an entryway, the jimmy leaves its imprints on the wooden casing.
3. The criminal, who opens a safe by a hazardous, leaves the zone around and the garments (counting shoes) secured with protecting material just as some detonated and unexploded touchy materials.

The criminal is probably going to leave and convey minute follows as it were. It is only occasionally that he challenges or fails to leave or convey net articles or follows. On an exhaustive hunt, the unnoticeable follows will consistently be found in a wide range of

[43] http://www.forensicsciencesimplified.org/csi/principles.html

crimes. The moment follows interface the crime and the criminal as successfully as the gross articles or follows.[44]

2.6 LAW OF PROGRESSIVE CHANGE

'Everything changes with the progression of time'. The pace of progress fluctuates hugely with various items. Its effect on forensic science is monstrous. The criminal experiences fast changes. In the event that he isn't caught in time, he gets unrecognizable with the exception of maybe through his fingerprints, bone breaks or different qualities of perpetual (similarly) nature which are not generally accessible. The location of event experiences fast changes. The climate, the vegetable development, and the living creatures (particularly individuals) roll out broad improvements in relatively brief periods. Longer the deferral in inspecting the scene, more noteworthy will be the changes. After some time, the scene may get unrecognizable. The articles associated with crime change steadily, the gun barrels release, metal items rust, the shoes endure extra mileage and the devices procure new surface examples. In course of time the items may lose all handy personality versus a specific crime. The standard, in this way, requests brief activity in all parts of criminal investigation. [45]

2.7 PRINCIPLE OF COMPARISON

Just the like can be thought about is the rule of investigation. It underlines the need of giving like examples and examples to correlation with the addressed things: In a homicide case, a shot is recouped from the perished. The master opines that the slug has been discharged from a gun shooting high speed shots like a rifle. It is worthless to send shotguns or guns as the conceivable presume gun. A lot of hair is recuperated from the hands of a perished. The master opines that the hair have a place with a Negroid individual. Hair from people of white races for investigation won't be of any utilization.

[44] Modi, *Medical Jurisprudence and Toxicology,* 2002, p. 25.
[45] Abhijeet Sharma, "DNA Fingerprinting – A Legal Prospective", *Cr.LJ*, May 2004, p. 143.

The addressed composing is found to have been composing with a ball pen. To send wellspring pen as a conceivable instrument of composing is purposeless. Penmanship accessible on a photo supposedly composed on a divider was contrasted and the example composed on a paper. It didn't give advantageous outcomes. A second arrangement of examples was acquired by composing on a similar divider, at a similar stature and with a similar instrument and afterward captured. It permitted correlation[46].

2.8 PRINCIPLE OF ANALYSIS

The investigation can be no better than the example dissected. Inappropriate examining and tainting render the best investigation futile. The standard accentuates the need of right testing and right pressing for viable utilization of specialists. For instance, a lawbreaker while fleeing from the scene if even brushes against a painted surface. Some powdered particles of paint get kept upon his garments. The researching official pieces a couple of grams of paint from a similar surface with a pen-blade and sends it as control test. The aftereffect of the investigation shows that the two paints don't coordinate. One other model is a modest quantity of residue is recuperated from a little clingy fix of the shoe of a guilty party. The exploring official gathers around two kilograms of soil from the scene packs it in tin and sends it as a control test. The aftereffects of investigation are uncertain. In an assault case, the researching official gathers the garments of the person in question. The fabric conveys both blood and semen stains. The researching official dries the garments and packs them together and sends them through a railroad package. He needs to know whether the garments convey semen stains, and provided that this is true, to which blood bunch does the secretor have a place? The master builds up the presence of semen however neglects to give its blood gathering; since he finds powdered blood adhering to semen stain[47].

2.9 FACTS DO NOT LIE

[46] H.J. Walls, *Forensic Science: An Introductory to Scientific Crime Detection*, 2002, p. 17.
[47] Rattan Singh, "Narcoanalysis: A Volcano in Criminal Investigation System", *Cr.L.J.*, June 2010, p. 171.

'Realities don't lie, men can and do', thus the significance of incidental proof versus oral proof is progressively pertinent. The oral declaration of the observer is changed via auto recommendation, outside impact, proposals, portrayals and assessments of others and defense. Oral proof subsequently is shaded, though material proof is liberated from these ailments. Yet, the material proof can be controlled. Models, (I) an individual is in the military. He is seen doing obligation up to 1 am in the unit. He sneaks past the protected premises, approaches a hundred miles, submits a homicide, comes back to his unit, goes into the monitored premises covertly and is available on the obligation at 7.30 a.m. (ii)A compromises B with death. The following day B is discovered killed. B had no different adversaries aside from A. Police speculates A as the killer. He isn't found anyplace. He is pronounced a declared guilty party. Not long after 'A' shows up before a judge and says he had gone on a journey, however checking at the purportedly visited places, his visits to the spots are not set up. He is captured and arranged. In resistance, he creates the prison record. He was behind the bars at the pertinent time. He gets away from sentence.

2.10 RELATIONSHIP BETWEEN SCIENCE AND LAW

Change is a standard of the universe. Every single part of life is moved by progression of innovative turn of events. Presently a day each angle is administered by logical innovations and revelations logical information has made advances in lawful circle too.[48] Science and law are reliant to one another. The two of them fall under the equivalent legitimate meaning of sciences i.e objective way to deal with settle the complex multifactorial issues. The two of them contact each other at different focuses. Law controls science and individuals devoted in its exploration in like manner the last helps law in scattering of equity. Be that as it may, the accomplishments of balance between the two are a profoundly muddled issue.[49] If we inspect the principles of proof on which whenever was confined. One of them is all realities having objective probative worth, i.e

[48]Vepa P. Sarthi,Law of evidence(Eastern Book Company: Lucknow,2006)p. 7.
[49]P. Venkotesh, Police diaries: Statements,Reports and investigations.

which help the court to arrive at a resolution upon the presence or non presence of the issue in contention, are allowable in proof, except if avoided by some standard of vital importance.20 With the approach of science and innovation, each part of human life has been changed and the court pardon isn't a special case to this standard. Courts also have seen the across the board presentation of various logical evidentiary strategies and advancement giving conceivably significant insightful tools.[50] The significance and the utility of the logical guides in the investigation of crime have been acknowledged. It doesn't require any further legitimization. The logical investigation shapes a significant chain in building up what is known as 'corpus delicti' or the body of the offence.[51] In everywhere throughout the country and even the globe, the utilization of logical methods is grasping. The crime is available in each general public from days of yore, correspondingly the investigation and identification of crime is likewise of a similar period of crime. With the headway of science and innovation, the hoodlums familiarize themselves and receive the new strategies of carrying out crime. For such lawbreakers examiners need to receive the new methods of science and innovation in their investigations. The methods of cross investigation of crooks by utilizing third degree techniques are currently offering approach to new logical strategies for investigation. Specialists have been taking help of forensic science in breaking the cautiously carried out crime. Science is a vital part of the legitimate framework. Courts are vigorously relying on the science for choosing every single case.

2.11 CONCLUSION

Above given all the principles and laws explain broadly, how investigation takes place at a crime scene. How it is restructured by investigators then. The above given principles are followed so that investigator don’t leave behind any relevant information and evidence to reach out to the culprit. And thereafter, there is no lacuna in the presentation

[50] Ekta Gupta, “Lie Detector Test: A Global Prospective”, *Cr.L.J.,* Aug. 2006, p.180.
[51] GunjanAgrahari, “Narco analysis, P300 test, its objective and evidentiary evaluation”, *Cr.L.J.,* July 2007, p. 171.

of evidence in court so that the culprit could be punished for his crime, and no innocent gets punished.

CHAPTER THREE.2.1Genesis and Evolution of the Principle
LEGAL FRAMEWORK RELATED TO FORENSIC INVESTIGATION OF HOMICIDE

3.1 INTRODUCTION

So long as the presumption of innocence remains a part of our legal system, evidence against an accused should come from source other than the accused himself. The purpose and general justification of criminal law is to protect the society, by maintaining social order, by method of social control that maximize individual freedom with the coercive framework of law.[52]It is always the duty of the prosecution in criminal trial, to prove the guilt of the accused beyond reasonable doubt and hence, it cannot coerce the accused to produce document against himself, as Article 20(3) of the Constitution of India states as, "No person accused of an offence shall be compelled to be a witness against himself." This provision embodies the protection against compulsion of self-incrimination.[53] Besides this Constitutional Protection[54] provisions under the Code of Criminal Procedure, 1972, under sections 53, 53-A, 91, 161, 162, 313, 315 and in Indian Evidence Act, 1872 under Sections 24, 25, 26, 27 also provides protection from self-incrimination as provided under Article 20(3) of the Constitution of India.

It therefore can be said that the reason as to why this principle emanated was to protect an individual who had not yet criminated in criminal offence, be subjected to third degree treatment and wrongfully made to incriminate himself and also helps the police to

[52]A. Laxminath, "Criminal Justice in India, Primitism to Post Modernism," *JILI,* Vol. 48, Jan. 2006, p. 29.
[53]Shiv Narayan Dhingra, "Right to Silence of the Accused under Constitution of India," *C.P.S.J.,* Vol. 41, Jan.-June 2007, p. 28.
[54]Under Article 20(3) of the Constitution of India.

following the accusatorial system followed in our country to hunt, for evidence rather than 'to sit in the shade rubbing pepper into some poor devil's eyes.'[55]

3.2 CONSTITUTIONAL PERSPECTIVE

3.2.1Genesis and Evolution of the Principle

The origin of this principle appears to be in England in 14th century in protest against the inquisitorial methods of the Ecclesiastical courts.[56] In England major method of prosecution followed by the courts was the oath. Being man of God, the persons to be tried by it could not lie and if they admit their non-conformist views, they could be seriously punished. By the end of Charles 1st reign a privilege against self incrimination began to be recognized.[57]This principle before the statutory alteration in England, were carried out from America and becomes a part of its common law.[58] Under Amendment-V of the American constitution it is provided that, 'No person shall be compelled in a criminal case to be a witness against himself.'[59]

The privilege ensures that no one can be compelled to give an answer to a question if the answer may implicate him in an offence or convict him of a crime and guarantees that no defendant must take the stand and be subject to cross examination.[60]

The doctrinal origin of the right against self-incrimination could be traced back to the Latin Maxim 'Nemo tentur prodare seipsum' (i.e. no person shall be compelled in any

[55]ThathagataChaudhary, "Narco-analysis and Article 20(3), Blending the realm of individual and societal rights,"*Cr.L.J.*, Jan. 2010, p. 29.
[56]*Supra* note 1 at p. 29.
[57]*Id.* at p. 29.
[58]H.M. Seervai, *Constitutional Law of India: A Critical Commentary 1061* (Eastern Book Company, New Delhi, 2008).
[59]D.V. Chatley, *Constitution of India with exhaustive analytical commentary*282 (LexixNexis, Butterworths1974).
[60]George Felkens, *Constitutional Law for Criminal Justice*254 (Prentice Hall, New Delhi, 1978).

criminal case to give evidence against himself) and the evolution at the concept of 'due process of low enumerated in the Magna Carta.[61]

The use of the ex officio oath by the ecclesiastical courts of medieval England had come under criticism from time to time, and the most prominent cause of discontentment came with its use in the Star Chamber and the High Commissions. Most scholarship has focused on the sedition trial of John Lilbourn in 1637, when he refused to answer questions put to him on the ground that he had not been informed of the contents of the written complaint against him.[62] John Lilbourn went on to vehemently oppose the use of ex-officio oath and the Parliament of the time relented by abolishing the Star Chamber and the High Commission in 1641. This event is regarded as an important landmark in the evolution of the 'right to silence'.

However, in 1648 a special committee of Parliament conducted an investigation into the loyalty of members whose opinions were offensive to the army leaders. The committee is inquisitional conduct and its requirement that the witnesses taken on oath to tell the truth provoked opponents to condemn what they regard as revival at Star Chamber tactics. John Lilbourn was once again tried for treason before this Committee, this time for his outspoken criticism at the leaders who had prevailed in the struggle between the supporters at the monarch and those of the Parliament in the English civil war. John Lilbourn invoked the spirit at Magna Carta as well as the 1628 petition of rights to argue that even after the common law indictment and without oath, he did not have to answer questions against or concerning himself.

He drew a connection between the right against self-incrimination and the guarantee of a fair trial by invoking the idea of 'due process of law' which had been stated in the Magna Carta.

[61]*Selvi v. State of Karnataka*, AIR 2010 SC 1975 (2010).
[62]*Id.*at p. 2010.

John H. Langbein[63]has offered more historical insights into the emergence of 'Right to Silence'. He draws attention to the fact that even though ex officio oaths were abolished in 1641, the practice of requiring defendants to present their own defense in criminal proceedings continued for a long time thereafter. The Star Chamber and the High Commission had mostly tried cases involving religious non-conformists and political dissenters, thereby attracting considerable criticism. Even after their abolitions, the defendants in criminal courts did not have the right to be represented by a lawyer or right to request the presence of defense witnesses. Hence defendants were more or less compelled to testify on their own behalf. Even though the treat of physical torture on account of remaining silent had been removed, the defendant would face a high risk of conviction if he/she did not respond to the charges by answering the material questions posed by the Judge and the prosecutor. In presenting his/her own defense at the trial, there was a strong likelihood that the contents of such testimony could strengthen the testimony of the prosecution and lead to conviction. With the passage of time, the right of a criminal defendant to be represented by a lawyer eventually emerged in the common law tradition. A watershed in this regard was the treason Act of 1696, which provided for a 'right to counsel' as well as 'compulsory process' in cases involving offences such as treason.[64]

The practice of requiring the accused persons to narrate or content the facts on their own corresponds to a prominent feature of an inquisitional system, i.e. the testimony of the accused is viewed as the 'best evidence' that can be gathered. The premise behind this is that innocent persons should not be reluctant to testify on their own behalf. This approach was followed in the inquisitional procedure of the ecclesiastical courts and had thus been followed in other courts as well. The obvious problem with compelling the accused to testify on his own behalf is that an ordinary person lacks the legal training to effectively

[63]John H. Langbein," the historical origins of the privilege against self-incrimination at common law", Michigan Law Review, vol 92, 1994
[64]*Supra* note 10 at p. 2011.

respond to suggestive and misleading questioning, which could come from the prosecutor or the judge. Furthermore, even an innocent person is at an inherent disadvantage in an environment where there may be unintentional irregularities in the testimony. Most importantly the burden of proving innocence by refusing the charges was placed on the defendant himself. In the present day, the inquisitional conception of the defendant being the best source of evidence has long been displaced with the evolution of adversal procedure in the common law tradition. Criminal defendants have been given protections such as the presumption of innocence, right to cancel, the right to be informed of charges, the right to compulsory process and the standard of proving guilt beyond reasonable doubt among others.[65]

3.2.2 Principles behind right against self-incrimination

The reason why the principle of self incrimination developed and protection given under it has been explained by Lord Atkinson as, 'Society is stronger than the individual and is capable of inflicting more harm on the individual than the individual on the society'.[66]

In India, Article 20(3) of Indian Constitution is the syncretistic result of the Anglo-Saxon Jurisprudence and India's realities culture and ethos, providing once again the cosmological nexus of human rights jurisprudence to the world over.[67] It deals with the privilege against self incrimination and has its equivalents in Magna-Carta, the Talmund and the law of almost every country.

In India, Section 3 of the Act 15 of 1852 recognized that the accused in a criminal proceeding was not a competent as a compellable witness for or against himself.[68] This provision was repealed by the Evidence Act, 1872, meanwhile section 203 and 204 of Code of Criminal Procedure, 1861, provided respectively that no oath was to be administered to the accused and it was in the discretion of the magistrate to examine him.

[65]*Ibid.*
[66]*Supra* note 4 at p. 29.
[67]Rattan Singh, "Narco analysis – A Volcano in Criminal Investigation System", *Cr.L.J.*, June 2010, p. 172.
[68]*Supra* note 7 at p. 1061.

Section 250 of the Code of Criminal Procedure, 1872, made compulsory a general questioning of the accused after witnesses for the prosecution had been examined and section 345 provided that no oath or affirmation, was to be administered to the accused.[69] There provisions were continued in the later codes of the criminal procedure and were incorporated into section 342 in CrPC, 1898.

3.3 SCOPE OF THE CONSTITUTIONAL RIGHT AGAINST SELF-INCRIMINATION

A great concern for an individual's dignity and inviolable right is to be found in the constitutional protection namely "the protection against self-incrimination."

Clause (3) of Article 20 declares that, 'No person accused of an offence shall be compelled to be a witness against himself.' This provision embodies the protection against compulsion of self-incrimination. The framers of the Constitution have had by and large participated in the independence struggle and most of them being advocates, were well aware of the police torture and methods of extracting confession, so it was incorporated in the constitution by the framers of the constitution and it was made a constitutional prohibition.

It is always the duty of the prosecution in criminal trial, to prove the guilt of the accused beyond reasonable doubt and hence, it cannot coerce the accused to produce documents against him. The conditions for the applicability of Article 20(3) are:

1. There must be a person accused of an offence.
2. There must be compulsion against such person.
3. Such compulsion must be to be a witness against himself.

On the basis of these conditions, the scope of this principle of right against self incrimination may be discussed as under:

[69] *Ibid.*

3.3.1 Person accused of an offence

These words indicate that protection of this clause to criminal proceedings or proceedings of that nature before a court of law or other tribunal before whom a person may be accused of an 'offence' as defined under section 3 (38) of the General Clauses Act.

The person who is alleged to have been 'compelled' must at the time filled the character of an accused person. So, this clause applies only to a criminal prosecution the 'person compelled' must have been 'accused person' in a criminal prosecution and if a person not, at the time, accused of any criminal offence, is compelled to give evidence and such evidence ultimately lead to a criminal prosecution being launched against him, there is no violation of Article 20(3). It would not therefore extend to parties and witnesses in civil proceedings, and proceeding other than criminal, in such proceedings, a person cannot refuse to give an answer on the plea that it might tend to subject him to a criminal prosecution at a future date.

When does a person become an accused? The decision in the *Nandini Sathpathy's* case[70]has now established that even at the stage of the police interrogation by way of investigation into an offence a person can be accused, and such a person is entitled to the prosecution of Article 20(3) of Constitution of India.

Thus, the guarantee of immunity is limited to those 'accused of an offence' and does not apply to witnesses or to civil proceedings. In England both the accused and the witnesses in any proceedings are protected from answering questions which may result in criminal prosecution or any other penalty or forfeiture.

3.3.2 'Compulsion' to be a witness

Compulsion in the context of clause (3) of Article 20 must mean what in law is called 'duress'. The compulsion in this sense is a physical objective act and not the state of

[70]*NandiniSathpathy v. P.L. Dhani,* AIR 1978 SC 1075.

mind of the person making the statement.[71] Except where the mind has been so considered by some extraneous process, as to render making of the statement involuntary and therefore extorted.[72]

An exemplary definition of 'compulsion' was established in *NandiniSathpathy v. P.L. Dhani*[73] by Justice Krishna Iyar as, "Compulsion is evidence procured not only by physical threats or violence but also by psychic torture, atmospheric pressure, tiring interrogative prolixity, overbearing and intimidatory methods." A person who voluntarily answers the questions from the witness box waives his privilege under clause 3 of Article 20.

The question of what constitutes 'testimonial compulsion' for the purpose of Article 20(1) was addressed in *M.P. Sharma v. Satish Chandra***.**[74] In this case, the court considered whether the issuance of search warrants in the course of an investigation into the affairs of a company amount to an infringement of Article 20(3). The search warrants issued under section 96 of the erstwhile Code of Criminal Procedure, 1898 authorized the investigating agencies to search the premises and seize the documents maintained by the said company. The important observation made by Jagannadhadas. J, are as follows:[75]

"The phrase used in Article 20(3) is 'to be a witness'. A person can 'be a witness' not merely by giving oral evidence but also by producing documents or making intelligible gestures as in the case of a dumb witness."

3.4 TO BE A WITNESS AGAINST HIMSELF

[71]Subhash Kashyap, *Constitutional Law of India*655 (Universal Law Publishers, New Delhi, 2008).
[72]*Ibid.*
[73]AIR 1978 SC 1025.
[74]AIR 1954 SC 300.
[75]*Id.* at p. 302.

The compulsion to which clause (3) of Article 20 refers is the compulsion of an accused person to be a witness against himself, so the question arises as to what meaning is to be given to the phrase 'to be witness' against himself.

'To be a witness' may be equivalent to 'furnishing evidence' in the sense of making oral or written statements, but not in the larger sense of the expression so as to include thumb impression, impression of the palm or foot or finger or specimen writing for the purpose of identification. Furnishing evidence in the later sense could not have been within the contemplation of the constitution makers for the simple reason that though they may have intended to protect an accused person from the hazards of self-incrimination.

The accused person cannot be asked to disclose documents or things which are incriminatory and contain his statements. It is not therefore permissible to a police officer to issue an order or the court to issue a summons to accused persons in his custody, or persons present in court, to attend and produce any document, for such, compulsory process amounts to compulsion within the meaning of Article 20(3).[76] Being a witness means furnishing evidence oral or documentary or testimonial. In its ordinary grammatical sense, it may mean only giving oral evidence, but in the present context it is not so limited.[77] The scope of Article 20(3) was considered by Supreme Court at great length in *NandiniSathpathy v. P.L. Dhani***.**[78] The Supreme Court observed:

1. If there is any mode of pressure, subtle or crude, mental or physical, direct or indirect, but sufficiently substantial applied by the policeman for obtaining information from an accused strongly suggestive of guilt, it becomes compelled testimony violative of Article 20(3).
2. Legal penalty may be itself not amount to duress, but the manner of mentioning it to the victim of interrogation may introduce an element of tension. Compelled

[76]*State of Gujrat v. ShyamLal Mohan Lal Choksi*, AIR 1965 SC 1251.
[77]*M.P. Sharma v. Satish Chandra,* AIR 1954 SC 300.
[78]AIR 1978 SC 1025.

testimony was evidence procured not merely by physical threats or violence but by psychic torture, atmospheric pressure, environmental coercion, tiring interrogative prolixity, overbearing and intimidatory methods and the like.

3. The expression 'Accused of an offence' must mean, formally accused *in praesenti* and not in*Futuro.* Any giving of evidence, any furnishing of it likely to have an incriminating impact, answer the description of being witness against himself.
4. In determining the incriminatory character of an answer the accused is entitled to consider and the court while adjudging will take note of the setting, the totality of circumstances, the equation, personal and social, which have a bearing on making an answer substantially innocent but in effect guilt of import. However, fanciful claims, unreasonable apprehensions and vague possibilities cannot be the hiding ground for an accused person. He is bound to answer where there is no clear tendency to incriminate.

This right has not only been embodied in statute books by most commonwealth jurisdictions but also accepted by the international community as a fundamental rule of criminal law.[79] This aspect relating to "right to silence", silence came to be included in Universal Declaration of Human Rights, 1948. Article 14(3)(g) of International Covenant on Civil and Political Rights, 1966 to which India is a party refers to various 'minimum guarantees' and states that everyone has right not to be compelled to testify against himself or to confess his guilt. The European Convention for the protection of the Human Rights and Fundamental Freedoms states in Article 6(2) that every person charged with a criminal offence shall be presumed innocent until proved guilty according to law. Most commonwealth jurisdiction provides expressly or by necessary implications, a fundamental right against self-incrimination.

3.5 LEGISLATIVE PROVISIONS

[79]Avinash Sharma and Prachi Gupta, "Right to Silence, an indispensable right in Criminal Jurisprudence", *Nyaydeep,* Vol. IX, July 2008, p. 73.

The criminal justice system should be based on just and equitable principles. The integrity of any judicial system depends upon the efficiency with which the trial is conducted. If any trial rests on the basis that the evidence adduced or the investigation procedure is flawed with the accused being forced to self incriminate, it would amount to losing accountability and virtually having no credibility of its own.

Apart from the protection under Clause 3 of Article 20 of the Indian constitution which guarantees fundamental right against self-incrimination, Article 21 grants a further fundamental right i.e. right to life and personal liberty and states that the liberty of the person cannot be curtailed except by procedure laid down by law. And this procedure must be fair, just and equitable.[80]

Besides, these constitutional provisions, the legislative provisions under Code of Criminal Procedure, 1973, Indian Evidence Act, 1872 also need to be discussed and analyzed.

3.6 CRIMINAL PROCEDURE CODE, 1973

The Criminal Procedure Code contains several provisions which correspond with the spirit of Article 20(3) of the Constitution.

3.6.1 Section 53 – Examination of accused by medical practitioner at the request of Police Officer: *This section provides as under:*

(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 its 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 all examination of the

[80] *Maneka Gandhi v. Union of India*, (1978) 1 SCC 248.

person arrested as is reasonable necessary in order to ascertain the facts which may afford such evidence, and to use such force as is reasonably necessary for that purpose.

(2) Whenever the person of a female is to be examined under this section, the examination shall be made only by, or under the supervision of, a female registered medical practitioner.

In the explanation to the section, it is provided that:

(a) "Examination" shall include the examination of blood, blood stains, semen, swab in case of sexual offences, sputum and sweat, hair samples and finger nail clippings by the use of modern and scientific techniques including the DNA profiling and such other tests which the registered medical practitioner thinks necessary in a particular case.

(b) "registered medical practitioner" means a medical practitioner who possesses any medical qualification as defined in clause (h) of section 2 of the Indian Medical Council Act, 1956 and whose name has been entered in a state medical register.

The medical examination contemplated by the section is in respect of 'person arrested on a charge of committing an offence.' Even if an accused person is released on bail, he is still 'a person arrested on a charge of committing an offence.'[81] The statements of objects and reasons of the code starts that this provision has been made to facilitate the effective administration.[82]

It is open to the court which is seized of the matter to issue directions or to grant approval or permission to the police for carrying out further investigation, but after satisfying following conditions:[83]

1. The person must have been arrested.

[81]R.V. Kelkar, *Criminal Procedure Code*, 72 (Eastern Book Company, New Delhi, 2005).
[82]Ratan Lal & Dhiraj Lal, *Code of Criminal Procedure*100(Lexis Nexis, New Delhi, 2002).
[83]*Ananth v. State of A.P.*, AIR 1977 AP 1797.

2. The arrest must have been made on a charge of having committed an offence of such a nature and under such circumstances that there are reasonable grounds for believing that the examination of his person will afford evidences as to the commission of an offence.
3. The request for such examination must come from police officer not below the rank of sub inspector.
4. The examination made by the registered medical practitioner with the aid of any other person acting in good faith.
5. The examination must be such as is reasonably necessary to ascertain the facts which may afford evidence as to the commission of an offence, and no more force is used as is reasonably necessary for that purpose.
6. Where the person to be examined is female, the examination must be made only by or under the supervision of a female registered medical practitioner.
7. It can be easily inferred from the bare reading of the aforesaid section alongwith explanation that the term 'examination' used in the explanation is very wide and includes modern scientific techniques of investigation.[84] The obtaining of such evidence, it has been held, is not violative of Article 20(3) of the Constitution which grants protection against self-incrimination.

K.G. Balakrishnan, C.J.I. observed in *Selvi v. State of Karnataka*.**[85]**

"We are inclined towards the view that the results of the impugned tests should be treated as testimonial acts for the purpose of right against self-incrimination. Therefore, it would be prudent to state that the phrases and such other tests (which appears in the explanation to Sections 53, 53-A, 54 of CrPC)should be read so as to confine its meaning to include only those tests which involve the examination of physical evidence."

[84]Naresh Kumar and Ved Pal Singh, "Narco analysis Test in investigation process: Law and Judiciary," *MDULJ*, Vol. XIV, Part I, 2009, p. 110.
[85]AIR 2010 SC 1975 (2036).

In the light of this discussion there are some clear obstructions to the dynamic interpretation of the amended explanation to sections 53, 53-A, 54 of the CrPC. The general words in question i.e. 'and such other tests' should ordinarily be read to include tests which are in the same genre as the other forms of medical examination that have been specified.[86]

3.6.2 Section-53A – Examination of person accused of rape by Medical Practitioner:

This section provides as under:

1. When a person is arrested on a charge of committing an offence of rape or an attempt to commit rape and there are reasonable grounds for believing that an examination of his person will afford evidence as to the commission of such offence, it shall be lawful for a registered medical practitioner employed in a hospital run by the Government or by a local authority and in the absence of such a practitioner within the radius of sixteen kilometers from the place where the offence has been committed by any other registered medical practitioner, acting at the request of a police officer not below the rank of a sub-inspector, and for any person acting in good faith in his aid and under his direction, to make such an examination of the arrested person and to use such force as is reasonably necessary for that purpose.
2. The registered medical practitioner conducting such examination shall, without delay, examine such person and prepare a report of his examination giving the following particulars, namely:--
    i. the name and address of the accused and of the person by whom he was brought,
    ii. the age of the accused,
    iii. marks of injury, if any, on the person of the accused,

[86] *Id.* at p. 2038.

iv. The description of material taken from the person of the accused for DNA profiling, and".

v. Other material particulars in reasonable detail.

3. The report shall state precisely the reasons for each conclusion arrived at.
4. The exact time of commencement and completion of the examination shall also be noted in the report.
5. The registered medical practitioner shall, without delay, forward the report of the investigating officer, who shall forward it to the Magistrate referred to in section 173 as part of the documents referred to in clause (a) of sub-section (5) of that section.

This section was inserted in Criminal Procedure Code by Act 26 of 2005, to regulate the examination of the person of the accused of rape. The accused cannot deny such examination by seeking the help of Article 20(3).

3.6.3 Section 91 – Summons to produce documents or other things: This section provides as under:

1. Whenever any court or any officer in charge of a police station considers that the production of any document of or other thing is necessary or desirable for the purposes of any investigation, inquiry, may issue a summons, or such officer a written order, to the person in whose possession or power such document or thing is believed to be requiring him to attend and produce it or to produce it at the time and place stated in the summons or order.
2. Any person required under this section merely to produce a document or other thing shall be deemed to have complied with the requisition if he causes such document or thing to be produced instead of attending personally to produce the same.
3. Nothing in this section shall be deemed (a) to affect sections 123 and 124 of the Indian Evidence Act, 1872, or the Banker's Books Evidence Act, 1891 or (b) to

apply to a letter, post card, telegram, or other document or any parcel or thing in the custody of the postal or telegraph authority.

Under section 91, a police officer or a court may, under certain circumstances issue an order or a summon for the production of document or other things if such production is necessary or desirable for the purpose of any investigation, inquiry, trial or other proceedings.

The language of the section is general and prima facie apt to include an accused person. But it would be an odd procedure for a court to issue a summons to an accused person, present in court 'to attend and produce' a document, and if this section so construed so widely as to include an accused person, it would be violative of Article 20(3) of the Constitution, which embodies the principle of right against self incrimination.[87]

3.6.4 Section 161 – Examination of witness by Police: *This section provides as under:*

1. Any police officer making an investigation under this Chapter, or any police officer not below such rank as the State Government may, by general or special order, prescribe in this behalf, acting on the requisition of such officer, may examine orally any person supposed to be acquainted with the facts and circumstances of the case.
2. Such person shall be bound to answer truly all questions relating to such case put to him by such officer, other than questions the answers to which would have a tendency to expose him to a criminal charge or to a penalty or forfeiture.
3. The police officer may reduce into writing any statement made to him in the course of an examination under this section; and if he does so, he shall make a separate and true record of the statement of each such person whose statement he records.

[87] *State of Gujarat v. ShyamLal*, AIR 1965 SC 1251.

The object of section 161 is to obtain evidence which may later be produced at the trial. Sub-section (2) of this section provides that an accused is not bound to make any statement during the police interrogation and is entitled to keep his mouth shut if the answer sought has a reasonable prospect of exposing him in some other accusation actual or imminent, even though the investigation under way is not with reference to that. It was also held in the case of *NandiniSathpathy v. P.L. Dhani***,**[88] that section 161 of Criminal Procedure Code, 1973 and Article 20(3) of the constitution substantially cover the same area, so far as the police investigation are concerned. The ban on self accusation and the right to silence when one accusation or trial is underway goes beyond that care and protect the accused in regard to other offences.

The 'right against self-incrimination' protects persons who have been formally accused as well as those who are examined as suspects in criminal cases. It also extends to cover witnesses who apprehend that their answers could expose them to criminal charges in the ongoing investigation or even in cases other than the one being investigated.[89]

Even though section 161(2) of the CrPC. casts a wide protective net to protect the formally accused persons as well as suspects and witnesses during the investigative stage, section 132[90] of the Evidence Act limits the applicability at this protection to witnesses during the trial stage. The later provisions provide that witnesses cannot refuse to answer questions during a trial on the ground that the answers could incriminate them. However, the proviso to this section stipulates that the contents of such answers cannot expose the witnesses to arrest or prosecution, except for a prosecution for giving false evidence.

[88](1978) 2 SCC 424.

[89]*Selviv. State of Karnataka*, AIR 2010 SC 1974 (2010).

[90]Section 132 – "witnesses not excused from answering on ground that answer will incriminate – a witness shall not be excused from answering any question as to any matter relevant to the matter in issue in any suit or in any civil and criminal proceeding, upon the ground that answers to such question will criminate, or may tend, directly or indirectly to criminate, such witnesses, or that it will expose, or tend directly or indirectly to expose such witnesses to a penalty or forfeiture of any kind.

Proviso – Provide that no such answer, which the witnesses shall be compelled to give, shall subject him to any arrest or prosecution, or be proved against him in any criminal proceeding, except a prosecution for giving false evidence by such answer."

Therefore, the protection accorded to witnesses at the stage of trial is not as wide as the one accorded to the accused, suspects and the witnesses during the investigation under section 162(2), CrPC. Furthermore, it is narrower than the protection given to the accused at trial stage under section 313(3) and proviso (b) to section 315(1). The legislative intent is to preserve the fact finding function of a criminal trial.[91]

Since the extension of the 'right against self-incrimination' to suspects and witnesses has its basis in section 161(2), CrPC. it is not readily available to persons who are examined during proceedings that are not governed by the code. There is a distinction between proceedings of a purely criminal nature and those proceedings which can culminate in punitive remedies and yet cannot be characterized as criminal proceedings. The consistent position has been that ordinarily Article 20(3) cannot be invoked by witnesses during the proceedings that cannot be characterized as criminal proceedings. In administrative and quasi-criminal proceedings, the protection of Article 20(3), becomes available only after a person has formally accused of committing an offence. For instance, in *Raja NarayanlalBansiLal v. ManeckPhirozMistry*,**[92]** the contention related to the admissibility at a statement made before an inspector who was appointed under the Companies Act, 1923 to investigate the affairs of a company and report therein. It had to be decided whether the persons who were examined by the concerned officer could claim the protection at Article 20(3). The question was answered as:

"The scheme of the relevant sections is that the investigation begins broadly with a view to examine the management of the affairs of the company to find out whether any irregularities have been committed or not. In such a case there is no accusation, either formal or otherwise, against any specified individual, there may be general allegation that the affairs are irregularly, improperly and illegally managed, but who would be responsible for the affairs which are reported to be irregularly managed is a matter which

[91]*Selviv. State of Karnataka,* AIR 2010 SC 1974 (2020).
[92]AIR 1961 SC 429.

would be determined at the end of the enquiry. At the commencement of the enquiry and indeed throughout its proceedings there is no accused person, no accuser, and no accusation against anyone that he has committed an offence. In our opinion a general enquiry into the affairs of a company thus contemplated cannot be regarded as an investigation which starts with an accusation contemplated in Article 20(3) of the Constitution."[93]

3.6.5 Section 162 – Statements to police not to be signed: Use of statements in evidence: *This section provides as under:*

(1) No statement made by any person to a police officer in the course of investigation under this chapter shall, if reduced to writing, be signed by the person making it, nor shall any such statement or any record thereof, whether in a police diary or otherwise, or any part of such statement or record, be used for any purpose, save as hereinafter provided, at any inquiry or trial in respect of any offence under investigation at the time when such statement was made.

Provided that when any witness is called for the prosecution in such inquiry or trial whose statement has been reduced into writing as aforesaid, any part of his statement, if duly proved, may be used by the accused, and with the permission of the court, by the prosecution, to contradict such witness in the manner provided by section 145 of the Indian Evidence Act, 1872 and when any part of such statement is so used, any part thereof may also be used in the re-examination of such witnesses but for the purpose only at explaining any matter referred to in his cross-examination.

(2) Nothing in this section shall be deemed to apply to any statement falling within the provisions of clause (1) of section 32 of the Indian Evidence Act, 1872 or to affect the provisions of section 27 of that Act.

[93] *Id.* at p. 438.

Explanation – An omission to state a fact or circumstances in the statement referred to in sub-section (1) may amount to contradiction if the same appears to be significant and otherwise relevant having regard to the context in which such omission occurs and whether any omission amounts to an contradiction in the particular context shall be question of fact.

This section prohibits an officer to obtain information under compulsion and provides that no investigating officer can extract any information by using inducement, threat or promise as also provided under section 24 of the Indian Evidence Act, 1872. The guidelines provided by section 161(1) are applicable not only in respect of a police officer but also in respect of a person in authority.[94]

3.6.6 ***Section 313 – Power to examine the accused:*** This section provides as under:

(1)In every inquiry or trial, for the purpose of enabling the accused personally to explain any circumstances appearing in the evidence against him, the court-

(a)May at any stage, without previously warning the accused put such questions to him as the court considers necessary;

(b)Shall after the witnesses for the prosecution have been examined and before he is called on for his defense question him generally on the case:

Provided that in a summons-case where the court has dispensed with the personal attendance of the accused, it may also dispense with his examination under clause (b).

(2) No oath shall be administered to the accused when he is examined under sub-section (1).

(3)The accused shall not render himself liable to punishment by refusing to answer such question, or by giving false answers to them.

[94]*Supra* note 30 at p. 148.

(4) The answers given by the accused may be taken into consideration in such inquiry or trial, and put in evidence for or against him in any other inquiry into, or trial for, any other offence which such answers may tend to show he had committed.

This section empowers the court to examine the accused after the evidence for the prosecution has been taken. The object of empowering the court to examine the accused is to give him an opportunity of explaining any circumstances which may incriminate him.[95]

No presumption arises, ipso facto, from the silence of a accused person. The fact of silence may, with all other circumstances of the case, be taken into account in a proper case, but even then, it must be clearly borne in mind that an accused person always has a right to remain silent, if he wishes; and, the silence of the accused must never be allowed, to any degree, to become a substitute for proof by the prosecution of its case.[96]

This section of the Criminal Procedure Code, 1973, protects the right to silence at the time of the trial and states that the accused shall not be liable to punishment for reason of refusal to answer any question put to him.[97]

3.6.7 Section 315 – Accused person to be a competent witness*:* *This section provides as under:*

(1)Any person accused of an offence before a Criminal Court shall be a competent witness for the defense and may give evidence on oath in disproof of the charges made against him or any person charged together with him at the same trial:

Provided that-

(a)he shall not be called as a witness except on his own request in writing;

[95]Rattan Lal and Dhiraj Lal', The Code of Criminal Procedure 602 (Lexis Nexis, 2010).
[96]*Supra* note 30 at p. 956.
[97]*Supra* note 27at p. 89.

(b)his failure to give evidence shall not be made the subject of any comment by any of the parties or the Court or give rise to any presumption against himself or any person charged together with him at the same trial.

(2) Any person against whom proceeding are instituted in any Criminal Court under section 98, or section 107, or section 108, or section 109, or section 110, or under Chapter IX or under Part B, Part C or Part D of Chapter X, may offer himself as a witness in such proceedings:

Provided that in proceedings under section 108, section 109 or section 110, the failure of such person to give evidence shall not be made the subject or any comment by any of the parties or the court or give rise to any presumption against him or any other person proceeded against together with him at the same inquiry.

This section lays down that an accused person is a competent witness for the defense and like any other witness he is entitled to give evidence on oath in disproof of the case laid against him by prosecution.[98]The Supreme Court in *Gajendra Singh v. State of Rajasthan***,**[99]said that he could not be denied the opportunity of producing documents on which he wanted to rely. He was not to be disallowed only because he did not do so before his evidence was recorded. The matter was remitted to the trial court to enable the court to permit him to produce the documents.[100]

Section 315(1) of the Criminal Procedure Code contains proviso and clause (b) of said proviso, provides that failure of the accused person to give evidence shall not be made the subject of any comment by any of the parties or court or gives rise to any presumption against himself and the other co-accused.[101]

3.7 INDIAN EVIDENCE ACT, 1872

[98]*Supra* note 30 at p. 967.
[99](1998) 8 SCC 612.
[100]*Supra* note 43at p. 615.
[101]*Supra* note 29 at p. 415.

In Indian Evidence Act, 1872, under various sections also provides right against self-incrimination as provided under Article 20(3) of Constitution of India.

3.7.1 Section 24 – Confession caused by inducement, threat or promise, when irrelevant in criminal proceedings: *This section provides as under:*

(1) A confession made by an accused person is irrelevant in a criminal proceeding, if the making of the confession appears to the Court to have been caused by any inducement, threat or promise having reference to the charge against the accused person, proceeding from a person in authority and sufficient, in the opinion of the Court, to give the accused person grounds, which would appear to him reasonable, for supposing that by making it he would gain any advantage or avoid any evil of a temporal nature in reference to the proceedings against him.

Section 24 of the Indian Evidence Act, 1972, is an extension or reflection of Article 20(3) of the Constitution of India. This section provides that confession made by an accused is irrelevant in a criminal proceeding, if the making of the confession appears to the court to have been caused by any inducement, threat or promise. The ground of the reject of a confession, which is not voluntary, is a danger that a prisoner may be induced by hope or fear to incriminate himself. Whenever it is clear that the confession was made under threat the same has been held to be in admissible and irrelevant.[102]

In a recent decision in *Thiogbaijam v. State of Manipur*[103] this principle has been reaffirmed by the Guwahati High Court that the confession must not be the result of inducement, threat or promise as envisaged under the Evidence Act. Thus, the accused can invoke his constitutional privilege of silence and refuse to answer any questions that are put to him when the answer is likely to incriminate him and in such a care no adverse inference can be drawn against him.

[102]GunjanAgrahari, "Narcoanalyais P-300 Test, its objectives and evidentiary evaluation", Cr.L.J., July 2007, p. 173.
[103](2005) Cr.L.J. 4780 (Guj).

3.7.2 Section 25 – Confession to police officer not to be proved: *This section provides as under:*

No confession made shall be proved as against a person accused of any offence.

Similar protection is available to the accused under section 25 of Indian Evidence Act, 1972 as provided in the Article 20(3) of the Constitution. The legislature, apprehensive that the police might extort confessions from accused by intimidatory methods, inserted this section as a measure to safeguard for the accused.

3.7.3 Section 26 – Confession by accused while in police custody not to be proved against him: *No confession made by any person whilst he is in the custody of a police-officer, unless it be made in the immediate presence of a Magistrate, shall be proved as against such person.*

Similarly section 26 of Indian Evidence Act renders any confession made in police custody to be inadmissible except when the same is made in presence of magistrate. This section is based on the same fear i.e. use of force by the police.

Thus, it is clear that the court can't draw any adverse inference against the accused from his silence or refusal to answer any questions. It is manifest to everyone's experience that from a moment the person feels himself in custody, his mental condition undergoes a remarkable change and he naturally becomes much more accessible to every influence that address itself to either his hopes or fear.

3.7.4 Section 27 – How much of Information received from the accused may be proved: *This section provides as under:*

Provided that, when any fact is deposed to as discovered in consequence of information received from a person accused of any offence, in the custody of a police officer, so much of such information, whether it amounts to a confession or not, as relates distinctly to the fact thereby discovered, may be proved.

This section is an exception to the exclusionary rules enacted in sections 24, 25 and 26, which are themselves exceptions to the rule that confession is provable against its maker as an admission.[104] This section seems to be based on the view that if a fact is actually discovered in consequence of information given, some guarantee is afforded thereby that the information was true and accordingly can be safely allowed to be given in evidence.[105]

In the case of *State of Bombay v. Kathi Kalu Oghad*,[106] it was urged by the defense that section 27 was ultra vires, as it offends the protection guaranteed under Article 20(3), Supreme Court of India in this case held that compulsion not being inherent or implicit of the fact of the information having been received from the person in custody, the contention that section 27 of the Evidence Act necessarily infringes Article 20(3) of the Constitution cannot be accepted. Further as to the statements admissible under section 27, the court held that if the compulsion proved in the court statement cannot be admitted as violated the Article 20(3) right against self-incrimination.[107]

It has already been discussed that section 161, CrPC. which protects the accused as well as the suspect and witnesses who are examined during the course of investigation in criminal case. However, section 27 of the Evidence Act incorporates the theory of confirmation by subsequent fact i.e. statements made in custody are admissible to the extent that they can be proved by the subsequent discovery of the relevant facts rather than their discovery through independent means. Hence, such statements could also be described as those which 'furnish a link in the chain of evidence' needed for a successful prosecution.[108]

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[104]M. Monir, *Law of Evidence*,182 (Universal Law Publications, New Delhi, 2009).
[105]*Ibid.*
[106](1963) SCJ 195.
[107]*Id.* at p. 196.
[108]*Selvi v. State of Karnataka*, AIR 2010 SC 1974 (2023).

This provision permits the derivative use of custodial statements in the ordinary course of events. In Indian law, there is no automatic presumption that the custodial statements have been extracted through compulsion.

The relationship between section 27 of the Evidence Act and Article 20(3) of the Constitution has been clarified in *State of Bombay v. Kathi Kalu Oghad*.[109] It was observed in the majority opinion by Jagannath Das, J.:

"The information given by an accused person to a police officer leading to the discovery of a fact which may or may not prove incriminatory has been made admissible in evidence by this section. If it is not incriminatory at the person giving the information, the question does not arise. It can arise only when it is of an incriminatory character so far as the giving of information is concerned. If the self incriminatory information has been given by an accused person without any threat that will be admissible in evidence and that will not be hit by the Article 20(3) of the Constitution for the reason that there has been no compulsion. It must, therefore, be held that the provisions of section 27 of the Evidence Act are not within the prohibition aforesaid, unless compulsion has been used in obtaining the information."

3.8 CONCLUSION

To summarize, it may be said that Article 20(3) of the Constitution was primarily incorporated to ensure that no torture is subjected on the accused to extract confession. This right was raised to the constitutional pedestal despite adequate protection being available under Criminal Procedure Code, 1973 and in Indian Evidence Act, 1872 but the intent of the legislature was never to shut out scientific investigation otherwise the same could have been expressly provided in the statute itself. If the courts are apprehensive of irregularities in obtaining samples of blood, hair or other bodily fluids, adequate safeguards like taking samples in the presence of court appointed amicus curiae or in

[109]AIR 1961 SC 1808 (1833).

front of court itself can be resorted to. Imposing total ban on taking samples of blood, bodily fluids to match them with the scene of crime would do no good but falter the investigation and ultimately lead to miscarriage of justice. It has been rightly observed by Ashok Chugh that if the right against self-incrimination is to be considered as one of the fundamental rights tenets of fair trial peculiarities like narrow construction of the term 'to be a witness' and distinction between 'real' and 'testimonial' evidence are unnecessary to achieve the equilibrium between societies needs to control crime and conviction of guilty vis-à-vis protection of individual from unlawful and unfair treatment.[110]

An important aspect of Justice Malimath Committee report is also with regard to the inviolable rule as to the 'right to silence' of the accused at all times, and in all cases. The Law Commission of India in its 180th report has stated unequivocally that any move to amend the provisions of the Code of Criminal Procedure, 1973 in the manner that Malimath Committee has suggested would be ultra-vires of Article 20(3) and Article 21 of the Constitution of India.

[110]Ashok Chugh, "A reassessment of self-incrimination clause", (2006) 8 SCC Journal 19.

CHAPTER-FOUR
JUDICIAL APPROACH REGARDING FORENSIC INVESTIGATION OF HOMICIDE

4.1 INTRODUCTION

One can understand the policy adopted by the courts that a person is presumed to be innocent till proved guilty, but one can't understand the policy of the courts that the investigating agency is not to be cooperated in investigation by accused and all hurdles are to be created in the way of investigating agency in proving the guilt of the accused.[111]

This was not the true spirit of Article 20(3), as long as the "presumption of innocence" remains as one of the fundamental canons of criminal jurisprudence that evidence against the accused should come from the sources other than the accused.[112]

The wide interpretation given by the courts to the provision of Article 20(3) of the Constitution and other statutory provisions guaranteeing the right against self-incrimination is clearly reflected in *Nandini Sathpathy's* case**.**[113]A complaint was filled by a Deputy Superintendent of Police, Vigilance (Directorate of Vigilance) Cuttack, against the appellant, the Former Chief Minister of Orissa, under section 179 of Indian Penal Code before the Sub-divisional Magistrate, Sadar, Cuttack, alleging offending facts. Thereupon the Magistrate took cognizance of the offence and issued summons for appearance against the accused (Smt. NandiniSathpathy). Aggrieved by the action of the Magistrate and urging that the complaint did not and could not disclose an offence, the

[111]Shiv Narayan Dhingra, "Right to Silence of the accused under the Constitution of India", *CPSJ*, Vol. 41, Jan-June 2007, p. 35.
[112]N. Ravi and S. Shrinivash, "Rule against testimonial Compulsion and Judicial Reverence", *Cr.L.J.*, Aug. 2004, p. 243.
[113]*NandiniSathpathy v. P.L. Dhani*, AIR 1978 SC 1025.

agitated appellant moved to the High Court under Article 226 of the Constitution, challenging the validity of magisterial proceeding.[114]

The main facts of this case are that Smt. NandiniSathpathy was directed to appear at the vigilance police station for being examined in connection with a case registered against her by the DSP, Vigilance Cuttack, under section 5(2) read with section 5(1)(d) and (e) of the Prevention of Corruption Act and under sections 161/165 and 120-B and 109 of Indian Penal Code. During the course of investigation it was that she was interrogated with reference to a long string of questions, given to her in writing. Skipping the details of dates and forgetting the niceties of the provisions, the gravemen of the accusation was one of acquisition of assets disproportionate to the known, licit sources of income and probable resources over the years of the accused, who occupied a public position and exercised public power for a long spell during which, the Police version runs, the lady by receipt of illegal gratification aggrandized herself.

The broad submission, unsuccessfully made before the High Court, was that the charge rested upon a failure to answer interrogations by the police but this charge was unsustainable because the umbrella of Article 20(3) of the Constitution and the immunity under section 161(2) of the Criminal Procedure Code, 1973 were wide enough to shield her on her refusal. The plea of unconstitutionality and illegality put forward by this pre-emptive proceeding was rebuffed by the High Court and so she appealed to the Supreme Court by certificate granted under Article 132(1), resulting in the above appeal case. In this case it was held by the Supreme Court that the phrase "compelled testimony" includes evidence procured not merely by physical threat or violence that by psychic torture, atmospheric pressure, environmental coercion, tiring interrogative prolixity, overbearing and intimidatory methods used and the like.

The prohibitive sweep of Article 20(3) goes back to the stage of police interrogation – not, as contended, commencing in the court only. In Court's opinion, the provisions of

[114]*Id.* at p. 1028.

Article 20(3) and section 161(1) substantially cover the same area, so far as police investigations are concerned. The ban on self-accusation and the right to silence, while one investigation or trial is underway goes beyond that case and protects the accused in regard to other offences either pending or imminent, which may deter him from voluntary disclosure of criminatory matter.[115]

The judicial attitude as to the validity of the forensic science tests may be discussed further in this chapter.

4.2 LIE DETECTION TEST

Conflicting opinions are being expressed by different courts regarding admissibility and constitutionality of lie detection tests as reflected in the judgments delivered from time to time by the different high courts and Supreme Court.

In the United States of America the U.S. Supreme Court disapproved the forensic use of truth inducing drug in *Townsend v. Sain***.**[116]In this case a heroin addict was arrested on the suspicion of having committed robbery and murder. While in custody he began to show severe withdrawal symptoms, following which the police officials obtained the services of a physician. In order to treat these withdrawal symptoms the physician injected a combined dosage of 1/8 grain of Phenobarbital and 1/230 grain of Hyoscine. This dosage appeared to have calming effect on Townsend and after the physician's departure he promptly responded to questioning by the police and eventually made some confessional statement. The petitioner's statements were duly recorded by a court reporter. The next day he was taken to the office of the prosecutor where he signed the transcriptions of the statements made by him on the previous day.

When the case came up for trial, the counsel for the petitioner brought a motion to exclude the transcripts of the statements from the evidence. However, the trial Judge

[115]*Id.* at p. 1046.
[116]372 US 293 (1963); Quoted in *Selvi v. State of Karnataka*, AIR 2010 SC 1974 (1999).

denied this motion and admitted the court reporter's transcription of the confessional statement into evidence. Subsequently, a Jury found Townsend to be guilty, thereby leading to his conviction. When the petitioner made a habeas corpus application before a Federal District Court, one of the main arguments advanced was that the fact of Scopholamine's character as a truth-serum had not been brought out at the time of the motion to suppress the statements or even at the trial before the state court. The Federal District court denied the habeas corpus petition without a plenary evidentiary hearing, and this decision was affirmed by the Court of appeals. Hence, the matter came before the U.S. Supreme Court. In the opinion authored by Earl Warren, C.J. the Supreme Court held that the Federal District Court had erred in denying a writ of habeas corpus without giving a plenary evidentiary hearing to examine the voluntariness of the confessional statements. Both the majority opinion as well as the dissenting opinion (Steward, J.) concurred on the finding that a confession induced by the administration of drug is constitutionally inadmissible in a criminal trial. On this issue Warren, C.J. observed:[117]

"Numerous decisions of this court have established the standards of governing the admissibility at confessions into evidence. If an individual's 'will was overborne' or if his confession was not 'the product of a regional intellect and free will', his confession is inadmissible because coerced. These standards are applicable whether a confession is the product of physical intimidation or psychological pressure and of course, are equally applicable to a drug induced statement. It is difficult to imagine a situation in which a confession would be less the product at a free intellect, less voluntary, than when brought about by a drug having the effect of a 'truth-serum'. It is not significant that the drug may have been administered and the questions asked by persons unfamiliar with Hyoscine's properties exist. Any questioning by the Police Officers which in fact produces a confession which is not a product of the free intellect renders that confession inadmissible."

[117]As quoted in *Selvi v. State of Karnataka*, AIR 2010 SC 1974 (2000).

In another case of *United States v. Swanson,*[118] two individuals had been convicted for conspiracy and extortion through the acts of sending threatening letters. At the trial stage, one of the defendants testified that he suffered from amnesia and therefore, he could not recall his alleged acts of telephoning the co-defendant and mailing threatening letters. In order to prove such amnesia his counsel sought the admission of a taped interview between the defendant and the psychiatrist which had been conducted while the defendant was under the influence of sodium Amytal. The drug induced statements supposedly showed that the scheme was a joke or a prank. The trial court refused to admit the contents of this sodium Amytal induced interview and the fifth circuit court upheld this decision. In holding the same, it was also observed:

Moreover, no drug induced recall at part events which the subject is otherwise unable to recall is any more reliable than the procedure for inducing recall. Here, both psychiatrists testified that the sodium Amytal does not ensure truthful statements. No recreation or recall by, photograph, demonstration, and drug stimulated recall or otherwise, would be inadmissible with so tensions a predicate."

Since the person subjected to narco-analysis technique is in a half-conscious state and loses awareness of time and place, this condition can be compared to that of a person who is in a hypnotic state. In *Harvath v. R.*,[119] the Supreme Court of Canada held that the statements made in a hypnotic state were not voluntary and hence they cannot be admitted as evidence. It was also decided that if the post-hypnotic statements relate back to the contents of what was said during the hypnotic state, the subsequent statements would be inadmissible. In that case a 17 year old boy suspected for the murder of his mother had been questioned by a police officer who had training in the use of hypnotic methods. During the deliberate interruptions in the interrogation sessions, the boy had fallen into a mild hypnotic state and had eventually confessed to the commission of the

[118]572 F 2d 523 (5th Circ. 1978); Quoted in *Selvi v. State of Karnataka* AIR 2010 SC 1974 (2000).
[119](1979) 44 CCC 385; Quoted in *Selvi v. State of Karnataka*, AIR 2010 SC 1974 (2002).

murder. He later repeated the admissions before the investigating officers and signed a confessional statement. The trial Judge had found all of these statements to be inadmissible, thereby leading to an acquittal. The Court of Appeal had reversed this decision, and hence an appeal was made before the Supreme Court. Reference was made to the well known statement of Lord Summer in *Ibrahim v. R.*[120]

"It has long been established that a positive rule of English Criminal law that no statement made by an accused is admissible against him unless it is shown by the prosecution to have been a voluntary statement, in the sense that it has not been obtained from him either by fear of prejudice or hope of advantage exercised or held out by a person in authority."

After examining several precedents, Spence, J. held that the total circumstances surrounding the interrogation should be considered, with no particular emphasis placed on the hypnosis. It was observed that in this particular case the interrogation of the accused had resulted in his complete emotional disintegration, and hence the statements given were inadmissible.[121]

Coming to the judicial precedents regarding polygraph test a decision reported as *Fyre v. United States*[122] dealt with a precursor to the Polygram which detected deception by measuring changes in systolic blood pressure. In that case the defendant was subject to test before the trial and his counsel had requested the court that the scientist who had conducted the same should be allowed to give expert testimony about the results. Both the trial court and the appellate court rejected the request for admitting such testimony. The appellate court admitted the considerations that would govern the admissibility of expert testimony based on the scientific insights and held that:[123]

[120]*Ibid.*
[121]Quoted in *Selvi v. State of Karnataka*, AIR 2010, SC 1974 (2003).
[122](1923) 54 App. D.C. 46.
[123]*Ibid.*

"Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized and while the courts will go a long way in admitting expert testimony deducted from a well recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs. We think that systolic blood pressure deception has yet not gained such standing scientific recognition among physiological and psychological authorities as world justify the courts in admitting expert testimony deducted from the discovery, developed and experiments thus far made."

The standard of 'general acceptance in the particular field', govern the admissibility of scientific evidence for several decades. It was changed much later by the U.S. Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals Inc.*[124] In that case the petitioners had instituted proceedings against a pharmaceutical company which had marketed 'Bendectin', a prescription drug. They had alleged that the ingestion of this drug by expecting mothers had caused birth defects in the children born to them. To contest these allegations, the pharmaceutical company had submitted an affidavit authored by an epidemiologist. The petitioners had also submitted expert opinion testimony in support of their contentions. The District Court had ruled in favor of the company by ruling that their scientific evidence rule that their scientific evidence met the standard of 'general acceptance in the particular field' whereas the expert opinion testimony produced on behalf of the petitioners did not meet one said standard.

It was observed that such an inquiry should be flexible one, and its focus must be solely on principles and methodology, not on the conclusions that they generate. It was reasoned that instead of the wholesale exclusion of scientific evidence on account of the high threshold of proving general acceptance in the particular field, the same could be admitted and then challenged through conventional methods such as cross-examination,

[124]509 US 579 (1993); Quoted in *Selvi v. State of Karnataka*, AIR 2010 SC 1974 (1988).

presentation of contrary evidence and careful instruction to juries about the burden of proof.

Another technique of lie detection is 'Brain Fingerprinting test in criminal cases'. Since this technique is considered to be an advanced version of the P300 waves test, it will be useful to examine the early precedents.

In *Harrington v. IOWA,*[125] Tarry J. Harrington (appellant) had been convicted for murder in 1978 and the same had allegedly been committed in the course of attempted robbery. A crucial component of the incriminating materials was the testimony of his accomplice. However, many years latter it emerged that the accomplice's testimony prompted by an offer of leniency from the investigative police and doubt were raised about the credibility of other witnesses as well. Subsequently it was learnt that at the time of the trial, the police had not shared with the defense some investigative reports that indicate the possible involvement of another individual in the crime. Harrington had also undergone a 'Brian Fingerprinting Test' under the supervision of Dr. Lawrence Farwell. The test results showed that he had no memories of the 'probes' relating to the act of murder. Hence, Harrington approached to the District Court seeking the vacation of his decision and order for a new trial. However, the District Court denied this application for post conviction relief. This was followed by an appeal before the Supreme Court of IOWA.[126]

However, the Supreme Court of IOWA gave no weightage to the results of the 'Brian Fingerprinting' test and did not even inquire into their relevance and reliability. It was stated, "because of scientific evidence is not necessary to a resolution of this appeal, we give it no further consideration.[127]

[125]659 N.W. zd. 509 (2003).
[126]*Id*. at p. 2006.
[127]*Id.* at p. 2007.

In other case, *Slaughter v. Oklahama***,**[128] Jimmy Ray slaughter had been convicted for two murders and sentenced to death. Subsequently, he filed an application for post conviction relief before the court of criminal appeals at Oklahoma which attempted to introduce in evidence an affidavit and evidentiary material relating to a 'Brian Fingerprinting' test. This test had been conducted by Dr. Lawrence Farwell whose opinion was that the petitioner did not have knowledge about the 'Salient features of the crime scene'. With regard to the affidavits based on the 'Brain Fingerprinting' test, it was held that:[129]

"Dr. Farwell makes certain claims about the Brain Fingerprinting test that are not supported by anything other than his base affidavit. He claims the technique has been extensively tested, has been presented and analysed, in numerous persons. Review articles in recognized scientific publications, has a very low rate of error, has objective standards to control its operation, and is generally accepted within the 'relevant scientific community'. These bare claims however, without any form of corroboration, are unconvincing and more importantly legally insufficient to establish petitioner's post conviction request for relief."[130]

The Supreme Court of India in a case, i.e. *People's Union for Civil Liberties v. Union of India,*[131] observed that the narco-analysis test amount to infringement of human rights and right to life under Article 21 of the Constitution.[132] Subjecting persons to injections of mind altering chemicals against their will is a violation of their right to privacy and may even if the drugs are not properly administered be dangerous for the health of the suspects.

Also the test directly intrudes into the mental process of the subject, who takes control over the questioning and his answers. There is a risk that the unconscious mind may

[128]105 P. 3d 832 (2005).
[129]*Ibid.*
[130]*Ibid.*
[131]AIR 1997 SC 568.
[132]Article 21 – No person shall be deprive of his life and personal liberty except according to the procedure established by law.

reveal personal information which is irrelevant to the investigation though highly embarrassing or even damaging to the subject, his family or to his livelihood. It is therefore imperative to establish standards of confidentiality and other safeguards as an individual privacy may be violated by the state only by procedure established by law.

But in *Bhagwan Singh v. State of Punjab*[133] Supreme Court observed that during interrogation use of some scientific principles must be made use of rather than resorting to the physical torture.

Also the Bombay High Court in *Ramchandra Reddy v. State of Maharashtra*[134] upheld the legality of the use of P300 or Brain Mapping Test and the use of truth serum. The court upheld a special court order in Pune as allowing the special investigating team to conduct scientific tests on the accused in the fake stamp paper scam including the main accused Abdul KarimTelgi.

The verdict also states that the evidence produced under the effect of truth serum is also admissible. In the course of judgment a distinction was drawn between statement made before the police officer and testimony made under oath in court. The Judges, Justice Palshikar and Justice Kakode observed that, "the Lie Detection and Brain Mapping tests did not involve any statement being made under narco-analysis was not admissible in evidence during trial." The judgment also held that these tests involve minimum bodily harm.

This view was also accepted by the Kerala High Court in *Rojo George v. Deputy Superintendent of Police,*[135] where petitioner filed a writ petition before Kerala High Court contending that CBI is harassing him and compelling him to undergo narco-analysis test at forensic laboratory though he has already undergone Polygraph Test and Brain Mapping examination.

[133]AIR 1992 SC 1689.
[134]2004 (1) Bom. C.R. (Cr.) 654.
[135](2006) (2) KLT 197.

Kerala High Court, after considering the submission made by the petitioner and the CBI, observed that if the scientific tests like polygraph, brain mapping and narco-analysis test etc. are not being used during the course of investigation the conventional method of questioning the accused may not yield any result.

The techniques used by the criminals for commission of crime are very sophisticated and modern. When such tests are conducted under strict supervision of experts, it can't be said that there is any violation of fundamental rights guaranteed to citizens of India, of course the possibility of side effects can't be ruled out in any case. Normally the forensic science laboratory will conduct the test strictly in accordance with procedure prescribed, therefore the relief sought for him in the petition can't be granted. Regarding bail of the accused during the investigation the Gujarat High Court in *Santokben Sharmanbhai Jadeja v. State of Gujarat,*[136] where a criminal complaint was filed against the petitioner and 3 unknown persons on 8.6.2007, at Junagarh 'B' Division Police Station for the offences punishable under Sections 212, 506(2) and 112 of the IPC, 1860.

In the FIR, filed against the petitioner and other 3 unknown persons allegedly on the basis of statement given by the sister of the accused Mohan Amir namely Savitaben, that it has come to the knowledge of the complainant Shri S.G. Raval, Police Inspector, Crime Branch, Junagarh that the petitioner has committed the offences of harbouring and concealing the accused as well as the criminal intimidation and abatement.

The learned Magistrate by order dated 10th June, 2007 accepted the application of taking the petitioner on police remand and the petitioner was taken on police remand upto 11.00 am on 13th June, 2007. It appears that after the completion of the period of the remand the investigating officer submitted an application for seeking further remand which came to be rejected by the learned Magistrate. After the petitioner was taken on police remand on 11.6.2007 the prosecuting agency gone an application to the court of learned Magistrate praying therein for taking the petitioner for performing Brain Mapping test as well as

[136](2007) Cr.L.J. 4566 (Guj.).

narco test on the petitioner. That the same was objected by the petitioner. However, the learned Magistrate after hearing the learned advocates appearing on the behalf of respective parties granted the application of the prosecuting by order dated 13th June, 2007 for taking the petitioner for Narco-analysis as well as Brain Mapping Test. It appears that being aggrieved by the said order the petitioner gave an application for staying the operating of the prosecution for taking the petitioner for Narco-analysis as well as Brain Mapping test and the learned Judge has stayed the operation of the order upto 26.6.2007.[137] It appears that the petitioner has preferred Revision Application before the learned Session Judge against the order passed by the learned Magistrate granting the application of the prosecution for taking the petition for tests, and it is reported that the said revision application is already heard and is kept for order on 30th June, 2007. Thereafter a application of the prosecution for taking the petitioner for Narco-analysis as well as Brain mapping test was allowed by the learned J.M. 1st Class, and by the said order postponed the hearing of the application for bail till narco-analysis test as well as brain mapping test on the petitioner. Aggrieved by this order the petitioner has approached this court by way of present application and the court held that the Brain Mapping and Narco-analysis test is part of the process of investigation and it learned judge is of opinion that investigation is not over in that case, he may refuse the bail or may not release the accused on bail.[138]

Madras High Court also confirmed this view in *Dinesh Dalmia v. State,*[139] where the petitioner had been accused of misappropriation of a sum of Rs. 594.88 crore by selling 1,30,00,000/- unallotted unlisted shares of DSQ Software Limited. As the accused had not allegedly come forward with the truth, the scientific tests were reported by the investigating agency. The facts of the case were that the petitioner was arrested and produced before the Additional Chief Metropolitan Magistrate, Egmore, Chennai, on

[137]*Id.* at p. 4567.
[138](2007) Cr.L.J. 4566 (Guj.).
[139](2006) Cr.L.J. 2401 (Mad.).

14.2.2006. The learned Additional Chief Metropolitan Magistrate was pleased to grant police custody from 14.2.2006 to 24.2.2006. The said police custody was extended till 27.2.2006 on the basis of the affidavit filed by the investigating officer. The accused thereafter surrendered to Judicial Custody on 27.2.2006.

The respondent police filed a petition seeking permission to conduct the polygraph, narco-analysis and brain mapping tests on the accused and to direct the Superintendent of Prisons, Central Jail, Chennai, to produce the accused before the forensic Science Laboratory, Bangalore on 7th and 8th March, 2006, to undergo such tests. In a criminal revision it was contended that the accused cannot be compelled to give evidence against him. The grant of police custody beyond 15 days is out of the purview of section 167 of the Code of Criminal Procedure. There is an intrusion in the constitutional right of the accused to be silent under Article 20(3) of the Constitution of India.

It was held by the High Court that such a course does not amount to testimonial compulsion. When there was a hue and cry from the public and the human right activists that the investigating sleuths adopt third degree methods to extract information from the accused, it is high time the investigating agency took recourse to scientific methods to investigation.

Further, regarding the examination of person who is not a accused, Supreme Court in *State of Andhra Pradesh v. Inapuri Padma*[140] while deciding a case where persons mentioned in the requisition were neither accused nor suspects in the crime, held that there is no need to obtain any permission from the court to undertake narco-analysis test, if they express no objection for undertaking such tests.

In cases where the witnesses are not willing to undergo the test then only it is required by the police to make an application to the court seeking permission for undertaking a test against such persons. The police are required to convince the court as to what are the

[140](2008) Cr.L.J. 3992.

circumstances that made the police to gain an impression that the persons proposed to be put to narco-analysis test, and the likelihood of knowing something about the commission of the offence. Since the respondents in this case were not accused or suspects in the crime, the question of putting the test of testimonial compulsion did not arise.

This controversy seems to have been settled by the Supreme Court in *Smt. Selvi v. State of Karnataka***,**[141] where the scientific validity of impugned techniques had been questioned and it was argued that their results are not entirely reliable.

The three judges' bench headed by the then Chief Justice of India K.G. Bala Krishnan, along with Justice R.V. Ravendran and Justice J.M. Panchal, discussed in detail the pros and cons of these lie detection tests.

In this case court recognized that the protective scope of Article 20(3) extends to the investigative stage in criminal cases and when read with the section 161(2) of the Code of Criminal Procedure, 1973 it protects accused person, suspects as well as witnesses who are examined during the examination. The test results can't be admitted in evidence if they have been obtained through the use of compulsion.[142]

Article 20(3) protects an individual's choice between speaking and remaining silent, irrespective of whether the subsequent testimony proves to be inculpatory or exculpatory. This Article aims to prevent the forcible conveyance of personal knowledge that is relevant to the facts in issue. The results obtained from each of the impugned tests bear a "testimonial character" and they can't be categorized as material evidence.[143]

The impugned techniques can't be read into the statutory provisions which enable medical examination during investigation in criminal cases, i.e. the explanation to sections 53, 53A and 54 of the Code of Criminal Procedure, 1973. Such an expensive

[141]AIR 2010 SC 1974.
[142]*Id.* at p. 2060.
[143]*Ibid.*

interpretation is not feasible in light of the rule of 'ejusdem generis' and the consideration which govern the interpretation of statutes in relation to scientific advancements. Furthermore, placing reliance on the results gathered from these techniques comes into conflict with the 'right to fair trial'. The Court further observed that we do leave room for the voluntary administration of the impugned techniques in the context of criminal justice, provided that certain safeguards are in place.[144]

The National Human Rights Commission had published 'Guidelines for the administration of polygraph test on the accused' in 2000. These guidelines should be strictly adhered to and similar safeguards adopted for conducting the 'Narco analysis technique' and the 'Brain Electrical Activation Profile' test. The text of these guidelines has been reproduced below:

1. No lie-detector tests should be administered except on the basis of consent of the accused. An option should be given to the accused whether he wishes to avail such tests.
2. If the accused volunteers for a lie detector tests he should be given access to a lawyer and the physical, emotional and legal implications of such test should be explained to him by the police and his lawyer.
3. The consent should be recorded before a judicial magistrate.
4. During the hearing before a magistrate, the person alleged to have agreed should be duly represented by a lawyer.
5. At the hearing, the person in question should also be told in clear terms that the statement that is made shall not be a 'confessional' statement to the Magistrate but will have the status of a statement made to the police.
6. The Magistrate shall consider all the factors relating to the detention including the length of detention and the nature of the interrogation.

[144] *Id.* at p. 2060.

7. The actual recording of the lie detector test shall be done by an independent agency and conducted in the presence of a lawyer.
8. A full medical and factual narration of the manner of the information received must be taken on record.

So, with this decision Supreme Court seems to have settled the controversy regarding the constitutionality of these tests.

4.3 D.N.A.TEST

Application of D.N.A. testing is now well established in developed countries. In India in several cases, judgments have been given either based on the results of D.N.A. testing alone or along with other corroborative evidence.[145]But the approach of the courts towards the D.N.A. testing and its application in fact finding is very guarded one.[146]

The courts are very cautious in allowing this test as they think that it may go against the basic principles of Human Rights, as the order for such tests may interfere with the personal liberty of that person guaranteed under Article 21, and from protection guaranteed under Article 20(3).[147]

The first criminal conviction based on D.N.A. testing was done in 1986 in U.S. in the case of *Florida v. Andrews*. In *Andrews v. State*,[148]the trial court admitted the evidence and the jury convicted the defendant of aggravated battery, sexual battery and armed burglary of a dwelling.

In India from 1990 onwards many cases came into the various High Courts and the Supreme Court challenging the validity of D.N.A. tests. In the case of *Neeraj Sharma v.*

[145]Abhijeet Sharma, "D.N.A. Fingerprinting: A Legal Prospective", *Cr.L.J.*, May 2004, p. 144.
[146]NamrataShrey, "Role of Medical Science in Criminal Administration", *Cr.L.J.*, Sep. 2006, p. 83.
[147]Article 20(3) "No person accused of any offence shall be compelled to be a witness against himself.
[148]Quoted from Parnam Kumar Raut, "DNA Test a Forensic Boon", *Cr.L.J.*, Nov. 2003, p. 349.

State of U.P.[149]where Dr. P.S. Negi, Chief Medical Officer, Haridwar was murdered and when inquest was held on his body some hair were found in his hands. The hairs were sealed in a packet by the investigating officer. During the investigation it was revealed that at the time of the incident a scuffle had ensured between the deceased and the assailant and in the course of said scuffle the deceased had caught the assailant by holding the hair of his head and the some have come in his hand when the assailant got himself released from the grip of the deceased and ran away from the spot. The sealed packet containing the hair was immediately kept in safe custody in the Malkhana. The prosecution moved an application before the C.J.M. Haridwar praying that samples of hairs of accused Neeraj Sharma and Rajeev alias Raju may be taken for getting the same compared with the hair which were found in hands of the deceased at the time of the inquest. This application was opposed by the accused on the ground that there is no provision in law which may empower any Magistrate to issue a direction for taking samples of hairs of the accused against his wishes and further the taking of hairs would violate Article 20(3) of the Constitution. Learned C.J.M. Haridwar has by the impugned order dated 28.6.1991, allowed the application moved by the prosecution and has directed that samples of hair of the accused may be taken. Aggrieved accused has filled the present revision. Deciding this revision petition the Allahabad High Court held that:

"the evidence of specimen handwriting, fingerprints and blood or hair will incriminate an accused only if on comparison with certain other handwriting, fingerprints, blood or samples of hairs, identity between the two sets is established. By themselves they do not incriminate an accused. Again by themselves they are of no assistance at all to establish the charge against an accused.

[149](1993) Cr.L.J. 2266 All.

It is almost impossible for accused to change his blood or nature of his hair or ridges of his finger impression. Thus, by giving samples of hairs an accused does not become a witness against himself."[150]

In another case of *Chandan Pana Lal Jaiswal v. State of Gujarat*,[151] Gujarat High Court while deciding revision petition where it is prayed on the part of petitioners that the order under challenge may be quashed and alternatively it is prayed that the petitioners may be permitted to engage D.N.A. Forensic examiners of their own choice and the investigating agency may be directed to see that the team DFS as well as the team DNA Forensic examiners engaged by the petitioners jointly conduct the DNA Fingerprinting test.

Both the petitioners, according to the case of the prosecution, are the original accused of the said offence punishable under sections 376, 342, 338, 234, 323 read with section 114 of the Indian Penal Code, 1860 and section 66(1) (b) and section 85 of Bombay Prohibition Act. It is prayed by both the petitioners that the order under challenge, granting both the applications preferred by the investigating officers, Assistant Commissioner of Police, DF Division, Ahmedabad City, may be quashed. Alternatively, it is prayed that the petitioners may be permitted to engage DNA Forensic Examiners of their own choice and the investigating agency may be directed to see that the team DFS as well as team at DNA forensic examiners engaged by the petitioners jointly conduct the DNA Fingerprinting test. The petitioners have also prayed one more alternative relief that at the time of the sample of blood for the purpose of conducting DNA fingerprinting test, the DNA examiners engaged by the petitioners may be permitted to collect the sample of the blood at the same time for the purpose of taking DNA fingerprinting test and to give their independent opinion about their findings.

In this case Gujarat High Court while dismissing the petition held that "accused can't be permitted to put his own expert either to participate in such investigation or to watch such

[150] *Id.* at p. 2274.
[151] (2004) Cr.L.J. 2992 (Guj.).

investigation as it may prejudice defense or prosecution because it would amount to interference in process of investigation. But the court issues following directions for examination:

(1) The authorities should see that blood samples are collected by the responsible medical officer preferably in the jail ward itself.

(2) If required the accused should be taken to the civil hospital and the blood samples should be drawn by a responsible doctor.

In another case of *Vishal Motising Vasva v. State of Gujarat*[152] where earlier DNA of the accused was undertaken and it has been stated that the DNA Test as found to be in negative. When the evidence is recorded, it is the case of original complainant that she came to know at a later point of time that DNA test is already undertaken of the accused and therefore she moves an application before the trial judge far conducting the second D.N.A. Test of the accused. In this case it was held by the court that the order allowing application allowing second DNA test to be conducted can't be said to be without jurisdiction or illegal. However, order for conducting such test at particular laboratory, on request of complainant, would be illegal.

As towards the usefulness of DNA Orissa High Court in *Thogorani v. State of Orissa***,**[153] observed that DNA Evidence is now a pre dominant forensic technique for identifying criminal. DNA testing on samples such as saliva, skin, blood, hair or semen not only helps to convict but also serves to exonerate.

High Court also held that the court must have sufficient materials before it to enable it to exercise its discretion. The only restriction according to us 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 right

[152](2004) Cr.L.J. 3086 (Guj.).
[153](2004) Cr.L.J. 4003 (Orissa).

under Article 20(3) and 21 of Constitution. In balancing this interest, consideration of the following matters would be relevant:

(a) The extent to which the accused may have participated in the commission of the crime.

(b) The gravity of the offence and the circumstances in which it is committed.

(c) Age, physical and mental health of the accused to the extent they are known.

(d) Whether there is less intrusive and practical way of collecting evidence tending to confirm or disprove the involvement of the accused in the crime exist or not.

In *Sanjeev Nanda v. State of NCT of Delhi*,[154] Delhi High Court also observed that an accused can be asked to give blood sample by the court.

In recent landmark case of *Patangi Balarama Venkata Ganesh v. State of Andhra Pradesh*,[155] Supreme Court while deciding an appeal from Andhra Pradesh High Court, where a pink color shirt was seized from the abandoned car. The blood stains on the shirt were found to be matching with the blood of the accused.

The facts of this case are that Subbarama Reddy was the member of the Parliament from Ongole constituency in the State of Andhra Pradesh. He had a gunman, named Ch. Venkataratnam. Subbarama Reddy was a philanthropist. He established 24 colleges in the Prakasm and Nellore districts of Andhra Pradesh. He otherwise donated a huge amount to a number of institutions. He was a resident of Bhagyanagar in the town of Ongale.

Subbarama Reddy reached Ongole on 1st December 1995. He went to a place known as Markapur on the same date to attend a function. He was to attend two more functions in the afternoon in the town at Ongole. P.W. 2 and 3 came to invite him to attend the function to be held at Islampet in the town of Ongole. While he was in his bedroom,

[154](2007) Cr.L.J. 3786 (Del.).
[155](2009) Cr.L.J. 4144.

P.W.S. 1 and 3 went inside the bedroom and at the same time PW 13 also went inside the room. Ch. Venkataranam, gun man, was standing outside the door. While all of them coming out from the bedroom of Subbarama Reddy, PW 1 found five persons having pistols standing there. Patangi BalaramaVenkata Ganesh, A-1 was said to be having a gun in his hand. The assailants fired at Subbarama Reddy and his gunman A-1 was identified as a person wearing pink coloured shirt. The gunman allegedly fired a shot. Pursuant thereto appellant sustained bullet injuries. They escaped in a white ambassador car.

Accused No. 1 was arrested on the same day from the cashew garden with bullet injury in his stomach. He was arrested and sent to hospital for his treatment. Subbarama Reddy died at 1600 hours while his gunman Ch. Venkataratnam died at 1800 hours on the same dated i.e. 1stDecember 1995. Initially, eight persons were made accused. Two of them are said to have died. For having absconded could not be put on trial.

Both the accused were found to be guilty by the trial judge. Accused no. 1 was sentenced to life imprisonment for the offences under sections 302, 120-B as also 149 of Indian Penal Code and section 27(2) of the Arms Act. He was also sentenced to undergo rigorous imprisonment for one year for the offence under section 147 of I.P.C; rigorous imprisonment for two years each for the offences under section 148 and 506 of the Indian Penal Code; rigorous imprisonment for seven years for the offences under Section 397 of the IPC and rigorous imprisonment of five years for the offence punishable under section 25(1A) of the Arms Act.

The defense submitted that the report of the DNA should not be relied upon. Supreme Court held in this case that using this genetic fingerprinting is done like in the traditional method of identifying fingerprints of the offenders. The identification is hundred percent precise, experts opine.

The court also held that in the report of DNA expert failure to use the expression 'similar' not 'identical' not material when conviction was not based only on expert evidence.

Supreme Court in another recent judgment while deciding the constitutional validity of certain forensic tests in *Selvi v. State of Karnataka*[156] held regarding the constitutional validity of DNA that "A DNA profile is a record created on the basis of DNA samples made available to forensic experts. The matching of DNA samples is emerging as vital tool for linking suspects to specific criminal acts. 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).

4.4 FINGERPRINTS

Of all methods at personal identification known to date, fingerprints offer the most successful means of identifying a person. It is today used as an infallible means of identification, all over the world.[157] The method possesses all the major qualities of an effective identification such as uniqueness, permanence, universality, simplicity of recording and simplicity of classification.[158]

In many cases before the Supreme Court and various High Courts, use of fingerprints as a tool during investigations has been challenged. Initially Madras High Court in the case of *Palani Gowndan in re.*[159] observed that when the evidence sought was to be obtained by a volitional act of the accused, the accused could not be compelled to perform the act but when the evidence could be taken by the police under a provision of law, as taking impression of his fingers or photograph of his face or other measurement of his body, which do not depend upon the volition act of the accused, the protection given by Article

[156]AIR 2010 SC 1974, 1978.
[157]B.S. Nabar, *Forensic Science in Crime Investigation*, 2008, p. 47.
[158]*Ibid.*
[159]AIR 1957 Mad 546.

20(3) of the Constitution is not contravened and the police take such material even by the exercise of force.

But this view has not accepted by the Allahabad High Court in the case of *Balraj Bhalla v. Shri Ramesh Chandra Nigam***.**[160] And held that the recording of fingerprints was the only purpose of record of the accused can be denied by the accused, as that would be violative of Article 20(3).

Further in very important case of *State of Bombay v. Kathi Kalu Oghad,*[161]where three appeals have been heard together only in so far as they involved substantial question of law as to the interpretation of the constitution, with particular reference to clause (3) of Article 20.

The facts of this case are that the respondents was charged, another person, under Section 302 read with section 34 of IPC as also under section 19(e) of the Indian Arms Act. The trial court found him guilty of those charges and sentenced him to imprisonment for life for the offence under Arms Act. At the trial the identification of the respondents, as one of the two alleged culprits, was the most important question to be decided by the court. Besides other evidences the prosecuting adduced in evidence at a chit – Ex.5 alleged to be in his handwriting and said to have been given by him. In order to prove that Ex. 5 was in the handwriting of the respondent, the police had obtained from him during the investigation, three specimen handwritings of his on three separate papers which were marked as Exs. 27, 28 and 29 by the handwriting expert whose evidence was to the affect that they are all writings by the same person. At the trial and in the High Court, the question was raised as to the admissibility of specimen writings contained in Exs. 27, 28 and 29, in view at the provisions of Article 20(3) of the Constitution.

The Supreme Court observed that it is an admitted fact that those specimen writings of the accused had been taken by the police while he was in the police custody, but it was

[160]AIR 1960 All 157.
[161]AIR 1961 SC 1808.

disputed whether the accused had been compelled to give those writings within the meaning of Article 20(3) of the Constitution. The plea of the accused that he was forced by the Deputy Superintendent of Police to give those writings has not been accepted by the trial judge. But those documents have been excluded from the consideration, as inadmissible on the ground that though there was no threat or force used by the police in obtaining those writings from the accused person, yet in the view of the court "the element of compulsion was implicit in his being at that time in police custody." In this conclusion both trial Judge and the High Court have agreed. The identification of the accused person was also sought to be proved by the evidences of witnesses, who identified him at the identification parade.

The High Court giving benefit of doubt to the accused acquitted him. The State of Bombay moved Supreme Court and obtained special leave to appeal from the judgment and order of acquittal.

The other two appeals, criminal appeals 110 and 111 of 1958 deals in identical situation where the facts relate to the comparison of the fingerprints.

The Supreme Court observed that giving thumb impressions or impressions of foot or palm or fingers cannot be included in the expression 'to be a witness' and held that "there is no infringement of Article 20(3) of right against self incrimination by compelling an accused to give impression of his fingers for the purpose of comparison under the provision of section 73 of the Indian Evidence Act, 1872."

The court may also direct any person present in the court to make a finger impression for the purpose of enabling the court to compare the impression so made with any impression alleged to be the finger impression of such person.[162] The court may draw adverse inference from a refusal to give thumb impression.[163]

[162]*State v. Parameswaran Pillai*, AIR 1952 TC 447.
[163]Ibid.

4.5 CONCLUSION

According to Roscoe Pound the flexibility is the greatest virtue of law and thus its applicability should also be flexible rather than a rigid insistence of strict format. Moreover, law is not static but it is dynamic. Hence, it should keep changing according to the requirement and changes in the society, science, ethics and technology. The legal system should absorb development and advances that take place in science as long as they are for the good of the society and they do not violate fundamental legal principles.

CHAPTER-FIVE
CONCLUSION AND SUGGESTIONS

5.1 CONCLUSION

Scientific developments have made the modern investigations more eminent in terms of results and therefore established the irrevocable need for such. The revolution of scientific technology is waving like fast flowing air in the modern world of advancement. The field of law is also under the shadow of scientific advancement. Judicial system, particularly the criminal justice system, is not untouched with the advancement of science.[164] Regarding this forensic science has a paramount role in the detection of crime. It can be defined as a science, by means of which material evidence is collected, analyzed, presented and used in a court of law especially in relation to crimes. It embraces all branches of science and applies them to the problems of law. Though its techniques are borrowed from various scientific disciplines, like chemistry, medicine, surgery, biology, photography, physics and mathematics but over the years, it has developed its own branches like Anthropology, D.N.A., Fingerprinting, Fingerprint Odontology etc.

In the 20th century, Forensic science tests, such as lie detection tests, DNA Fingerprinting and Fingerprint comparison tests has revolutionize the modern investigation system. Lie detection tests include three types of tests. Firstly, narco-analysis test, which involves the intravenous administration of drug that causes the subject to enter into hypnotic trance and becomes less inhibited. The drug induced hypnotic stage is useful for investigators since it makes the subject more likely to divulge information. The drug used for this test is sodium pentothal, high quantities for which are routinely used for inducing general

[164]Rattan Singh, "Narcoanalysis: A Volcano in Criminal Investigation System", *Cr.L.J.*, June 2010, p. 169.

anesthesia in surgical procedure. This test is a scientific procedure to obtain information from an accused in a natural sleep-like stage.[165]

The second test is polygraph test. The polygraph works on the principle that change in the person's perception or consciously held feelings produces a defense reaction in the form of psychological changes i.e. in the pulse rate, blood pressure, respiration rate and electrical resistance at the skin, known as G.S.R.[166]

During the polygraph test a corrugated rubber tube, tied around the subject's chest, measures respiratory changes, and inflated cuff wrapped round the upper arm, which measures the cardio vascular changes; electrodes attached to the palm or fingers, measures the electro dermal response; and the transduct attached to the thumb measures blood volume reflecting the pulse rate.

A baseline is established by asking questions whose answers the investigators know. Lying by a suspect is accompanied by specific, perceptible, psychological and behavioural changes and the sensors and a wave pattern in the graph expose this. Deviation from the baseline is taken as sign at lie.[167]

The third lie detection tests is brain fingerprinting. It is based on the principle that when the brain recognizes a person or a sound, it generates a particular type of electrical wave and this wave is called P300 or Brain Mapping. Waves are generally reflected when the person has some connection with those pictures or sounds. The entire system is controlled by a computer. If the stimulus gives a positive response, it is considered that the accused has some liaison with the incident.

The second forensic science tests id DNA Fingerprinting. DNA stands for Deoxyribonucleic Acid. It is the biological blueprint of life. DNA Fingerprinting is

[165]B.R. Sharma,*Forensic Science in Criminal Investigation and Trials*17 (Universal Law Publishing, New Delhi, 1999).
[166]B.S. Nabar, *Forensic Science in Crime Investigation*341(Asia Law House, Hyderabad 2008).
[167]Ekta Gupta, "Lie Detector Test – A Global Perspective", *Cr.L.J.*, Aug. 2006, p.180.

applicable to virtually all body materials, are encountered in a variety of heinous crimes, murders, dacoities, encounter and other body offences against the person.

The third type of forensic science tests is fingerprints comparison test. Fingerprint offers the most successful means of identifying a person. It is today used as an infallible means of identification, all over the world. This method possesses all the major qualities of an effective identification medium, such as uniqueness, permanence, universally, simplicity of recording and simplicity of classification.[168]There was considerable debate about the constitutional validity and the accuracy of these forensic science tests.

Regarding the constitutional validity of lie detection tests, Supreme Court in a landmark judgment, *Selvi v. State of Karnataka*,[169] held that:

"Protection against self-incrimination is a broad protection that extends to the stage of investigation. While there is a requirement of formal accusation for a person to invoke Article 20(3) it must be noted that protection contemplated by Section 161(2) CrPC. is wider. Therefore, the right against self-incrimination protects persons who have been formally accused as well as those who are examined as suspects in criminal cases."[170]

The court further observed that, "The compulsory administration of the impugned tests (Narco-analysis, polygraph and brain fingerprinting tests) violates the right against self-incrimination. This is because the underlying rationale of the said right is to ensure the reliability as well as the voluntariness of statements that are admitted as evidence. Thus, court has recognize that the protective scope of Article 20(3) extends to the investigative stage in criminal cases and when read with Section 161(2) of the CrPC., it protects accused persons, suspects as well as witnesses who are examined during an investigation. The tests results can't be admitted in evidence if they have been obtained through the use of compulsion. Article 20(3) protects an individual's choice between speaking and

[168]*Supra* note 3 at p. 48.
[169]Air 2010 SC 1974.
[170]*Id.* at p. 1975.

remaining silent, irrespective whether the subsequent testimony proves to be inculpatory or exculpatory."[171]

In the light of these conclusions Supreme Court observed that no individual should be forcibly subjected to any of the techniques, in question, whether in context of investigation in criminal cases or otherwise. Doing so would amount to an unwarranted intrusion into personal liberty. However, Supreme Court leaves room for the voluntary administration of the impugned techniques in the context of criminal justice, provided that certain safeguards are in place.

The Supreme Court in this case of *Selvi v. State of Karnataka***,**[172] while settling the controversy regarding the validity of DNA Fingerprinting also held that:[173]

"The matching of DNA sample is emerging as a vital tool for linking suspects to specific criminal acts. The use of material samples such as fingerprints for the purpose of comparison and investigation does not amount to testimonial for the purpose of Article 20(3) of the Constitution."

Further, regarding the constitutional validity of fingerprint comparison, Supreme Court settled this controversy in the case of *State of Bombay v. Kath iKalu Oghad*,[174] where Supreme Court observed that:

"Giving thumb impression or impression of foot or palm or fingers or specimen writing or showing parts of body by way of identification is not included in the expression to be a witness."

According to Roscoe Pound the flexibility is the greatest virtue of law and thus its applicability should also be flexible rather than a rigid insistence of strict format.

[171]*Selvi v. State of Karnataka*, AIR 1974 (1975).
[172]AIR 2010 SC 1974.
[173]*Id.* at p. 1976.
[174]AIR 1961 SC 1808.

Moreover, law is not static but it is dynamic. Hence, it should keep changing according to the requirement and changes in the society, science, ethnics and technology. The legal system should absorb development and advances that take place in science as long as they are for the good of the society and they do not violate fundamental legal principles.

Forensic science encompasses a broad field of scientific knowledge in pursuit of crime and criminal forensic science has now established firm roots in India in the administration of criminal justice system. We, today, have a well organized network of laboratories, fully equipped with the most modern equipment's and trained manpower to handle it. Unfortunately, in spite of all around developments in forensic science, many police officers still seem to be unaware of the developments and the facilities offered by forensic science, which modern criminals are making the full use of science to commit crimes.

In such a scenario, it is absolutely necessary for the law enforcement agencies to acquire necessary skills and scientific technique to utilize the facilities offered by the rapidly developing forensic science to meet the challenges of crime and criminals. Consequently, there has to be an increasing emphasis on the thorough training of the police personnel in the application of forensic science. No longer crime investigation can be based on the intuition or sixth sense of a police officer. Short courses in forensic science need to be organized on a regular basis orientation courses in forensic science for all levels of police officers, particularly those engaged in crime investigation, should be conducted.

In Indian scenario, there has been increased emphasis on the use of such technologies in criminal investigation and trials. The Commissions appointed on reforms of criminal justice have reiterated that the infusion of technology in crime detection can help the system to function efficiently. The relevant laws have been amended from time to time to make way for use of forensic technologies in crime investigation and trial. Yet, it may be said that there are existent flaws in the laws which need to be addressed. The courts are

also reluctant to rely on scientific evidence due to their restrictive approach, or certain inherent defects in the evidence as produced in courts which deter them from relying on it entirely. The main motto of criminal justice system is to provide fair justice. Undoubtedly, forensic evidence is more authentic than ocular evidence. Forensic science being scientific evidence is a boon for criminal justice system. We have to overcome the existing flaws to step forward

We must learn from the past, disrupt our thinking, strengthen the community and change our culture. This means working together towards a resolution of the scientific deficiencies within existing forensic evidence while providing a firm basis for new innovative technologies entering into the forensic science ecosystem. At the same time, we need to ensure that the law enforcement and investigative communities once again recognize and use forensic science to its full potential as a holistic problem-solving tool (for example, through the use of the case assessment and interpretation methodology) . That such a methodology is embedded within a framework which allows for an understanding of the contribution that a specific evidence type could meaningfully deliver in terms of sub-source, source, activity or offence-level propositions for a given set of case specific circumstances rather than restricting it to a siloed one-dimensional reactive process becomes obvious. A contextualized means of evaluative reporting of forensic science data pertinent to a particular case but held in the context of that case where alternative propositions can be attended to and challenged correctly, works to fulfil this problem-solving potential. Such an approach has been suggested by the Association of Forensic Science Providers among others.

5.2 SUGGESTIONS

Following suggestions can be helpful in the better implementation of the various types of forensic science tests and also can be helpful to provide the protection to accused from infringement of his fundamental rights:

(1) For an enlightened and powerful criminal justice system there should be an abrupt use of the application of forensic science in the crime investigation process. For achieving this end, there should be growing awareness of forensic science all over India. Forensic science should be embedded first amongst the common man, police personnel, and judges, lawyers, for large forensic awareness, forensic science should be introduced to a certain extent in the school syllabus at the secondary schools or an additional paper may be created for this purpose. Forensic science should be introduced in the LL.B. syllabus, so that the matter may be earlier known to them. Forensic awareness in the judiciary in India is poor. As there is abrupt use of forensic science in the courts, the judges, the lawyers, the prosecutors and the investigating officers of the police station must be well-trained in forensic science.

(2) For the purpose of carrying on an enlightened crime investigating process, a specific forensic legislation is to be immediately enacted all over India. The existing laws of our country are not sufficient for that purpose. For the purpose of DNA analysis of the body fluids of the suspects who have committed crimes, there should be specific forensic legislation in India, so that the investigating officers are legally entitled to collect all sorts of sample body fluids from the body of the suspects for the purpose of investigation of crimes.

(3) There should be strict enforcement of the guidelines as given by the Supreme Court regarding lie detection tests and DNA fingerprinting.

(4) If the court is apprehensive of irregularities in obtaining blood samples or other samples, safeguards must be provided by the

court by providing that these samples would be taken in presence of courts.

(5) State governments need to work with the central authorities to enhance the investigative capabilities of their police departments. The Indian Criminal justice system has an alarmingly low conviction rate and the situation needs to be rectified with emphasis on real science and state of the art technology. There is also an immediate need for a comprehensive training of investigating officers with special reference to modern and scientific tools of investigation for effective administration of criminal justice system.

(6) Psychology and law have a great deal in common. The research in forensic psychology can be highly useful in the outcome of legal proceeding. The areas such as eye witness testimony, prediction of dangerousness, credibility of child testimony, provocation and lie detection, the forensic psychology can play a major role. Forensic psychology can also be helpful in the development of procedures in interviewing suspects and the admissibility of the expert testimony on weather a witness is suggestible.

(7) Lack of fund is also another factor that affects the quality of work of forensic science done in this country. The Central Forensic Science Laboratory (CFSL) is under the Ministry of Home Affairs and as such approval of the every project they require permission of Delhi. This permission usually takes 2 to 3 years so come. By that time the project would have become obsolete and the researcher would have last interest. So incentive must be given quickly to the bright people to keep them in this field.

(8) Another step is to give the forensic science laboratories the status of an autonomous scientific establishment that brings at par with other scientific organization like DRDO and CSIR.

(9) The Criminal Procedure Code, 1973 and Indian Evidence Act, 1892, should be amended to make it mandatory for the forensic scientists to visit the scene of the crime to collect such clue materials as blood stains on clothes etc.

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