



A STUDY OF IMPORTANCE OF ELECTRONIC EVIDENCE AND APPLICATION OF FORENSIC SCIENCE IN CRIMINAL INVESTIGATION

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ABSTRACT

The judicial system's track record in dealing with electronic evidence has not been very reassuring, and for good reason: protecting the authenticity of digital evidence is difficult. The judiciary often misinterprets evidence because it is not technically savvy enough to understand it. In numerous cases, forensic specialists have also had trouble getting courts to grasp the technical details of the evidence they had gathered. Thus, it would be beneficial to establish specialized courts to handle cyber-crimes, complete with sufficient resources and judges who are knowledgeable on such technical challenges. Cases currently being heard in multiple courts could be resolved more quickly if this were implemented. Currently active cyber-crime cells around the country should have access to highly technical personnel and cutting-edge crime and investigative infrastructure. Cybercrime cells need not just technical specialists, but also criminal justice professionals. The police do not have the training or experience necessary to use cyber forensic techniques effectively. Due to a lack of technical expertise, even the district level forensic labs are skeptical of handling the data. Understanding the process that law enforcement uses and the difficulties they face when dealing with electronic evidence is crucial. The police often lack the expertise necessary to perform a thorough search in a digital setting, especially one that relies on a networked infrastructure. This causes them to miss out on crucial information and clues. The entire criminal justice system becomes useless when criminals are consistently acquitted as a result. Lack of jurisdiction to investigate cybercrimes, lack of resources, lack of interstate collaboration, lack of recruitment rules for scientific officers, etc., are only a few of the obstacles that must be overcome. The preceding paragraphs have begun to address some of these difficulties. While scientific evidence should not lower the bar for proof in criminal trials, it would also be wrong to deny the benefits of new techniques and technologies to the law of evidence, so long as the veracity of the recording can be established. Evidence of this sort should be viewed skeptically and evaluated in the context of the whole situation.

KEYWORDS: Electronic Evidence, Forensic Science, Criminal Investigation, judicial systems, digital evidence, cyber-crimes, Cybercrime cells

INTRODUCTION

The prosecution of a criminal case relies heavily on evidence. The burden of proof or refutation rests on the prosecution and defense, respectively, in any criminal trial. According to Sir Blackstone, "Evidence"

refers to everything that proves, clarifies, or establishes the veracity of the facts or points at question, from either side of the argument. The basic goal of any criminal justice system following a crime is to ensure that the victim receives justice. To



do this, it may be necessary to rely on the best evidence rule, which requires presenting the strongest evidence possible without casting any doubt on its veracity. Hardened criminals are frequently freed on the slimmest of evidence because they cannot be convicted. It is the most important factor in deciding whether or not someone is guilty of a crime. As a result, there must be no room for debate about the methodology used to gather, analyze, and present such evidence in court. Evidence in criminal cases is identified, collected, preserved, and analyzed by law enforcement agencies as well as other branches of the criminal justice system. The burden of determining whether such evidence can be admitted into court rests with the court, which must use the rules of evidence in order to reach a decision. A judge presiding over a criminal case has the solemn obligation to fairly evaluate the evidence presented before them, free from the influence of personal philosophy, abstract concepts, conjectures, and surmises, as well as any speeches or other non-binding social commentary. He needs to completely shun bigotry and bias. Opinion bias can exist even in the absence of personal bias. As a judge, you must remain objective as you weigh the merits of both the prosecution's and the defense's arguments. You must focus on the issues at hand, listen carefully to both sides' arguments, and write down your findings after giving them careful consideration.

The 'best evidence rule,' as the requirement for delivering the most convincing evidence in criminal proceedings is commonly known, has been repeatedly emphasized by the courts. The factual questions decided by the courts are ones in which the judges have no prior expertise.

They base their conclusions on either the testimony of witnesses with firsthand knowledge of the facts at issue, the testimony of qualified experts, the contents of admissible and properly proved documents, inferences drawn from the facts, or the presumption under a mandatory provision of law, taking into account the principles of burden of proof. If admissible, properly shown, and able to prove the fact in question beyond reasonable doubt, documentary evidence appears to be the finest evidence available to the Court for rendering a finding on the question of fact.

Similarly, in another judicial intervention, generating high-quality evidence The Court emphasized the importance of the rule that the party with the burden of proof must present the most compelling evidence in its possession. For this reason, the Courts may require the production of a key witness's testimony if it can be reasonably characterized as the best evidence in the case. If for any reason it is not feasible to produce the strongest evidence, then. The party would be left with no choice except to present whatever evidence they could muster as a "next best," and the court would be required to evaluate this evidence in determining whether or not the alleged fact had been proven. Every fact relied upon by the prosecution in a criminal case must be proven beyond a reasonable doubt, regardless of whether the evidence is documentary, oral, circumstantial, or based on presumptions required by any mandatory provisions of law. Evidence, such as physical evidence, scientific evidence, witness testimony, etc., plays a huge role in criminal trials and its strength and admissibility are crucial.



IMPORTANCE OF EVIDENCE IN CRIMINAL PROSECUTION

In criminal proceedings, it is standard practice to require proof beyond a reasonable doubt. Therefore, it becomes difficult for criminal justice administration institutions to ensure this. It's natural to wonder how impartial judges can make decisions regarding the freedom of others when they weren't at the site of the crime, weren't eyewitnesses to what happened, and can't verify the veracity or authenticity of the witnesses who have been brought before them.

Accordingly, it has been noted that several forms of evidence have been used by courts to reach a verdict in criminal cases. The court will apply different rules of evidence based on the law of evidence to reach a conclusion depending on the type of evidence presented.

1. NATURE OF LEGAL EVIDENCE

There are two main categories of legislation: substantive laws, and descriptive laws. Legal rights and responsibilities are established by substantive law, while adjectival laws govern how matters are presented in court and how the rights and responsibilities established by substantive law are proven or enforced. Adjective law includes the law of evidence and other areas of procedure, both criminal and civil. Procedure law is "the branch of law that deals with the rules of evidence, pleading, and practice," as defined by Merriam-Webster. Some academics argue that it doesn't matter much if the law of evidence is classified as procedural law. However, there has been agreement that law of evidence should be considered a subset of adjective law in order to facilitate a more efficient method of judicial case

adjudication. Procedural laws mostly deal with how pleadings can be framed, investigations can be performed, evidence can be obtained, etc., thus there is some evidence law in there. The law of evidence is not automatically an element of procedural law because of this.

Evidence, and the laws that govern it, is a crucial part of the criminal justice system. Evidence, a word derived from words in the dead languages meaning to see, to know, is used to denote the means by which any alleged matter of fact, the truth of which is submitted to investigation, is established or disproved. This is true regardless of the subject matter of the judgment. The law of evidence refers to a body of rules that governs the admissibility of evidence in a court of law and is distinct from the substantive facts that have been admitted for the jury's consideration (the actual legal evidence).

There are two possible readings of the court-facilitated character of proof: The law does not provide a specific inference technique for courts to follow. As defined by the Oxford English Dictionary, evidence is "any matter of fact, the effect, tendency, or design of which is to produce a persuasion in the mind of the existence or non-existence of some other matter of fact." The court must therefore draw conclusions or inferences based on its own subjective impressions. The analysis has the benefit of allowing the court to analyze any relevant material. On the other hand, the presentation of evidence might influence the conclusions that can be taken from it. Second, the court accepts the best possible and available evidence in any conflict, which may not always result in the truth due to the court's limited time and resources. Therefore, each disputing party



plans its strategy such that evidence discovery and interpretation serve only to substantiate or disprove its own position, or the position of the other disputing party. Thus, the law of evidence is the body of rules developed or enacted to govern (a) the facts required to be proved and produced before the court, (b) determining the burden of proof on the parties, and (c) the required standards of proof to win the case in the major legal systems such as common law or civil law countries.

2. STANDARDS OF PROOF

A criminal trial is not a make-believe world where one can let their imagination run wild. As an actual occurrence, crime results from the complex interaction of various human emotions. The court must weigh the evidence against the balance of probabilities, the evidence's inherent value, and the witnesses' animosity in order to reach a verdict on the guilt or innocence of the accused. In any criminal justice system, it has always been understood that proving the existence of a crime requires evidence that can be used to pinpoint its origin and name its author. When you prove anything, you dispel reasonable doubt about its veracity by providing evidence that supports your claim based on the given facts and circumstances. There are different standards of proof, as proof is not a one-dimensional phenomenon. The standard of proof is the level of certainty required by the court to acknowledge the reality of a fact. Criminal law and civil law are the two primary norms. 'Beyond reasonable doubt' is the required level of proof in criminal cases. In a criminal trial, the prosecution must prove guilt beyond a reasonable doubt before a guilty verdict may be reached. Even if a court has some doubts regarding the accused's guilt with

this evidence, those doubts are deemed to be unimportant. The prosecution may construct a compelling case for conviction if they can establish their case beyond a reasonable doubt. A civil case requires proof of a truth only by a "preponderance of probability," a lower standard of proof. If there is more evidence supporting the claim than there is to refute it, then the claim is accepted as true.

3. BURDEN OF PROOF

The term "burden of proof" refers to the onus placed on one's shoulders to provide evidence for a claim. This means that the person making the affirmative allegation, the plaintiff in a civil action or the prosecution in a criminal case, is always responsible for proving the entirety of their case. The accused has a presumption of innocence in criminal proceedings, and it is the responsibility of the prosecution to prove guilt beyond a reasonable doubt. In other words, the nature of dispute and the applicable law determine which party must provide proof. The accused is only required to present evidence in support of his defense or exception if he is relying on a specific independent point of defence or a general exception.

4. CHARACTERISTICS OF EVIDENCE

Adducing evidence in an adversarial system is done so that the judge can make an informed decision about a fact that is in dispute. Determining what evidence will be presented to the court is crucial if you want a ruling from that person. In order to be presented in court, evidence must meet certain criteria, such as relevancy, admissibility, evidential integrity, etc.

APPLICATION OF FORENSIC SCIENCE AND EXPERT EVIDENCE



New trends in criminal prosecution do not paint a positive picture of India's criminal justice system. Witnesses must be able to testify in court or cooperate with law enforcement without fear of retaliation in order for the rule of law to be upheld. Since the government lacks an effective witness protection program, few reliable witnesses will come forward to testify in court without fear of reprisal, and even the most hardened of criminals are able to evade justice. The prosecution's best witnesses frequently flip on the prosecution for a variety of reasons, including intimidation, fear, and bias. Therefore, the investigating agency must seek other techniques and means to increase the quality of the investigation, and scientific evidence collection is the only viable option. Criminal investigation is the backbone of any criminal case. The scientific method, aided by forensic science, is far superior to the witness-based criminal justice system in terms of power, reliability, and productivity. A victim must not be judged solely by the testimony of onlookers. DNA, ballistics, fingerprinting, toxicology, and other forensic science disciplines are more trustworthy than the testimony of average citizens when it comes to criminal cases. In today's technically advanced world, legal frameworks must be established on both scientific and legal solid ground. State of Uttar Pradesh in the case of Dharam Deo Yadav. , the Supreme Court held:

If we want to save our criminal justice system, we must abandon tried and true practices and principles in favor of fresh ideas. With the emergence of new sorts of crimes and the increasing expertise of criminals, conventional methods and

technologies for crime detection have become inadequate. When compared to forensic evidence, oral testimony is weakened by factors including the witness's ability to remember, feel shame, or be influenced by others. The judicial system ought to be prepared to cope with such scientific evidence. It seems likely that judges would benefit from greater exposure to scientific and engineering expertise in order to better handle criminal cases supported by such evidence. We are not arguing that scientific evidence should always be used as the gold standard for detecting and proving criminal acts; rather, we are underlining the importance of doing so.

The importance of forensic science and scientific tools in solving crimes is growing as a result of scientific and technological advancements. Without a doubt, this is a step in the right direction toward improving the credibility of investigations and the likelihood of bringing culprits to justice by increasing objectivity. To use scientific methods to problems of legal significance is the essence of forensic science. To be more specific, forensic scientists use specialized equipment and methods to analyze evidence gathered at crime scenes. In the modern world, forensic science is a key aspect of the criminal justice system, as it is an advanced scientific approach utilized in criminal and civil investigations that can provide answers to crucial questions.

ADMISSIBILITY OF SCIENTIFIC EVIDENCE: JUDICIAL APPROACH

While it's undeniable that using scientific evidence and employing different scientific methods to extract evidence has helped streamline the criminal investigation process, it's also been a



challenge to ensure that such evidence is both reliable and admissible in court. Expert witness testimony from the scientific and technological communities has inundated the legal system in recent years due to the proliferation of cases involving increasingly complicated and technical topics. The issue of its admissibility and credibility in court has also been a source of contention. Numerous observers have offered their thoughts on the topic of admissibility. Various articles have investigated this question and presented arguments for and against the admissibility of scientific expert testimony.

In the past, it has been seen that medical professionals have monopolized the expert opinion field. With the advancement of forensic science and technology, however, the scope of expert testimony has broadened beyond medical perspectives. Computer evidence, digital audio, digital video, cell phones, and digital fax machines all fall under the umbrella term "Electronic Form of Evidence" for the purposes of this section

includes people knowledgeable in related subjects. Ballistics experts, forensic scientists, chemical examiners, psychologists, radiologists, and even track-dogs all play an important role in the criminal justice system, and the evidence they collect is admissible in court. Expert testimony has been requested by the courts in a wide variety of circumstances.

The term "opinion" refers to any inference drawn from observable facts in the context of the law of evidence, which is based on the principle that witnesses can only testify as to what they have personally witnessed. The duty of the witness is limited to the presentation of facts, whereas the role of

the judge is to make inferences from those facts. But it is a matter of law that judges are not always able to draw the right inferences from the facts given by witnesses, especially in topics requiring particular expertise or ability. A witness's view on such things is admissible if he is an expert in the field. Forensic science is the only source the court will ever use to form an opinion based on specialized training or experience. The most difficult aspect of such expert testimony, however, is establishing the validity and reliability of the underlying scientific methods.

The real or potential forensic application of science and technology in any criminal trial has increased significantly in recent years. There is a growing trend of bringing newly developed ideas and approaches into the courtroom to verify facts at dispute. A trial judge will often have to decide if evidence resulting from the new scientific breakthrough can be used in court. The judge's job in rendering an admissibility determination is to apply an admissibility standard to the submitted evidence. The speed with which and the ease with which scientific information becomes evidence are both determined by the admissibility standard, which acts as the mechanism by which the values of the legal system are imposed on scientific knowledge. As a result, the norm has significant implications for providing evidence.

CONCLUSION

Over the past few decades, we've seen a dramatic shift in the kind of crimes perpetrated by offenders from all walks of life. While it's true that crimes like murder, rape, theft, criminal intimidation, defamation, and so on still flood the courts, the increasing sophistication of



criminal tools is indicative of a shift. Therefore, when addressing such old crimes, investigating authorities must deal with a new form of evidence, namely electronic or digital evidence. Problems resulting from such evidence have not been solved by simply applying intelligence to the investigation of the technical aspects of such crimes. The other side of this is that there are crimes perpetrated in cyberspace that specifically target computers and other digital devices. The investigation of such crimes in the present day has not been helped by simply applying the old norms of evidence. Electronic or digital evidence is distinct from physical evidence due to its own special properties. To start, it's considerably simpler to alter data in an electronic format. The second advantage of digital copies is that they may be made without altering the original file in any way. Simultaneously, it is possible to establish the honesty of such proof. The phases of a computer forensics inquiry can only be understood and their integrity preserved if one has a firm grasp on the special characteristics of electronic evidence. The truth is that probing such crimes is difficult. It's not uncommon for the evidence to be abstract. The Investigator faces special difficulties in amassing, appreciating, analyzing, and preserving this data. The proliferation of online resources and widespread adoption of networked systems have contributed to this complexity. Someone in India may use a computer in China to access a U.S.-based system via the Internet and steal data. In such situations, problems arise on both the technological and the legal fronts. As a result of these kinds of objections, the conviction rate for cases incorporating

electronic evidence is extremely low. Not only that, but there is a substantial backlog of cases in the judicial system. The pendency of cases in India was over 92% until 2016, according to data provided by Indiatat on State-wise disposal of cases, which is extremely high.

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