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## MODERN TRENDS IN TECHNOLOGY AND ITS IMPACT ON CRIME AND JUSTICE SYSTEM

### EDITORS

Dr. P.R.L. Rajavenkatesan

Dr. K. Ganesan

Mr. T. Abul Hassan

Ms. Navami. S



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VIT CHENNAI**



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Dr. M.S. Soundara Pandian,  
Professor & Dean  
VIT School of Law

12.03.2022



### FOREWARD

VIT School of Law (VITSOL) began its legal education journey seven years ago and has emerged today as a well-known institution for its pedagogy and campus activities punctuated with its conferences, seminars, debates, symposiums, and moot court competitions. These co-curricular activities value additions are designed and developed by the faculty members and the students of VITSOL.

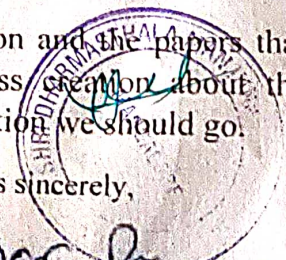
This national conference has been organized by VITSOL in a record short span of time of less than three months. Yet, we are encouraged by the good number of papers and deeper research undertaken by the presenters in diverse areas such as crime and technology, right to privacy and technology, information privacy in criminal justice, technology, crime and media, hate speech, cybercrime investigation, cyber forensics etc.

The criminal jurisprudence is undergoing a rollercoaster ride owing to the modern technologies and their influence on the Judiciary and the judicial system. With the increased penetration of technology, new opportunities have arisen in the cyber world; cyber security has been affected creating more vulnerabilities and risks. There is a need for addressing this menace, and to curb the wrongdoers at the earliest possible opportunity. The legislators need to create awareness among people and ensure their safety and protection in cyberspace.

I sincerely hope that the discussions by the experts in the plenary session and the papers that would be presented in the conference would identify the need for awareness creation about the cybercrimes and the need for stringent cyber laws and also guide us with the direction we should go.

Yours sincerely,

*M.S. Soundara Pandian*



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# Forensic Evidence in the Courtroom

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Ms. Suma Suresh Kogilgeri

## Abstract

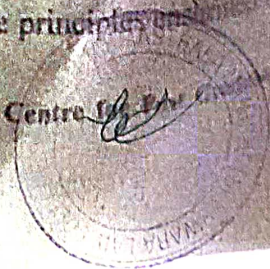
*Forensic science is the application of science in the field of law. The advancement in science and technology has tremendously impacted the criminal justice administration during the investigation as well as during the trial of a criminal case. For criminal cases, forensic science is inevitable today. Scientific methods like DNA, fingerprinting, firearms, footprints, odontology, pathology, anthropology, etc., provide truthful information upon which the court can rely in resolving a criminal case and to determine the guilt or innocence of the accused person. Forensic experts are summoned to give an expert opinion before the court of law. Many cases have been decided based on scientific evidence. In this paper, an attempt has been made to understand the role of forensic evidence in unravelling the truth in criminal trials and the role of expert evidence in a criminal trial.*

**Keywords:** Accused, Criminal Justice, Expert, Evidence and Forensic science.

## Introduction

The maintenance of law and order in society is the paramount duty of the State. State through its police department discharges this duty. We cannot imagine a crime-free society. Nevertheless, innovative measures can be adopted to control the crime rate and to put the accused behind the bar. Today crime rate has increased tremendously and taken a new turn scientifically and technically. Development in science and technology has influenced the way of committing traditional crimes. Nowadays it is very difficult to find out the criminal, as no traces of evidence are left behind. However, development in science and technology has proved to be a boon to the investigation department and also in the courtroom. Forensic science is one such area that connects law and science. It is the application of science in the field of law. It aids in solving criminal cases on a scientific basis. When a crime occurs, the crime scene is visited by forensic scientists to collect the scientific evidence. It aids in connecting crime with a criminal. Also helps in answering questions like the time of occurrence of crime, mode of committing a crime, and probable suspect. Forensic science is the application of scientific or technical practices to the recognition, collection, analysis and interpretation of evidence for criminal and civil law or regulatory issues. In the criminal justice system, forensic science is applied at two stages 1. During investigation and 2. During the trial. The admissibility of evidence during the trial depends on the principles and

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the Indian Evidence Act, 1872. When a forensic expert is summoned before the court to give evidence, his evidence is covered under the expert opinion under section 45 of the Indian evidence act. For example, in the case of a Motor vehicle accident case, expert opinion is sort on whether the said injuries are due to the accident, nature of the injuries, and the cause of death.<sup>1</sup> In this paper, an attempt has been made to understand the role of forensic evidence in unravelling the truth in criminal trials and the role of scientific evidence in a criminal trial.

**Forensic science:** The word 'forensic' is derived from the Latin word 'forum' which literally means 'place of trials'. It is based on Locardo's exchange principle. Sir Edmond Locardo, was Director of the Institute of Forensic Medicine in Lyons, France. According to this principle when two objects come into contact, there is always transference of material from one object to another.

**Forensic science laboratory:** In each state, there is a forensic science laboratory functioning under the Department of Home. Forensic science laboratories are headed by directors and have several divisions. Biology section, questioned documents section, firearms section, physical section, photography section, chemical section, forensic psychology section, toxicology section, DNA section, cyber forensic section.

**Forensic Science in Unraveling the Truth**

**Nirbhaya case<sup>2</sup>:** this is a case that shattered the entire world wherein a girl was gang-raped on December 16, 2012 in a moving bus. In this case, there was only one eye witness present with the victim at the time of the occurrence of the crime. The supreme court appreciated the investigating team for scientifically investigating the case. In the present case the DNA analysis<sup>3</sup>, odontology report<sup>4</sup> proved to be very beneficial to connect the crime with the criminals.

**Sister Abhaya murder case<sup>5</sup>:** a young nun was brutally murdered in her convent in Kerala's Kottayam. Initially, a story was cooked up saying that the victim committed suicide but, on the investigation, it was found that she was murdered by two priests and a nun when the

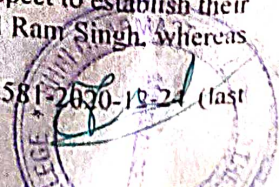
<sup>1</sup> Nageshkumar G Rao, Textbook of Forensic Medicine and Toxicology", Second edition 2010, Jaypee brothers Medical Publishers (P) Ltd, at p. 1.

<sup>2</sup> Hindustan Times, <https://www.hindustantimes.com/delhi/december-16-gang-rape-verdict-evidence-testimony-that-nailed-the-convicts/story-qhK1p31ldjrZuMrgd56zgj.html> last visited on 5th March 2022.

<sup>3</sup> Samples were lifted from the victim's body, the complainant, accused, clothes dumped at the spot, iron rods, ashes of partly burnt clothes and the bus to establish the incident. DNA profile generated from the blood-stained clothes of the accused and other articles are found consistent with the DNA profile of the victim and DNA profile of prosecution witness (complainant).

<sup>4</sup> Bite marks lifted from the victim's body were compared with the dental models of the suspect to establish their involvement. The analysis showed that at least three bite marks were caused by accused Ram Singh, whereas one bite mark has been identified to have been most likely caused by accused Akshay.

<sup>5</sup> India Today, <https://www.indiatoday.in/india/story/sister-abhaya-murder-evidence-1752581-2620-12-24> (last visited on 5th March 2022)



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victim saw them in a compromised position. All accused with common intention attacked the victim with an axe and caused her death and dumped the body in a well. The expert gave the opinion that the injuries on the head were sufficient to cause the death of the person. In this case, narco analysis was also conducted but it was held as inadmissible before the court of law. Actually, during narco test both the accused admitted the commission of the crime and also explained in detail how and why they committed the crime. Ironically the test result of narco analysis was held inadmissible as evidence.<sup>6</sup>

Shimla gang rape and murder case<sup>7</sup>: a 16-year-old girl went missing in the month of July 2017. Who was later found dead in a nearby forest. In this case, DNA analysis played a crucial role in nabbing the culprits. The investigating officer collected the scientific evidence like semen samples, blood samples etc., from the crime scene and sent it to the Forensic science laboratory for DNA analysis. DNA samples matched with that of the accused<sup>8</sup>.

### Role of Scientific Evidence in The Courtroom

Scientific evidence plays a very vital role in the courtroom. It will aid in supplying important links in a chain of evidence or support a shred of circumstantial evidence or strengthen a piece of weak evidence. Sometimes there are chances that, it may furnish conclusive evidence as well. However, the collection of evidence on the scientific basis and its admissibility as evidence during trial is totally a different question altogether. For admissibility of any kind of evidence before the court needs to fulfil the principles enshrined under the constitution of India and Indian evidence act. When it comes to scientific evidence the one who conducted the scientific analysis will be called as an expert witness to give his testimony on the report submitted by him.

### Expert Opinion

Section 45 is the provision that deals with the admissibility of scientific evidence before the court of law. Section 45 of the Indian Evidence Act deals with expert opinion. Section 45 is reproduced here with "when the court has to form an opinion upon a point of

<sup>6</sup> Latest Laws, <https://www.latestlaws.com/latest-news/sister-abhaya-murder-case-narco-analysis-of-accused-cannot-be-used-as-evidence-rules-hc-read-the-judgement> (last visited on 5th March 2022)

<sup>7</sup> India Today, <https://www.indiatoday.in/india/story/advance-forensic-tests-help-cbi-solve-shimla-gang-rape-murder-case-1219899-2018-04-25> (last visited on 6th March 2022)

<sup>8</sup> The CFSL, started matching the DNA of 250 people with the semen of accused. Initial results were negative. Later, the CFSL conducted 'percentage test' and 'lineage test' of all 250 samples and fortunately, it matched that of the sample.



foreign law; or of science, or art, or as to the identity of handwriting or finger impressions, the opinions upon that point of persons especially skilled in such foreign law, science or art, or in questions as to the identity of handwriting or finger impressions are relevant facts. Such persons are called experts." Section 293 of the Criminal Procedure Code, 1973 explains about reports of certain Government scientific experts. Under Section 293(2) the court is empowered to summon and examine any such expert as to the subject matter of his report if required. On many occasions, the courts have opined that scientific evidence is only opinion evidence. It is not a substantive piece of evidence. But they say that the doctor's opinion who has conducted the *post mortem* and of the reports of forensic science laboratory is reliable. It is further stated that unless there is something inherently defective in the report submitted by the expert, the court cannot substitute its own opinion for that of the expert. Several convictions have occurred in India on the basis of scientific evidence, which is admissible under section 45 of the Indian Evidence Act. Scientific evidence has become an established part of criminal justice jurisprudence, and the test results are admissible in court. India follows an adversarial system of justice administration and ordinarily scientific evidence is admitted only when the expert gives oral evidence under oath in the courts of law. Different procedures are adopted to collect scientific evidence from the crime scene. Often scientific evidence is challenged on the mode of collection, preserving, and authentication of samples. However, there is no proper guideline that needs to follow by all Forensic Science Laboratories. The fact is that expert opinion is covered under section 45, where the testimony of the expert has only of opinion nature and not conclusive. Few courts are reluctant to admit some type of scientific evidence on the ground that it is against the established rule of evidence. In 2010, *Ramesh Chandra Agarwal v. Regency Hospital Ltd*<sup>9</sup> the Supreme Court explained the meaning of the term 'expert' further said expert is "*a person who has devoted time and study to a special branch of learning, and thus especially skilled on those points on which he is asked to state his opinion.*" The Supreme Court in *Madan Gopal Kakkad v. Naval Dubej*<sup>10</sup> held:

A medical witness is called in as an expert and the evidence given by the medical officer is really an advisory character based on the symptoms found on examination. The expert witness is expected to put before the court all materials inclusive of the data which induced him to come to the conclusion and enlighten the court on the technical aspects of

<sup>9</sup> AIR 2010 SC 806 referred at Ratanlal and Dhirajlal, The Law of evidence, 25<sup>th</sup> Edition reprint 2015 LexisNexis at p 336  
<sup>10</sup> 1992 SCR (2) 921



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the case by explaining the terms of science so that the court although not an expert, may form its own judgment on those materials after giving due regard to the expert's opinion because once the expert's opinion is accepted it is not the opinion of the medical officer but that of the court. The real function of an expert is to put before the court all the materials together with reasons which induced him to come to a conclusion so that the court can decide on the matter. Expert testimony is made relevant by section 45 of the Indian Evidence Act, and where the court has to form an opinion upon a point, the court can seek the opinion of a person specially skilled in the field. In order to rely on the evidence of an expert, the court must be fully satisfied that he is a truthful witness and also a reliable witness.

### Judicial decisions

In *Anil @ Anthony Arikswamy Joseph v. the State of Maharashtra*<sup>11</sup> in this case a minor boy of 10-year-old was murdered brutally after subjecting him to carnal intercourse. The court relied on scientific evidence like DNA profiles and oral evidence, and the accused was convicted and punished with a death sentence and fine. In *Vishal Yadav vs State of UP*, Nitish Katara murder case, in this case, the body was burnt beyond recognition and with the help of DNA analysis, the body of the deceased was identified. This helped the Delhi High Court to convict the accused.<sup>12</sup> In *State by the Inspector of Police v. Manoharan*, in this case, the accused was booked for kidnapping and gang rape of a 10-year-old schoolgirl and dumped the body in the running canal.<sup>13</sup> In *State of NCT Delhi v Sujeet Kumar*, in this case, the accused was charged with the brutal rape and unnatural sexual act with a four-year-old girl child. DNA profiling was used to link the perpetrator with the crime. The trial court acquitted the accused. On appeal, the accused was convicted.<sup>14</sup>

### Conclusion

With the advancement of science and technology, criminal investigation demands scientific analysis of crime scenes. And scientific evidence has got the potential to aid the court to come to an effective conclusion. It is a potent weapon in the administration of criminal justice. However, in our country, it is not much used as it ought to be used, as we can see more acquittal rates even today. Moreover, section 45 is only opinion evidence and

<sup>11</sup> (2014)4S.C.C. 69

<sup>12</sup> (2014) S.C.C. Online Del. 1373

<sup>13</sup> 2015 Cri. L.J. 1215

<sup>14</sup> 2104 S.C.C. Online Del. 1952

not conclusive in nature. Sometimes the courts are reluctant to admit forensic science evidence for various reasons. Now it's time to work on the loopholes and find a viable solution to the problem faced in giving more weightage to scientific evidence.

