

Expert Evidence: Product of Science and Law

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CONCEPT

Expert is one who has special skill which could be acquired through special knowledge. One can say that handwriting expert, Chemical Analyzer, Doctor, Chartered Accountant or Lawyer can be said as expert. Court is not expected to have knowledge of all fields. So they keep believe on opinion of these person in area of foreign law, science, art, finger print etc. This opinion formed very important value while determining judgement. When a person is summoned to court for giving testimony as a witness, he is expected to state only facts and not to give any opinion. It is the job of the court to form an opinion in the case. Moreover, if a person is asked to give his testimony then it is expected that the person must be factually related to the case not merely a third party.

But there is an exception to this rule. The experts are considered as witnesses although they are not actually related to the case. The court requires these experts to give an opinion regarding the case to help the court in having a wider perspective to give justice. The rationale behind the same is that it is not practical to expect the Judges to have adequate knowledge of medical issues [1]. The statutes regarding the experts' opinion are discussed in The Indian Evidence Act, 1872.

The court cannot form a correct judgement without the help of a person with special skills or experience in a particular subject. When the court needs an opinion in a subject which requires special assistance, the court calls an expert, a especially skilled person. The opinion given by a third person is considered as relevant facts if the person testifying is an expert.

For example, the court was confused that a letter has been written by person 'X' or not. The court calls a handwriting expert to find out the same. This person will be known as an expert and the opinion which he gives in the case is relevant.

Therefore in order to fill the gap the legislators have made such opinions and reports admissible in the Court as evidence, but this is possible only if it satisfies the enumerated circumstances. It is also clear that despite this novel idea being incorporated in legislations it suffers from various lacunae especially that in the form of discretionary powers given to a Judge presiding over the Court. As a result of this coupled with other shortcomings such as partisanship, bias, unclear expression and lack of knowledge, the value attached to this form of evidence is generally low.¹

MEANINGS

Scientific Evidence

According to the Oxford Dictionary³ the term 'scientific' means "involving science" or "technical".

The term 'evidence' is defined by Andrew Choo⁴ as, "Evidence is the information with which the matters requiring proof in a trial are proved."

The Criminal Procedure Code defines it in Section 322(1) as, evidence "means all facts and statements which have been disclosed by enquiry and is not restricted to depositions recorded by the Magistrate."

According to Section 3 of the Indian Evidence Act, 1872 the primary purpose of evidence is to ascertain truth of fact or point in issue.

From the above stated definitions one can construe and conclude that scientific evidence means nothing but evidence that is technical in nature. It thus can be said to imply that scientific evidence is one that the evidence involves a point in issue which is scientific in nature.

Scientific evidence is essentially a secondary form of evidence.²As per Powell "An expert witness is one who has devoted time and study to a special branch of learning and thus, is especially skilled on the points on which he is asked

¹See 2006 Cri LJ 101, para 217.

²That species of proof which is admitted in the absence of primary evidence (Section 63, Indian Evidence Act, 1872).

to state his opinion. His evidence on such points is admissible to enable the tribunal to arrive at a satisfactory conclusion."³

The U.S. Supreme Court has defined an expert:

"The term is generally used to designate a person who possesses knowledge and experience not possessed by mankind in general."⁴

The Madhya Pradesh High Court has described an expert in the following manner:

"An expert is one who has acquired special knowledge, skill or experience in any science, art, trade or profession; such knowledge may have been acquired by practice, observation or careful studies."⁵

Thus expert is one who has skill, experience or extensive knowledge in his calling or in any branch of learning; one possessing with reference to particular subject, knowledge not acquired by ordinary persons. As it has been stated above that expert evidence is nothing but an opinion but it is clear from the definitions that the phrase cannot be applied to all species of opinion evidence. The witness is not giving expert testimony who without any special intelligence simply testifies as to the impressions produced in his mind or sense by that which he has seen or impressions produced in his mind or sense by that which he has seen or heard, and which can only be described to others by giving impression produced upon the witness.

Therefore the witnesses must have made a special study of the subject or acquired a special experience therein. An expert essentially operates in a field beyond the range of common knowledge, thus it can be concluded that in a question of common knowledge an expert has no advantage over a non-expert. The difference between an expert and non-expert is that of special knowledge acquired either by experience or study of a **subject**. The witness must thus be 'Pertius' the subject-matter with respect to which he testifies. It is a secondary form of evidence.⁶

Product of Science and Law:-

Science and law fall under the same legal definition of "sciences" in that they use a rational approach to resolve complex multifactorial problems.⁷ Both science and law in the world of today touch each other at various points. Law regulates science and people dedicated in its research, likewise the latter helps law in dissemination of justice. However the achievement of equilibrium between the two is a highly complicated issue. In the current topic of discussion it is important to note that in case of such evidence it becomes critical to determine its value in the legal setup. It is thus important to reconcile between law and science for the purpose of attribution of legitimate weight to such evidence in a legal proceeding.

The reason of such conflict is successful practical experience that cannot be acquired solely by reasoning. Furthermore, experience in one field does not translate into others. Lawyers cannot discuss legal issues with people who do not have a law degree. Likewise a medical doctor cannot intelligently discuss his clinical reasoning to a person who lacks clinical experience.

Another major gap between the two is that science is governed by facts and is based on rational thought, whereas Law on the other relies upon picking and choosing of facts, and puts reliance on emotions to bolster arguments.

Thus science and law belong to different cultures.⁸ Thus it would not be incorrect to say that Court is a battleground where people with conflicting goals and aspirations and skill clash in an emotionally charged setting full of traps armed with science in one and law in another hand, However, the Courts have played an active role in this arena and have developed criteria that determine whether legal decisions are compatible with science. However such determination depends on various factors. Among them are : (a) the underlying scientific theory is solid, (b) the theory is related to the issue before the Court, (c) the expert witness fully understands the science, (d) the expert applies the scientific data to support its application, (e) there is sufficient data to support its application, (f) the expert witnesses can effectively communicate with the audience, (g) counsel understands and promotes the opinion correctly, (h) the Judge rules that the opinion is reliable, (i) the theory and expert appear credible, (j) the trier of fact comprehends the theory and expert opinion, (k) the trier of fact remembers the expert's opinion and (l) the trier of fact fits into the testimony.⁹

³Collector, Jabalpur v. A.Y. Jehangir, AIR 1971 MP 32, per Section 45 of Indian Evidence Act, 1882, referred in 2006 Cri LJ, Journal Section, at 210.

⁴Per Powell, Ejaz, Medical Evidence and Gist on Non-medical Evidence; Ch. II, 3rd Edn., Ashoka.

⁵See 2006 Cri LJ, Journal Section, at 210.

⁶US-Farris v. Interstate Circuit, CCA Tex, 116 F 2d 758 : 31A CJS 524.

⁷See Webster and Manual of Scientific Evidence, referred in 2006 Cri LJ, Journal Section, at 210.

⁸Peter H. Schuk, Multi-culturalism Redux : Science, Law and Politics, 11 Yale Law and Policy Review 1-46 (1994).

⁹Carl Mayer, Expert Witnessing, Exploring and Understanding Science, 1st edn. CRC (USA).

Thus it can be construed that in order to reconcile science with law in a Court so as to effectively use science and scientific knowledge in case of a trial and as evidence it is important to reconcile the two. Moreover the use of such evidence is only possible if it is adequately proved that there is nexus between the scientific fact and material facts in question and that the theory propounded and opinion advanced is on a sound footing.¹⁰

The opinion rule is one of the major exclusionary rules of the evidence. The law draws an important distinction between matters of fact and opinion and, in essence, provides that witnesses may not give evidence of their opinions, but must confine their testimony to matters of fact.¹¹ The rule thus states that the use of witnesses is to inform the tribunal respecting facts.

The rule is not free from exceptions, expert opinion and scientific witnessing fits in as an exception. It can be said that the rule has been made flexible and expanded to exclude such evidence from its eclipse so as to enable to overcome this lacuna posed by the common law principle. Thus the rule now accepted in all common law nations including India and the US is :

"An expert's opinion is admissible to furnish the Court with scientific information which is likely to be outside the experience and knowledge of a Judge or jury can form their own conclusions without help, then the opinion of an expert is necessary."¹²

Legislative Provisions in India:-

Expert is defined under section 45 of The Indian Evidence Act, 1872. The court needs an expert to form an opinion upon:

- Foreign law
- Science & Art
- Identity of Handwriting
- Identity of finger impression
- Electronic evidence

Only in the expertise in the above-said fields, a person's opinion is considered to be an expert opinion. If a field not mentioned above requires an opinion, it is not considered as an expert opinion. There have been cases such as: [2]

- The disposition or temper of animals
- Colour, weight or scale of similar facts
- Age of a person
- If a man or women were intimate
- If a person was intoxicated or not

If an expert is giving an opinion, it is considered as a relevant fact for the case. An expert has devoted his time in learning a special branch of expertise and thus is specially skilled in the subject. It can include:

- Superior knowledge, and
- Practical experience

The court of law, before admitting any of the opinion made by an expert, needs to ensure that the person is an expert under the law. If it is found that the person is not an expert, his opinion is discarded by the court. For checking that the witness is an expert, he must be examined and cross-examined [3]. A person becomes an expert by:

- Practice,
- Observation, or
- Experience

In the case of **Ramesh Chandra Agrawal vs Regency Hospital Ltd. &Ors.**, [4] the court stated that the first and foremost requirement for expert evidence to be admissible is that it is necessary to hear the expert evidence. **The test is that the matter is outside the knowledge and experience of the layman.** People who can be termed as an expert are explained in detail below.

Handwriting expert's opinion (Section 47)

¹⁰See 2006 Cri LJ, Journal Section, at 210,211.

¹¹See Roderick Munday, Core Text Series : Evidence, 2nd Edn., Lexis

Nexis Butterworths, referred in 2006 Cri LJ, Journal

Section, at 211.

¹²See 2006 Cri LJ, Journal Section, at 211.



When the court has an opinion that who has written or signed a document the court will consider the opinion of a person who is acquainted with the handwriting. That person will give an opinion that particular handwriting is written or not written by that particular person or not.

The handwriting of a person may be proved in the following ways:

A person who is an expert in this field

A person who has actually seen someone writing, or

A person who has received any document which is written by the person whose handwriting is in question or under the authority of such person and is addressed to that person

A person who regularly receives letters or papers which are written by that person

A person who is acquainted with the signatures or writing of that person

A certifying authority who has issued a digital signature certificate when the court has formed an opinion as to the digital signature of a person. This is mentioned under section 47-A of the act.

The evidence of the writer himself. This is mentioned in section 60 of the act. If another person admits that the documents were written by him. This is mentioned in section 21 of the act.

A person who has seen the person writing or signing. This is mentioned under section 60 of the act. When the court himself compares the document in question with any other document which is proved genuine in the court. This is mentioned in section 73. The court may ask the person to write something for the court to compare it with the document in question.

Opinion for Electronic evidence (Section 45A):

When a piece of information is transmitted or stored in a computer system and the court needs assistance or opinion for the same in any case; they refer an examiner of electronic evidence. This examiner of electronic evidence is known as the expert in such cases.

For this section, electronic evidence includes any information transmitted or stored in any computer resource or any other electronic or digital form for which the opinion of electronic evidence examiner is required as per section 79A of the Information Technology Act, 2000.

Opinion for foreign law (Section 38 r/w Section 45)

When there is a law of prevailing in any foreign country which needs to be considered for giving judgement in any case, the court needs an expert who is well versed with that law.

Otherwise, the court can take opinion from a law-book which contains the answer regarding any foreign law. These books must be printed or published under the authority of the government of that country. Other reports of the ruling of the courts can also be taken as relevant which are given in such books of foreign law.

Foreign law in India is always considered as a question of fact [5]. There have been cases where the court has interpreted personal laws as Indian laws and thus are the laws of the land [6]. Therefore, the court does not require a person to interpret the law as the courts can do that task on their own.

Opinion for fingerprint

Generally, finger impression expert's opinion is given more value because: [7] The fingerprints of any person remain the same from their birth till death, and No two individuals' are ever found to have the same finger impressions Footprint studies are gaining importance nowadays but the courts have been reluctant to accept that as a piece of evidence. A person, who is a fingerprint expert, is called to match two or more fingerprints, than the opinion of such an expert is relevant and admissible in the court.

Opinion for Science or Art

The words 'Science and Art' are to be broadly constructed. The term 'science' is not limited to higher sciences and the term 'art' is not limited to fine arts, but having its original senses of handicraft, trade, profession and skill in work.

To construe that if any expertise comes under the head of 'art' or 'science'; the following tests can be applied [8]:

Is the subject matter of the injury such that inexperienced people are not capable of forming a correct judgement without the assistance of experts?

Is the character of a science or art as such that it requires a course or a study to obtain a competent knowledge or skill.

Science and Art signify the activities which include the fields which require special knowledge or expertise form an opinion. Before designating that a person is an expert, it needs to be checked that the field or the matter on which we are seeking the opinion should not be something which can be easily understood by layman or court without any special knowledge or skill. The scientific question involved is assumed to be not within the court's knowledge. Thus cases, where the science involved, is highly specialized and perhaps even esoteric, the central role of an expert cannot be disputed [9]. Every science has its own technical terms, which are so much Greek or Hebrew to the average jurymen. What would the Ordinary man make of this answer to a question whether a certain dose of a prescription containing chloral would have been dangerous! [10] There can be various categories which can be treated under art and science. Some of them are discussed below for better understanding.

Opinion of Medical Expert

In many cases, the opinion of medical experts is required. Especially in criminal cases, the medical examination of accused and victim is necessary. When in a case, the court requires some opinion which involves medical technicalities, they ask medical officers.

Opinions of a medical officer can be used to prove: [11]

- The Physical condition of the person,
- Age of a person
- Cause of death of a person
- Nature and effect of the disease or injuries on body or mind
- Manner or instrument by which such injuries were caused
- Time at which the injury or wounds have been caused.
- Whether the injury or wounds are fatal in nature
- Cause, symptoms and peculiarities of the disease and whether it is likely to cause death Probable future consequences of an injury etc.

Say in a rape case, the medical report of the victim and accused are of great importance. If the medical officer says that he thinks that act was not consensual referring to the injuries on the body of the victim and the nail scratches on the body of the accused, this opinion carries a lot of importance.

Opinion of Ballistic Expert

Ballistic experts, also known as firearms expert are people who are experts in the study of projectiles and firearms. Their help is taken in cases say where guns are involved.

A ballistics expert may trace a bullet or cartridge to a particular weapon from which it was discharged. Forensic ballistics may also furnish opinion about the distance from which a shot was fired and the time when the weapon was last used. [12]

It must be noted that the opinion of the ballistics expert can be taken into consideration only when he himself has given the report. In the case where the expert gives opinion only by looking at the picture of the wound, the court denied relying upon such opinion. [13]

Evidence of Tracking Dog

Trained dogs are used for the detection of crime. The trainer of tracking dogs can give evidence about the behaviour of the dog. The evidence of the tracker dog is also relevant u/s 45. [14]

Moreover, Sec.293 Cr.P.C. provides a list of some Govt. Scientific Experts as following:-

- Any Chemical Examiner / Asstt. Chemical examiner to the Govt.
- The Chief Controller of explosives
- The Director of the Fingerprint Bureau
- The Director of Haffkein Institute, Bombay
- The Director, Dy. Director or Asstt. Director of the Central and State Forensic Science Laboratory.
- The Serologist to the Govt.
- Any other Govt. Scientific Experts specified by notification of the Central Govt.

Evidentiary Value of Expert Opinion:-

The data given by the expert are relevant and admissible. If any oral evidence contradicts the data/ report; it will not make the data evidence obsolete. But, as per section 46, in case any fact is in contradiction to the opinion of the expert, that fact becomes relevant. If the opinion of the expert is relevant, the contradictory fact becomes relevant even though it was not relevant as such. The value of expert opinion depends upon the facts on which he is based and the

competency of such expert in forming a reliable opinion.

However, the personal appearance of the expert in the court can be excused unless the court expressly asks him to appear in person. In such a case, where the expert is excused, he can send any responsible officer who is well versed with the facts of the case and the report and can address the court with the same.

If a judge relies upon the opinion of the expert only and not on the facts and the testimony of ordinary witnesses to give judgement then is the weakness of the case. This is because even if a person is an expert in his field, he cannot be termed as a direct witness and cannot give a statement on the facts of the case. He is just giving an opinion as per the evidences given to him and cannot draw a conclusion regard the guilt of the accused in all the cases.

The evidence given by the expert is just an opinion and is not a fact-based testimony and thus are given slight value. This is the reason that eye-witnesses or other factual witnesses are given a priority over the expert's opinion. This is because opinion evidence cannot supersede substantive evidence. No expert can claim that he could be absolutely sure that his opinion was correct, expert depends to a great extent upon the materials put before him and the nature of the question put to him. [15]

Rules of evidence—England and USA Experts.—

Position in England and USA (*vis-a-vis* Indian Law) is as under,—

England.—Like India in England also expert opinion is accepted as an exception to the 'Opinion Rule'. An expert opinion is admissible to furnish the Court with scientific information which is likely to be outside the experience and knowledge of a Judge or jury.¹³ In England experts are allowed to testify on any number of matters, the Courts are generally receptive to new varieties of expertise,¹⁴ however not all fresh developments are welcomed.

Like India it is for the Judge to determine whether the particular witness can demonstrate sufficient competence within his field to be treated as an expert and to be permitted to give evidence of his opinion. This implies that the witness will show the Court that he possessed relevant professional qualifications. But unlike India. Courts are not strict on this point : a classic example of this is the case of *Silverlock*¹⁵ where a solicitor who whiled away his leisure hours in the private study of handwriting was allowed to testify as an expert in handwriting. Also when deciding whether to allow a particular witness to testify as an expert, the Courts will not necessarily refuse to admit an expert whose approach to his subject is contentious in the same sense that it does not coincide with the received wisdom in the field.¹⁶ Thus in England it is with ease that expert evidence is admitted however according to authors¹⁷ this should not be of worry as the lacunae are done away with when it comes to cross-examination of such witness.

An expert may only give an opinion in matters that fall within his particular field of competence. If a question falls outside the scope of a witness's particular expertise, the opinion ought not to be received.¹⁸ Also the experts' field of expertise must fall outside the ordinary knowledge of Court. Therefore an expert's opinion will not be received on matters where it is felt that the Court is perfectly capable of drawing inferences for itself¹⁹

Opinion of expert is accepted as evidence on the ultimate issue in a case. The Courts have departed from the common law doctrine of 'ultimate issue rule', thus the law has progressively distanced itself from it. In Stockwell the Court of appeal declared that whilst there was a school of thought which considered that such a rule existed, 'if there is such a prohibition, it has long been more honoured in the breach than observance'. The rule today, then, is better regarded as a 'matter of form rather than substance'. This is however not accepted in India; therefore the doctrine of 'ultimate issue rule' is still accepted. Also in England experts may not only give his opinion but may also testify to matters of fact.²⁰

United States of America.—In the USA it is accepted that Federal Rules of Evidence have been held to have superseded the test for admissibility of scientific evidence which required that the technique in question must have been generally accepted as reliable in relevant scientific community. The trial Judge must ensure that any and all scientific

¹³Per Lawson LJ, Turner (1975) QB 834 at 841.

¹⁴Per Lord Taylor CJ, Stockwell, (1993) 97 Cr App Rep 109,

¹⁵(1894) 2 QB 766, also see Oakley, (1979) Crim LR 657, referred in 2006 Cri LJ, Journal Section, at 215.

¹⁶Robb, (1991) 93 Cr App Repl 61.

¹⁷See Roderick Munday, Evidence, 2nd Edn., Lexis Nexis Butterworths.

¹⁸*Nightingale v. Buffin*, (1925) 18 BWCC 358.

¹⁹See Land, (1999) QB 65 L.

²⁰See 2006 Cri LJ, Journal Section, at 215.



evidence admitted is not only relevant, but reliable.²¹ Thus the focus in determining whether to admit scientific evidence should be a balancing of probativeness, materiality, and reliability against evidence's tendency to unfairly prejudice the other party.²²

In addition, the New Jersey Superior court has held in the case of *Procidav. Me. Laughlin*,²³ that, scientific evidence is admissible if the proposed technique has sufficient scientific basis to produce uniform and reasonably reliable results and will contribute materially to the ascertainment of truth. Thus the method must generally be accepted as reliable,²⁴ the determination of general acceptance is primarily a question of fact for trial Court to determine.²⁵ Therefore the party offering the novel form of evidence has the burden of demonstrating that such evidence has been accepted as reliable by the scientific community.²⁶

With respect to expert opinion and its admissibility the Court in the case of *Protomac Elec. Power Co. v. Smith*,²⁷ has held that "In order to qualify as an expert witness, a minimum level of competence in the subject involved must be shown." Thus qualifications of the witness must be affirmatively shown by the proponent of these evidence.²⁸ The Court may disqualify such a witness where it is shown that retention of an expert witness creates a conflict of interest.²⁹ In US, unlike India, *bias* or interest of witness does not affect his qualification, but only the weight to be given to his testimony.³⁰ Position in US also differs on another ground that being, a skilled witness is permitted to state a fact not generally known, although it may involve an element of inference.³¹ But the statement *must not contain too much of objectionable reasoning or conjecture*.³² Therefore, it can be said that absolute certainty is not required of an expert before he can testify, mere guess or conjecture cannot constitute a proper basis for expert opinion evidence.

It thus must aid the jury in understanding their problems.¹ An opinion creates no fact,² it merely raises the issue of fact.³ The weight, value, or effect to be given to opinion evidence is, within the bounds of reason,⁴ entirely a question for the determination of the jury, the Court when trying a question of fact, or other of the facts.⁵ Thus the trier of facts should give opinion evidence such weight as it believes it is entitled to receive.⁶

Opinion evidence is entitled to weight only when consistent with probability and reason.⁷ Thus of all forms of evidence, opinion evidence is said to be the weakest and least reliable.⁸ However, it loses much of its weakness when supported by factual testimony.⁹

CONCLUSION

Thus from the above discussion one can conclude that there are indeed slight differences between Indian conception *vis-a-vis* English and American, however the basic postulates are the same. It is thus correct to say that opinions of expert and scientific evidence are generally not conclusive or binding, except, under some authorities, where the subject is one for experts or skilled witnesses alone, and concerns matters of which a layman can have no knowledge, and where no conflict exists in such indirect evidence with direct evidence.

²¹US *Daubert v. Marell Dow Pharmaseu, Inc. Cal.*, 509 US 579.

²²*Ariz Trotman v. Valley Nat. Bank of Arizona*, App 826 P 2d 810.

²³195 NJ Super 396.

²⁴593NYS2d42.

²⁵NY Matter of M.Z.; 590 NYS2d 390.

²⁶*Mich-Kluckv. Borland*, 162 Mich App 695.

²⁷558 A 2d 768.

²⁸804 F Supp 972.

²⁹*Wis-Secura Ins. Co. v. Wiscosin Public Service, App.*, 457 NW 2d 549.

³⁰980 F2d 1014.

³¹78ALR737.

³²16 Ohio Cir. Ct. 204.