

## APPLICABILITY OF FORENSIC SCIENCE IN CRIMINAL JUSTICE SYSTEM IN INDIA

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*“Physical evidence cannot be intimidated. It does not forget. It doesn't get excited at the moment something is happening—like people do. It sits there and waits to be detected, preserved, evaluated, and explained.”*— Herbert Leon MacDonnell, *The Evidence Never Lies*, 1984.

### **INTRODUCTION**

Criminal justice system comprises a specific division or the set of processes, bodies and institutions that decide to protect or restore the mechanism of social control<sup>1</sup>. It can also be defined as ‘the organized or structured ways in which society responds to certain behaviors and people it regards as deviant, challenging, distressing, intimidating, troublesome and undesirable’<sup>2</sup>. Primarily, the administration of the criminal justice system rests on police, prosecution, courts & prisons. These four organs are engaged within the crucial role of deterrence, recognition, arbitration, prosecution and penalization or punishment of offenders in society. An efficient criminal justice system guarantees a secure & peaceful society. In reality, the whole subsistence of an organized society depends upon a good and effective criminal justice system<sup>3</sup>.

Speaking about the functionaries of criminal justice, the essential role is that of the Magistrates and courts because they are wholly accountable for deciding the culpability or otherwise of the alleged offenders and determining their punishment. This process of deciding the culpability of offenders by courts is a complex one involving appreciation of facts and evidence and establishing the charge sought to be proved. In the commission, they're supported by a fanatical investigative agency, the police. The latter are assigned with the essential task of detecting and investigating crimes for the purpose of apprehending the alleged offenders and bringing them to justice. Any investigation should be supported with evidence. Truth is positioned in a Court of Law only when it is having a firm and sound foundation of evidence<sup>4</sup>.

In the previous few decades, the infusion of technology in crime investigation has been a serious breakthrough within the process of advancement of criminal justice. Police utilize scientific tools and techniques to reconstruct the crime scene, detect a criminal offense, identify the alleged offender and establish vital links; the courts, on the opposite, understand of these physical evidences, otherwise infallible, and determine with enhanced accuracy the innocence

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<sup>1</sup> FRANCIS PAKES (ED), *COMPARATIVE CRIMINAL JUSTICE* Pg. No.1 (Routledge, Oxon, Third Edition/2015).

<sup>2</sup> DAVID SHICHOR, *THE MEANING AND NATURE OF PUNISHMENT*, (Waveland Press, Inc. 2006).

<sup>3</sup> Committee on Reforms of Criminal Justice System, Government of India, Ministry of Home Affairs, Volume I, 2003.

<sup>4</sup> U. S. Misra, *CBI-The Role & Challenges* 13 NPAJ Vol. 57 (1) (2005).

or guilt of the offender. Somewhere, the effectiveness and efficiency of the criminal justice functioning has come to be interlaced with the extent of use of technological tools in crime investigation/examination.

### **DEFINING FORENSIC SCIENCE**

Forensic Science is defined as- The application of science to those criminal and civil laws that are upheld by the police agencies during a criminal justice system. Forensic Science deals with the appliance of the knowledge and methodology of varied disciplines of science to legal matters. For evidence analysis, it involves the utilization of multiple disciplines like medicine, physics, forensic chemistry and biology, DNA profiling, computer science and engineering. For example, physics is employed to acknowledge the blueprint of a blood scatter; biology helps to determine the idea of an anonymous suspect and chemistry helps us to seek out the chemical composition of various drugs. Therefore, the function of forensic science in criminal justice and therefore the system is usually underestimated and very critical in nature.

In ancient India, the thought of forensic science isn't a replacement one as medical belief was regularly applicable to the wants of the law. Sir Herschel was one among the primary to advocate the utilization of fingerprinting within the identification of criminal suspects. Fingerprint evidence was first accepted in an Argentine court within the 1890s and in an English court in 1902. Moreover, Forensic evidence may be a discipline that works in accordance with the parameters of the Indian system . Its function is to provide direction to those conducting criminal investigation and to provide to magistrates/judges the correct information upon which they can have full trust in determining criminal and civil dispute. This is also helpful in resolving the criminal and civil cases.

Further, Forensic science is an incorporation of just about all capabilities of data , an important and proficient resource that creates all dispensation of justice in criminal, civil, regulatory and social contexts possible. It aids in defining all the applications of science in responding to questions that are of legal significance. In present times, Forensic science may be a highly developed scientific procedure that's utilized in criminal and civil investigations, it's capable of answering important questions and forms an integrated part of the criminal justice system<sup>5</sup>. It comprises all renowned techniques like fingerprint analysis, DNA analysis, ballistics and explosives, firearms, culture etc. It facilitates convicting those guilty of crime as well as pardoning the innocent.

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<sup>5</sup> IshaTyagi and Nivedita Grover, Development of Forensic Science and Criminal.

## **ROLE OF FORENSIC SCIENCE IN CRIMINAL INVESTIGATION**

Forensic science is one among the significant characteristics of the criminal justice system. Fundamentally, it deals with investigations of scientific and physical clues gathered from the crime scene. Forensic science clarifies the distinctiveness (who) of the suspect who committed the crime. The evidence clearly specifies the nature (what) of the crime committed. The circumstantial evidence also speaks about the time (when) of the incident. The forensic evidence proves the location of the offence (where/ crime scene). The forensic investigation too observes the strategy (how) of the offender. Finally, comes to conclude the reason behind the crime. The forensic investigators recreate the distinctiveness of the criminal and also the victim<sup>6</sup>.

During the entire process of criminal investigation, evidence is gathered from the location of crime or from a person who is an eye witness to the entire incident, examined in a crime laboratory then the results are presented within the court. Every crime scene is exceptional in nature and each case presents its own challenges<sup>7</sup>. Forensic science plays a crucial role within 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 therefore the victim. On the other hand, if the clues recovered don't 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, it provides a wonderful amount of knowledge to the investigating officers that enable him to seek out the criminal purely on the idea of scientific evidence which he has left at the situation of crime<sup>8</sup>.

## **LEGAL PROVISIONS SUPPORTING CRIMINAL INVESTIGATIONS**

In India, the appliance of forensic science to crime investigation and trial has got to stand the limitation of law. As per Articles 20(3) of the Indian Constitution, no person accused of any offense shall be compelled to be a witness against himself. As based upon the presumption drawn by law that the accused person is innocent till proven guilty, it defends the accused by protecting him from the probable agony of investigation during detention. Criminal law believes an accused as innocent until his guilt is proved beyond a reasonable doubt. Also, the Constitution of India guarantees the fundamental right against self-incrimination and guards against forcible testimony of any witness. The fundamental right ensured under this is a protective umbrella against testimonial compulsion in regards to persons accused of an offense

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<sup>6</sup> N. B. Narejo, M. A. Avais, Examining the Role of Forensic Science for the Investigative- Solution of Crimes, 252 SURJ (SCIENCE SERIES) Vol. 44(2) 2012.

<sup>7</sup> Forensic Sciences, National Institute of Justice, Office of Justice Programs, <http://www.nij.gov/topics/forensics/pages/welcome.aspx>, (last visited on 15.2.2016).

<sup>8</sup> Jyotirmoy Adhikary, DNA Technology in Administration of Justice, (LexisNexis, Butterworths, 2007).

to be witnesses against themselves. The protection is available not only in respect of evidence given in a trial before Court but also at the previous stage.

This right has been taken to ensure that a person is not bound to answer any question or produce any document or thing if that material would have the tendency to expose the person to the conviction for a crime<sup>9</sup>. Sec. 73 of the Indian Evidence Act gives authority to the court to direct a person including an accused to allow his finger impressions to be taken. The Supreme Court has also held that being compelled to give fingerprints does not violate the constitutional safeguards given in Art. 20(3)<sup>10</sup>. After this the CRPC, 1973 was amended in 2005 to facilitate the variety of a lot of medical details from charged persons upon their arrest. Sec. 53 of the Criminal Procedure Code 1976 provides that upon arrest, an accused person could even be subjected to a medical exam if there are “reasonable grounds for believing” that such examination will afford evidence on the crime. The extent of this assessment was expanded in 2005 to incorporate “the examination of blood, blood-stains, semen, swabs just in case of sexual offenses, sweat and sputum, fingernail and hair samples clippings by the utilization of modern and scientific techniques including DNA profiling and such other tests which the registered medical practitioner thinks necessary during a particular case<sup>11</sup>.” On the opposite hand, the availability that was introduced through an Amendment in 2005 is restricted to the cases associated with rape only. This section also does not permit a complainant to collect blood, semen, etc, for bringing criminal charges against the accused; neither does it apply to complaint cases<sup>12</sup>. In similar lines, Sec. 164A Code of Criminal Procedure, 1973 offers for the medical examination of a woman who is an alleged victim of rape within 24 hours and such medical examination includes the DNA profiling of the woman. Both sections allow medical practitioners within the meaning of Sec. 2(h) the Indian Medical Council Act, 1956 to collect a DNA sample. The matter lies on whether every medical practitioner is competent enough to collect and preserve DNA evidence or not. Any simple error or negligence can contaminate the sample and the contaminated sample is absolutely of no use.

Under the Indian Evidence Act, 1872, the forensic report is regarded as a “belief” tendered by an expert. He is one who has devoted time and knowledge to a special branch of learning and is thus especially skilled in that field wherein he is called to give his expert judgment<sup>13</sup>. The real function of the expert is to put before the court all the equipment’s, together with explanations which induce him to come to a certain conclusion, so that the court, although not an expert, may form its own judgment by its own observation of that equipment<sup>14</sup>. The trustworthiness of an expert witness completely depends on the reasons stated in support of the

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<sup>9</sup> McDougall, Justice Robert, The Privilege against Self-incrimination: a time for reassessment , Paper presented at New South Wales Bar Association, 18 October 2008.

<sup>10</sup> Gaurav Aggarwal, Smart Study Series Forensic Medicine & Toxicology 73 (ELSEVIER A division of Reed Elsevier India Private Limited, Gurgaon Haryana), 2009).

<sup>11</sup> [http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/India\\_DNA\\_Bill\\_Memo\\_2.0.pdf](http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/India_DNA_Bill_Memo_2.0.pdf)

<sup>12</sup> Supra, n. 8.

<sup>13</sup> Pragati Ghosh , Evidentiary Value of Expert Evidence under Indian Evidence Act, 1872, <http://www.shareyouressays.com/119180/evidentiary-value-of-expert-evidence-under-indian-evidence-act-1872>. (accessed on 26/06/2020).

<sup>14</sup> S. C. Parakh, ‘Expert Witness’ 421 IJA Vol.55 (2011).

conclusion and the tools, techniques, and materials, which form the basis of such conclusion<sup>15</sup>, the National Draft Policy on Criminal Justice Reforms has suggested that Indian Evidence Act needs some amendments.

### **SOME LANDMARK JUDGEMENTS IN FORENSIC SCIENCE INVESTIGATIONS**

In criminal cases specifically supported by indirect evidence, forensic science plays a really crucial role, which can assist in establishing the evidence of the crime, identifying the suspect, ascertaining the guilt or innocence of the accused. One of the main activities of the investigating officer at the crime scene is to form a radical look for potential evidence that has probative value within the crime. In certain cases, *The State of Bombay v. Kathi Kalu Oghad & Others*<sup>16</sup>, the court held that giving thumb impression, specimen signature, blood, hair, semen, etc. by the accused don't amount to 'being a witness' within the meaning of the said Article. The accused, therefore, has no right to object to DNA examination for the needs of investigation and trial. The Bombay High Court in another significant verdict in the case of *Ramchandra Reddy and Ors. v. The state of Maharashtra*<sup>17</sup>, upheld the legality of the use of P300 or Brain finger-printing, lie-detector test, and the use of truth serum or narco analysis. The court upheld a special court order permitting the Special Investigation Teams (SIT) to conduct scientific tests on the accused inside the fake stamp paper scam including the most accused, Abdul Karim Telgi. The verdict also maintained that the evidence procured under the effect of truth drug is also admissible. In the above-mentioned case, the Apex Court held that polygraph tests and brain mapping were inconclusive and thus their compulsory usage during a criminal investigation would be unconstitutional.

### **IMPORTANCE OF FORENSIC SCIENCE IN LAWS**

The word 'forensic' has its roots in the Latin word, 'forenses', which means 'a forum'. Back in early Rome, a forum mentioned a public place where judicial proceedings and debates were held. Thus, the origin and therefore the very definition of 'forensic science' points to its close association with the legal system. Forensic science involves the collection, preservation, and analysis of evidence suitable for prosecuting an offender within the court of law. The application of forensic science in the criminal justice system therefore, gives a clear picture<sup>18</sup>. The system widely recognizes the role of forensic evidence within the trial of criminal offenders. This is because when scientific techniques and methods are used, there is not much scope for bias or injustice. That is why DNA profiling and a host of other forensic evidences are widely accepted in courts across the world. Interestingly, the primary forensic technique ever used involving finger and palm print identification dates back to the Chinese (650 A.D.).

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<sup>15</sup> Prof. (Dr.) B. P. Tiwari, Evidentiary Value of Expert Opinion, 23 IJRRJ Vol. IV (2012).

<sup>16</sup> AIR 1961 SC 1808

<sup>17</sup> 2004 All MR (Cr) 1704

<sup>18</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4581010/>

Forensic evidence is extensively used worldwide to both convicted and exonerated defendants. Thus, forensic science laboratories have mushroomed all over the globe in the past couple of decades. In fact, special Acts have been enacted in the US, Canada, and Australia to improve the rendering of forensic services. This ensures that crimes are detected with greater certainty, and consequently, conviction rates can increase. Such Acts place an excellent emphasis on time-efficient and quality management of crime scenes<sup>19</sup>.

## **CONCLUSION**

In Indian scenario, there has been increased emphasis on the utilization of such technologies in criminal investigation and trials. The Commissions designated 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 are amended from time to time to form a way to be used for 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 the criminal justice system is to supply fair justice. Undoubtedly, forensic evidence is more authentic than visual evidence. Forensic science being scientific evidence may be a boon for the 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 moving 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 utilization of the case assessment and interpretation methodology)<sup>20</sup>. That such a methodology is embedded within a framework which allows for an understanding of the contribution that a particular 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 accurately, works to fulfil this problem solving potential. Such an approach has been suggested by the Association of Forensic Science Providers among others<sup>21</sup>.

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<sup>19</sup> <https://ifflab.org/the-importance-of-forensic-science-in-criminal-investigations-and-justice/>

<sup>20</sup> A model for case assessment and interpretation. Cook R, Evett IW, Jackson G, Jones PJ, Lambert JA Sci Justice. 1998 Jul-Sep; 38(3):151-6.

<sup>21</sup> Standards for the formulation of evaluative forensic science expert opinion. Association of Forensic Science Providers. Sci Justice. 2009 Sep; 49(3):161-4.