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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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**EXPERT EVIDENCE: RULE OF ADMISSIBILITY IN INDIA WITH SPECIAL REFERENCE TO BALLISTICS**

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**ABSTRACT**

*The law of evidence is the edifice on which the system of dispensation of justice rests. In fact, the purpose and object of evidence is to guide the Courts to come to a conclusion regarding a case at hand. But, in certain cases, where the questions involved are beyond the range of common experience and knowledge, evidence in form of facts pose problems as the Court may not have sufficient competence to arrive at a conclusion based on those facts. Thus, the need arises for experts who have the required ability and knowledge to tender evidences. Section 45 of the Indian Evidence Act, 1872 deals with expert evidence. It allows an expert to tender evidence on a particular fact in question and to show to the court that his findings are unbiased and scientific. In contemporary times, the reliance on expert evidence has been overwhelming, especially in the area of ballistics. The present article tries to critically analyze the rules of admissibility with regard to expert evidence, in general and ballistics evidence, in particular.*

**KEYWORDS**

Ballistics, Expert, Evidence, Admissibility, Opinion.

**INTRODUCTION**

The law of evidence is the edifice on which the entire system of dispensation of justice is based. Infact, the purpose and object of evidence is to guide the Courts to come to a conclusion regarding a case at hand. But, in certain cases, where the questions involved are beyond the range of common experience and knowledge, evidence in form of facts pose problems as the Court may not have sufficient competence to arrive at a conclusion based on those facts. Thus, the need arises for experts who have the required ability and knowledge, through experience and education, to tender evidences on facts. Expert Evidence is the desideratum of the present century where complex and intricate issues involving scientific knowledge and technological skills are slowly being enmeshed in legal domain. But how far that scientific testimony can make way in the traditional adjudication mechanism is a big question and the present article examines the extent and scope of admissibility of expert evidence and its appreciation by courts, especially in the area of Ballistics.

**EXPERT-WHO IS**

Section 45 of the Indian Evidence Act, 1872 deals with expert evidence and allows the production of an expert to aid the judge to form an opinion on points of foreign law or science or art or as to identity of handwriting.<sup>1</sup>

An expert is a person who has devoted time and study to a special branch of learning, and thus, is especially skilled on those points on which he is asked to state his opinion. Under Section 45 of the Indian Evidence Act, 1872 expert means one who is a "specially skilled person". Such persons may also be considered as experts who practice a business/profession, which requires them to possess certain knowledge of the matter in hand.

There are no tests as such laid down by law to determine how much experience or qualification a person must possess to be taken as an expert. A combination of elements may be considered for accepting a witness as an expert, like:

1. Expertise, including academic achievements, professional training, experience in the trade, means at the command and the application of those means for coming to a conclusion.
2. Clarity, include avoidance of jargons, use of simple language, evidence supported by photographs, charts, sketches etc. so as to make his opinion appreciated by layman.
3. Relevancy does not include mere presumption of facts, but drawing of conclusions either from his own experience or from published works of accredited authors.

**EXPERT EVIDENCE: ADMISSIBILITY AND APPRECIATION**

Expert evidence is an "opinion" evidence" and as a general rule, the opinion of a witness on a question of fact or of law is irrelevant.<sup>2</sup> A witness may testify only to facts, not to their effect or result, or to his conclusions based on those facts and he can give as evidence only of facts, which he has directly perceived through his senses.<sup>3</sup> It is the function of the judge to form his own opinion on the facts stated.<sup>4</sup> The opinion of witnesses possessing peculiar skills (as of experts) is an exception to this rule.<sup>5</sup> It is important to note here that the opinion of an expert is not accepted just because he says so. He has to satisfy the court about his expertise on the particular fact in question<sup>6</sup> and further, has to show to the court that his findings are unbiased and scientific. The duty of the expert witness is to furnish the judge with necessary scientific criteria for testing the accuracy of the conclusions so as to enable the judge-to form his "independent" judgment by application of these criteria.<sup>7</sup>

The report of an expert is not admissible unless he has been examined as a witness and the party affected by it has had the opportunity of cross-examining him. Further, a finding by an expert, not supported by reasons, has to be rejected.<sup>8</sup> Thus, the admissibility of an expert's evidence is subject to certain checks, which are in furtherance of the basic ideas of justice. It is argued that after all an expert is a human being and it must be borne in mind that an expert witness, however impartial he may wish to be, is likely to be unconsciously prejudiced in favour of the side which calls him. The mere fact of opposition on the part of the other side is apt to create a spirit of partisanship and rivalry, so that an expert witness is unconsciously impelled to support the view taken by his own side. Besides, it must be remembered that an expert is often called by one side simply because it has been ascertained that he holds the views favourable to its interest.<sup>9</sup> This is one reason why at times in certain cases two experts reach a different conclusion on the basis of the same material.<sup>10</sup>

Some scholars are antagonistic to the very concept of expert evidence and opine that "perhaps the testimony which least deserves the credit is that of skilled witness. These witnesses are usually required to speak, not to facts but to opinions: and when this is the case, it is often quite surprising to see with that facility, and to what an extent, their views can be made to correspond with the wishes of the interests of the parties who call them."<sup>11</sup>

The response to this view can be that the general motto for expert witnesses, viz. "An expert witness is there neither for the prosecution nor for the defense, but is there to assist the Court" should be sacredly espoused by the experts and an approach of caution should be taken up by the Court. This basically means that the rule that "it is unsafe to base a conviction solely on the expert opinion without substantial corroboration" should be applied in all cases<sup>12</sup> where an expert witness is giving evidence. Further, the testimony of an expert is to be received with great care and caution.<sup>13</sup> It has also been held by the Courts that the "expert evidence is a weak type of evidence that needs independent and reliable corroboration".<sup>14</sup> Although there is no clear bar to base a conviction solely on expert evidence,<sup>15</sup> it is advisable, in the opinion of the authors, not to base conviction solely on the opinion evidence of an expert, "especially if the evidence so adduced is not supported by logical and scientific reasons."<sup>16</sup>

One of the rules of caution that all courts follow as regards expert opinion is that they should never surrender their free will or independence or judgment to an expert. In all cases in which expert evidence is adduced before it, the Court must after giving it such weight as it deserves and the court thinks fit, make up its own mind upon the issue in respect of which the expert testimony has been given.<sup>17</sup>

## FORENSIC BALLISTICS: MEANING AND SCOPE

The word "Ballistics" is etymologically derived from the Latin word 'ballista' and refers to a body in motion. Ballistics is that part of forensic science which deals with the study of motion of projectiles. Projectile is known as a body projected by force mostly from firearms, especially through air. The science of projectile thus involves the study of firearms.<sup>18</sup> Forensic ballistics is the study of firearms, ammunition and explosives with a view to reconstruct the crime scene accurately. It has now become an integral part of the crime investigation as the reconstruction can lead to many evidences which can be used in a given case with major effects. The general fact of ballistics is that no missiles discharged from the same or different firearms bear the same trace marks.<sup>19</sup> Thus, for example, each rifled firearm leaves its own striations (a sort of tell-tale finger-print) in terms of barrel and firing pin markings on the fired bullet and cartridge case respectively. This makes it possible to trace a bullet or cartridge to the particular weapon, which is in question. If an evidence bullet has the same class characteristics and matching individual characteristics to test bullets fired from a 'suspect firearm', the firearm examiner can conclude that the bullet was fired from the suspect firearm.<sup>20</sup> A successful demonstration of these facts by the use of comparison microscope along with photomicrography can be the most valuable and foolproof evidence.

Ballistic experts work closely with the police investigating officers, members of the legal profession and judiciary before whom they eventually appear as independent expert witnesses.<sup>21</sup> They, play an important 'complementary' role in ensuring justice in the modern society.<sup>22</sup> With the assistance and expertise of ballistics, it is now possible not only to tally the cartridge fired with the firearm used, but a number of other important factors also, though with varying degrees of probability. Among these factors are the range of fire, the approximate time when the firearm was discharged<sup>23</sup> and other questions of similar nature. A ballistics expert with the help of a chemical analyst can discover several facts in relation to the part played by the particular firearm in the commission of the offence, the nature of ammunition used, etc. The services of a ballistics expert is therefore necessary and valuable in cases where firearms are recovered either at the scene of the crime or from the accused.<sup>24</sup>

Sometimes firearms are left on the scene of an event. The place where the firearm is found is carefully surveyed to find foot-footwear prints, transport tracks, etc. Handprints may be detected too, specifically on the trigger guard, slide casing and other parts. In visually inspecting a firearm, all its structural features, damage and contamination is described in the report. The type, model, caliber, number and trademarks are established by the ballistics expert. The condition of the bore walls is also checked to detect the presence or absence of powder gas odour, which is very important for establishing when the shot was fired. Then, the flight detection of the projectile is determined by inspecting all the objects in the line of fire, especially all the dents and damages in walls, ceilings and floor. When inspecting the bullet, the ballistic expert establishes its form design, size, colour, number of traces left by the bore lands. When inspecting pellets, their number, form, maximal and minimal dimensions are also established by the ballistics expert. All of these are some of the procedures followed by the ballistics expert to help in reconstructing the offence committed with fire. In addition to the above investigations and methods, the ballistic expert also has to decide some other questions, namely; a) whether a given object is a firearm-this question could arise in examining a homemade weapon manufactured in simplified form to copy a known model. The question is resolved by studying the mechanism and the individual parts of that device to see whether it can actually ignite gunpowder, eject a projectile and develop striking power b) Whether a shot can be fired from a given type of weapon- this question is important in establishing its possible use as an instrument of crime c) Whether the weapon was the one used in the commission of the crime.

In the light of the above discussion, a ballistic expert has two basic functions: -<sup>25</sup>

1. The scientific function — collecting, testing and evaluating evidence and thereby forming an opinion as to that evidence.
2. The forensic function — communicating that opinion to the Court so as to help it reach a logical conclusion.

## BALLISTIC EXPERT'S EVIDENCE: ADMISSIBILITY AND APPRECIATION

In India, in the case of *State (through Central Bureau of Investigation New Delhi) v. S. J. Choudhary*,<sup>26</sup> the Supreme Court has held that the expression "science or art" in Section 45 of the Evidence Act 1872 is of wide import. Each of the words 'science' and 'art' has to be construed widely to include within its ambit the opinion of an expert in each branch of these subjects: the meaning of the word 'science' as understood ordinarily with reference to its dictionary meaning must be attributed to the word. Therefore, the present section 45 of the Indian Evidence Act, 1872 can be better worded by amendment to clearly imply the above observations. It would be of further help if the words "or of science or art" in section 45 of the Indian Evidence Act, 1872 are substituted by the words "or of science, art, skill or trade or others of the like kind."<sup>27</sup>

Thus, by the above given understanding of Section 45 of the Indian Evidence Act, 1872 the word 'science' is not just confined to physical sciences, but any matter for the purpose of forming an opinion which requires some special skill, special training or special study is regarded as science. Thus, it can be easily concluded that in criminal cases where firearms are alleged to have been used, the Court is fully justified in 'admitting' the opinion of the ballistic experts as they are persons specially trained in this field of science. This is made clear by the Supreme Court of India in the case *Sukhwant Singh v. State of Punjab*,<sup>28</sup> where it was held that 'the failure to produce the expert evidence before the trial Court affects the credit-worthiness of the prosecution case to a great extent.'<sup>29</sup> It was also held that the cases in which the examination of a ballistic expert is essential will 'depend on the circumstances of each case'. The most common circumstance where the conditions are apt for the evidence of a ballistic expert is in a case 'where death is due to injuries or wounds caused by lethal weapons. It has been considered to be the duty of the prosecution to prove by expert evidence that it was likely or at least possible for the injuries to have been caused with the weapon with which and in the manner in which they are alleged to have been caused.'<sup>30</sup> This understanding of the courts today is the result of a very appropriate judgment by the Supreme Court in the case of *Jaidev and Hari Singh v. State of Punjab*,<sup>31</sup> where the case of *Mohinder Singh v. State*,<sup>32</sup> was quoted by the learned counsel for the appellants to say that the Court was of the opinion that where a firearm is used in the perpetration of a crime, the prosecution 'must' bring expert evidence to connect the injuries with the weapon and its alleged manner of use. The facts of Jaidev's case were that the appellants had surrendered a revolver and the prosecution was contending that the injuries were caused by a rifle, which had not been recovered. This made the Court to give a reasonable remark that it may be a case that the appellants may have deliberately surrendered the revolver to introduce complications in the case. Thus, there was no purpose for which the prosecution could be expected to examine an expert in ballistics. Thus, Mohinder Singh case was held not applicable in the case at hand. In *Ghurey Lal v. State of U.P.*,<sup>33</sup> where question arose with regard to the complicity of the accused in the murder of the deceased, the Supreme Court relied on the Ballistics report to hold that the two shots allegedly fired causing the death of one and injuries to another were not from a single firearm, as alleged by the prosecution. The Court opined, "the medical evidence coupled with the Ballistic Expert report revealed the existence of two fires from two weapons and as such was inconsistent with the prosecution story.... The Ballistic Expert is a disinterested, independent witness who has technical knowledge and experience. It follows that the trial judge was fully justified in placing reliance on his report." The apex court accordingly acquitted the accused.<sup>34</sup> In *Mahesh Chand v. U.T. Chandigarh*,<sup>35</sup> where a country made pistol alongwith three live cartridges and an empty cartridge were recovered from the accused and a bullet was recovered from the body of the victim and on examination, the Ballistic expert opined that 'they could not have been fired through any other fire-arm because every fire arm has its own individual characteristic marks.', the Supreme Court proceeded to hold that the case against the accused is proved beyond reasonable doubt.



It is important to note that ballistic experts' opinion has been consistently regarded as significant. In the case of *Ajay Singh v. State of Bihar*<sup>36</sup>, the pistol used in the perpetration of the crime was never sent to the ballistic expert for examination. This was seen as a lacuna on the part of the prosecution but the case did not go in favour of the appellant as there were witnesses who testified to the satisfaction of the Court that accused had done that act of crime.<sup>37</sup> "It cannot be laid down as a general proposition that in every case where a firearm is allegedly used by an accused person, the prosecution must lead the evidence of a Ballistic Expert to prove the charge, irrespective of the quality of the direct evidence available on record. It needs little emphasis that where direct evidence is of such an unimpeachable character, and the nature of injuries, disclosed by post-mortem notes is consistent with the direct evidence, the examination of Ballistic Expert may not be regarded as essential. However, where direct evidence is not available or that there is some doubt as to whether the injuries could or could not have been caused by a particular weapon, examination of an expert would be desirable to cure an apparent inconsistency or for the purpose of corroboration of oral evidence."<sup>38</sup> In *Charan Singh v. State of Punjab*,<sup>39</sup> the medical and ballistic expert opinion was conflicting about the range of fire. The court, after appreciating the evidence before it, was satisfied with the scientific conclusions of the ballistic expert. This was one of the landmark cases in India where the ballistic expert's opinion prevailed over that of the medical expert.<sup>40</sup> Furthermore, in the case of *Kalua v. State of Uttar Pradesh*<sup>41</sup>, the court being satisfied with the evidence of Ballistic Expert held that the conclusion of Ballistic expert is sufficient to prove the guilt of the accused.

## CONCLUSION

In the contemporary social context, the role and significance of ballistics can be overwhelming in administration of criminal justice. While of the one hand, the sophistication and complexities of modern weapons and arms and ammunition call for expert knowledge and skills in deciphering the nature, category and manner of use in specific cases, on the other, the effective interpretations of culpability and criminal liability require the blending of such knowledge in legal paradigm. In fact, the latter is important for bringing the guilty to the gallows and the innocent to freedom. However, what is important is the proper recognition and acceptance of expert evidence as a significant tool in the administration of justice. The old adage of "Witnesses are the eyes and ears of the Court," may sound good and in fact may be true to an extent; but in the present era of organized crimes, trans-boundary criminal activities and terrorism, reliance on testimonies of ordinary witnesses may be grossly insufficient and inadequate to excavate the extent and depth of illegalities involved. It may be possible only by means of distinct and specific knowledge of intricate aspects which only an expert may be qualified and experienced to testify. Thus, increased reliance on expert evidence and improved recognition of its value and credibility may help in efficient and effective dispensation of justice in future.

## REFERENCES

1. Section 45 reads as: "When the Court has to form an opinion upon a point of foreign law, or of science, or art or as to identity of handwriting or finger impression, the opinions upon that point of persons specially skilled in such foreign law, science or art or in questions as to identity of handwriting or finger impressions are relevant facts. Such persons are called experts."
2. *Khushboo Enterprises v. Forest Range Officer*, AIR 1994 SC 120.
3. *Babuli v. State*, 1974 Cri LJ 510.
4. M.C. Sarkar, SC Sarkar and PC Sarkar, *Sarkar's Law of Evidence* (Wadhwa and Company Law Publishers: Nagpur, 1999) 863
5. Field, *Commentary on Law of Evidence* (Revised by Gopal S. Chaturvedi, Delhi Law House, 2001) p.2428.
6. *State v. Madhukar*, 1967 Cri LJ 167.
7. *State of Himachal Pradesh v. Jai Lal*, AIR 1999 SC 3318.
8. *Haji Mohammed Ekramul Haq v. State of West Bengal*, AIR 1959 SC 488.
9. *Hari Singh v. Lacchmi Devi*, AIR 1921 Lah.126.
10. *Suresh Kumar v. Mewaram*, AIR 1991 P&H 254.
11. Ejaz, Ahmed, *Crimes-Expert Evidence (Medical and Non-medical)* (Vinod Publications: Delhi, 1993) 32.
12. This basically means that the credit of an expert can be impeached like that of any other witness under Sections 146, 153 and 155 of the Indian Evidence Act, 1872.
13. *Magan Bihari Lal v. State of Punjab*, 1977 Cri LJ 711.
14. *S. Gopal Reddy v. State of Andhra Pradesh*, 1996 Cri LJ 3237.
15. *Murailal v. State of MP*, AIR 1980 SC 531.
16. *ibid.*
17. *State of UP v. Krishna Gopal*, 1989 Cri LJ 288.
18. Rashika Gupta, *Ballistics: the probative value of evidence*, 1992 Cri LJ 121.
19. MC Sarkar, SC Sarkar and PC Sarkar, *Sarkar's Law of Evidence* (Wadhwa and Company Law Publishers: Nagpur, 1999) 877.
20. *Param Jeet Singh*, *Growing role of experts testimony in the Administration of justice*, 1990 Cri LJ 109.
21. *ibid.*
22. *ibid.*
23. It is possible to form a rough estimate of the time of fire from gunpowder residue, carbon monoxide remains, mercury deposition etc. But it is difficult to fix the correct time. See, B.R.Sharma, *Forensic Science in Criminal Investigation and Trials* (Universal Law Pub., 4<sup>th</sup> Edn, 2005) p. 469.
24. *Arava Nagreddi v. State*, (1968) 12 MJHR (Cr).
25. Richard, *Saferstein, Forensic science Handbook* (Prentice Hall Regents: New Jersey, 1982) p.5.
26. 1996 Cri LJ 1713.
27. *Supra* n.4, p 868.
28. 1996 Cri LJ 1713.
29. *State of Madhya Pradesh v. Surpa*, AIR 2001 SC 2408
30. *Gurcharan Singh v. State of Punjab*, AIR 1963 SC 340.
31. 1963 Cri LJ 495.
32. AIR 1953 SC 415.
33. MANU/SC/3223/2008
34. See, *Puran Singh v. State of Uttaranchal*, 2008 CriLJ 1058; *Budh Singh v. State of M.P.*, 2007(8)SCALE 252; *Suresh Chandra v. State of Uttar Pradesh* AIR 2005 SC 3120; *Ramakant Rai v. Madan Rai and Ors.*, AIR 2004 SC 77.
35. AIR 1995 SC 1951
36. AIR 2000 SC 3538.
37. *Vineet Kumar Chauhan v. State of U.P.*, AIR 2008 SC 780
38. *Gurcharan Singh v. State of Punjab*, MANU/SC/0136/1962.
39. 1974 Cri LJ 1253.
40. *Kartar Singh v. State of Punjab*, AIR 1977 SC 349; *Kartik Harijan v. State of Orissa*, 1995 Cri LJ 2019; *Raza Pasha v. State of Madhya Pradesh*, AIR 1983 SC 575.
41. AIR 1958 SC 180

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