 DOI: https://doij.org/10.10000/IJLSI.111749

INTERNATIONAL JOURNAL OF LEGAL SCIENCE AND INNOVATION

[ISSN 2581-9453]

Volume 6 | Issue 1

2024

Law and Forensic Science

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ABSTRACT

This research paper sort to provide the information that how forensic science and law are interlinked and also the significance of forensic science in the field of law helps the authorities of law to secure equity and fairness in the society.

The difference between a scientific theory and law is that a theory is used to explain why something is observed. Scientific law is used to explain how the thing that is observed happened. The Laws are used to curb the problem that happened and prevent such incidents in the future by providing specific legislations to maintain stability in the society. Forensic Science is a multidisciplinary subject used for probing crime scene & gathering evidence to be used in prosecution of offenders in a court of law. More specifically, forensic scientists employ techniques and tools to interpret crime scene evidence and use that information in investigations. Forensic scientists and technicians come from a variety of academic backgrounds, although most have completed coursework in the life sciences, chemistry and law enforcement. Since forensic science brings together scientists and members of the judiciary to discuss and debate key areas of common interest and to ensure that the best scientific guidance is available to the courts, it creates a need for understanding of the forensic science to the lawyers and judge in his routine duties.

I. INTRODUCTION

The study of law is all about the kind of world we live in and how best to protect the values that we as a society hold. Law is an extremely proactive, a technical and competitive field that tests your smartness. It is about reason - argument, logic, facts and evidence which are its daily bread and butter. Most people after pursuing a degree of law opt for conventional career options such as corporate or civil law, corporate counsellor, legal researchers etc., but many of them are not aware that the forensic sector holds great opportunities. A combination of Science and Law might sound unusual, but it is one of the finest combinations. Law affects nearly every aspect of our lives, it give us rules of conduct that protect everyone's rights and on the other hand Forensic science as a scientific discipline uses the laws and principles of forensic science for the purpose of administration to terminate doubtful questions in the court of law. The term **forensic** is derived from the Latin word **forensis** which means belonging to courts of

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 [ISSN 2581-9453]

justice or to public discussion and debate, it therefore means the science which is used in courts for justice.

II. Development of Forensic Science in Law through ages

Crime in some form or the other has existed since the beginning of human race. With the advancement in science and technology the concept of crime as well as the methods adopted by criminals in its commission have undergone a phenomenal change, therefore it is important to understand the crime patterns of criminals in order to prevent miscarriages of justice.

History of forensic science considers Archimedes (287-212 BC), the man behind the exclamation 'Eureka,' as the father of forensic science. He had exulted when he had found out that a crown was not made of gold, (as it was falsely claimed) by its density and buoyancy. After Archimedes the another early forensic science application by Soleiman, an Arabic merchant of the 7th century who used fingerprints as a proof of validity between debtors and lenders. In the 700s, the Chinese also used the fingerprint concept to establish the identity of documents and clay sculptures. The first document that mentions the use of Forensics in legal matters is the book *Xi Yuan Ji Lu* (translated as "Collected Cases of Injustice Rectified") written in 1248 by Chinese author Song Ci that described the distinguished features of drowning from strangulation which was the 1st recorded application of medical knowledge to solve a crime.

Forensic science became quite widespread in 16th century Europe. Medics began to use their knowledge to investigate the cause of death and in the 18th century, also many scholars did some groundbreaking work in Forensics. Swedish chemist Carl Wilhelm Scheele and German chemist Valentin Ross led the way.

England also solved a number of murder cases using forensic science. For instance, in the year 1784 in Lancaster, John Toms was convicted of murder, when a torn bit of a newspaper in a gun was found matching a leftover paper in his pocket.

In the 1900s the establishment of forensic science in curricula by swiss professor R. A. Reiss at university of Lausanne Switzerland was a first step to establish forensic science as a discipline. In 1950 the university of California at Berkeley established one of the first academic department of criminology and American academy of forensic science in Chicago. Use of comparison microscope is started for bullet comparison and the use of headspace technique started in 1980's for analysis of volatile compounds in arson cases. For example in the case between June 1984 and August 1985, a Southern California serial killer dubbed the Night Stalker broke into victims' houses as they slept and attacked, murdering 13 and assaulting

numerous others. With citizens on high alert, an observant teenager noticed a suspicious vehicle driving through his neighborhood on the night of August 24, 1985. He wrote down the license plate and notified police. It just so happened that the Night Stalker's latest attack took place that night in that area, so police tracked down the car. It had been abandoned, but police found a key piece of evidence inside: a fingerprint. Using new computer system, investigators quickly matched the print to 25-year-old Richard Ramirez and plastered his image in the media. Within a week, Ramirez was recognized and captured by local citizens. He was sentenced to death and currently sits in prison on death row. This was one of the leading case that highlights the use of forensic science in order to deliver justice to the victims.

Justice was always in search of impartial evidence, as against testimony of unwilling, hostile, indifferent witnesses. In the beginning of the 19th century, natural sciences began to develop rapidly. The science of forensic is recognize as a critical ingredient in law enforcement. Its developing and maturing day by day. All the old techniques are getting improved. In the present era the intelligent criminal has been quick to exploit science for his criminal acts and the investigators on the other side use modern techniques for the investigation of crime and collection of evidence which include traces of papers, objects, dirt and mud, blood, saliva, fingerprints, and much more. In the case, The Green River Killer was responsible for a rash of murders — at least 48 but possibly close to 90 — along the Green River in Washington state in the '80s and '90s. Most of the killings occurred in 1982-83, and the victims were almost all prostitutes. One of the suspects that police had identified as early as 1983 was Gary Ridgway, a man with a history of frequenting and abusing prostitutes. However, although they collected DNA samples from Ridgway in 1987, the technology available didn't allow them to connect him to the killings. It wasn't until 2001 that new DNA techniques spurred the reexamination of evidence that incriminated Ridgway. He was arrested and later confessed. Ridgway pleaded guilty to 48 murders — later confessing to even more, which remain unconfirmed — in exchange for being spared the death penalty. He was sentenced to 48 life sentences without the possibility of parole.

So, in this way we encounter that how forensic science found its existence through ages and applied in different cases to deliver justice and punish the accused.

III. SCOPE OF FORENSIC SCIENCE IN LAW

As our society has grown more complex it has become more dependent on rules of law to regulate the activities of its members. Laws are continually being broadened and revised to counter the alarming increase in crime rates. In response to public concern, law enforcement

agencies have expanded their patrol and investigative functions, hoping to stem the rising tide off crime. Each year, as government finds it increasingly necessary to regulate the activities that most intimately influence our daily lives, science merges more closely with civil and criminal law. Forensic science is mainly the application of science to the criminal and civil laws that are enforced by police agencies in a criminal justice system. It uses a combination of physics, chemistry, and biology to identify and arrest the criminal, and present the evidence in court which helps to convict the guilty. There are following principles of forensic science which have been used and had a direct impact on criminal proceedings from the start of investigation till the accused is convicted by the competent judicial authority:-

Law of Individuality:

Law of Individuality states that, "Every object whether natural or man-made has a unique quality or characteristic which is not duplicated in any other object." The law of Individuality has been verified in different fields and the most common among them is the fingerprints. Millions and Billions of fingerprints have been studied and yet not a single fingerprint has matched with other whether it is of twins or two fingers of same person. Any two objects may seem similar to each other yet a unique characteristic is always present between them.

Principle of Comparison:

Principle of Comparison states that, "Only the likes can be compared. It highlights the need to provide like samples and specimens for comparison with the questioned evidences. In a murder case, the expert is of the opinion that the person was killed by stabbing with a sharp piece of rod. It will be unnecessary to send a knife for comparison.

Principle of Analysis:

This principle states that, "There can be no better analysis than the sample analysed." This principle highlights the need for correct sampling and packaging of evidences to avoid tampering & destruction and for effective analysis and results. Incorrect sampling may mislead the investigation. For example, in a rape case, the investigating officer collected the clothes of the victim which had semen and blood stains on it for examination and determination of blood group from them to find and punish the accuse.

Law of Circumstantial facts:

According to this law, "Facts do not lie, men can and do." Facts cannot be wrong, it cannot lie, it cannot be wholly absent. Therefore, the importance of circumstantial facts is good for oral evidence. In a case where a person is in armed forces is known to carry his duty till 10 pm and

resumes in the morning at 9 am. He secretly slips out of the unit at night kills a person and returns back secretly to join the duty on time. By circumstantial evidence, he can prove his presence in the unit at that time and escape the punishment.

The above mentioned principles highlights that how the application of science to law can terminate doubtful questions in the court of law.

IV. ADVANTAGES AND DISADVANTAGES OF FORENSIC SCIENCE IN JUSTICE SYSTEM

Forensic science applies the knowledge and technology of science to the definition and enforcement of laws as it closely works with criminal justice system. The Forensic science expertise helps to prepare evidence for the court. They provide results for their examination in a structured way using specialised knowledge which is likely to be beyond the realm of the ordinary member of the jury and ordinary members of the public. The forensic evidences which are presented in the court needs to be examined carefully otherwise it has a potential to effect thousands of people if it is misinterpreted. In 2015 the FBI study looked in 268 cases where the evidences were use to meet the suspect and what they have found that in 257 of those cases fallacious statements were made which means that in 96% of the cases the forensic evidences were misinterpreted which can possibly cause great harm to a innocent person. Therefore, it can be concluded that forensic science needs the expert guidance to simplify the processes and procedures involved in the criminal forensic cases for a better understanding in order to comply with the principles of natural justice.

V. CONCLUSION

The need for reforms in the law in view of social changes has been recognized and in many countries attempts at such changes are afoot. With these changes a new reality is being defined. Forensic Science, being a discipline that comes first in contact with a multitude of emergent problems, has a part to play in the definition of this reality. In today's world Forensic Science makes an important contribution to the operation of the Criminal Justice System providing evidence which could help in convicting the guilty and exonerating the innocent people. Forensic Science is able to do so because it has developed to operate within the reality determined by the Criminal Justice System- a role that relates to the scientist's ability to supply accurate and objective information about the events that have occurred at a crime scene. They establish a criminal's patterns and characteristics by conducting investigative operations such as ascertaining the cause of death, identifying suspects, locating missing persons, and profiling criminals in order to narrow the suspect pool. So, plainly, legal practitioners need to learn medical jurisprudence, and medical practitioners need to know the law in order to uncover the

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truth and present it to lawyers and judges for the delivery of justice to the the victims.

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