THE LIMITS TO EXPERTISE

David W. Eryou

ERYOU ***Barristers***

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Judges and advocates are often presented with evidence from an a person asserted to be an "expert". The inference is that the testimony gains additional weight by coming from such a source. In all walks of life experts are consulted for various reasons and the recipients of such advice have their own ways of dealing with such advice.

The law has developed its own mechanisms of handling expert evidence. Lawyers are involved in expert evidence in the assessment of whether to take on a case or how to defend a case. Because we function in an adversary system counsel tend to think of expert evidence in terms of the ultimate test; ie, will such evidence be admissible and will the expert evidence be the evidence preferred by the finder of fact. The most exciting expert is of no use if the evidence will not be admissible or more plausible than adverse expert evidence. This, or course, is a generalization because advocacy involves the creation of risks for the opponent. Most cases settle before trial and sometimes "paper experts" can win the day.

The reality that most cases settle creates the hazard that counsel and experts will weight the odds and become somewhat more enthusiastic with the reports written by the experts. That, however, is a reality of the modern litigation system.

1.0 The Power of expert evidence

Expert evidence is not simply a type of evidence that can be overcome by other fact evidence. Expert evidence *creates evidence.*

> "The major function of experts, however, is to *create* new evidence in the form of expert opinions; in the process they may also generate new observations by examining existing evidence or by conducting original studies and experiments. This is the unique feature of expert testimony - there is no other context in which a witness can create new evidence about past events - and it gives the expert a set of options that no other witness has. The expert can decide where to look and by what means, what research to conduct, which people to consult, which studies to consider, which methodology to use, and so forth. In addition, the expert may also need to spend a great deal of time instructing the lawyer on the intricacies of her field. As a result, the preparation of expert testimony can be an open ended undertaking."[1]

As a result of this close relationship some lawyers carefully impose their world view on the expert. Some deftly manipulate the expert to "buy into their case". This can arise because the lawyer often chooses the issues on which to have the expert testify. In extreme cases, the expert becomes a mouthpiece for the lawyer.

2.0 Experts and Science

But suppose you find an expert who convinces you he can offer reliable science based evidence which happens to support your legal theory. It is a long road between the thrill of hearing that good news and the pronouncement of a court that the evidence of your expert has been accepted by the court.

How do you ensure that the "power" of your side's science is carried into the courtroom with minimal distortion? The medium by which science is carried into the courtroom is through expert evidence. In Canada the doors to the Courtroom are operated by the adversary system in which the parties - not the judge - select the expert witnesses. Other jurisdictions handle expert evidence differently. Canada has chosen to remain with the traditional common law approach in which the parties and their lawyers control the issues and select the experts. [2]

[1]Expert Evidence, by Samuel Gross, (1991) Wisconsin Law Review, 1113 at 1140.

[2]England has adopted the recommendations of the Woolf Commission. The Federal Courts in the United States have decided to "screen" out unreliable expert evidence by use of judge made gate keeping criteria. Canadian criminal law leans towards the American position. The Canadian civil litigation system has not yet adopted the American "screening procedures".

There are two threshold questions for any lawyer intending to offer expert evidence. How these questions are answered are of vital interest to the expert involved, the adverse lawyer, the adverse expert and - ultimately - the judge.

1. Under what circumstances will the judge allow an expert to give evidence? Surely if the expert prepares a written report as requested by the lawyer, the report is served on the adversary, the expert appears in court and takes the oath - is not the lawyer entitled to have the expert give evidence?

I would not make any such assumption. The trend in modern litigation where so much depends on expert evidence is to challenge at every opportunity that evidence. Ontario has not yet adopted a judge controlled gate keeping regime in which the expert evidence must be screened by the judge. But your adversary will no doubt be in that mode of thinking. If the lawyer who retained the expert does not screen the expert long before the service of the expert's written report it may be the beginning of the end for the expert. What is this screening? Why is it required?

2. What factors suggest whether the evidence of one expert will be preferred over contrary expert evidence?

This depends on the basis for the differences of expert opinion. In litigation adverse experts are not encouraged to confer with each other before giving evidence. Litigation strategy militates against creating any common factual ground between experts. Lawyers treasure the right to preserve grounds on which to attack expert evidence. In cross examination, pinning down an expert to a contingent view of facts to be found by the finder of fact (...suppose the judge finds X to be the case, how does that affect your view?...) is a preferred tactic of lawyers. A time tested method to topple expert evidence is persuading the finder of fact to find facts which undermine the basis of the expert opinion[3]. Even if the experts are speaking from the same page, ie, agree on the same underlying facts, there may yet be a difference of opinion. Scientists are not intellectual computing machines. Human reasoning is fallible and scientists are human. Precision does not infect every inference made in scientific reasoning. Often there are value decisions or factors which are a foundation for the reasoning of the expert.

[3]The hypothetical question is a device which some judges insist be used. It has the advantage (to the expert) of listing the underlying factual basis for the opinion. The question can be written out and presented to the Court to facilitate the evidence.

Generally speaking, the degree of certainty, ie, assurance expressed by the expert is irrelevant in a gate keeping regime. What carries the day in such a regime should be much the same as what carries the day in science; sound data, recognition of non scientific factors, impeccable logical reasoning, articulation of sources of error and estimation of the cumulative probable error.[4]

In the end - clarity and candour - absolute candour are expected by judges. Anything less is regarded as advocacy which can be the kiss of death to the expert[5]. Judges may not be experts in science but they are they experts in detection of advocacy. Often the lethal question is that final, quiet question from the judge: "Mr. X: is there anything else the Court should know in order to assess your evidence?"[6] Answering that question separates the expert from the advocate; it separates the superior expert from the inferior expert and separates the true scientist from the junk scientist.

3.0 Weighing of Evidence

I want to examine some implications of the legal mode of handling evidences, that is, the admissible\inadmissible switching which is considered - in my case - as a disability by some of my more scientifically gifted friends. Disciplines other than law do not think this way, that is, they do not adopt the mode of thinking which allows lawyers to shuffle packets of evidence like playing cards in a deck. Scientists and those in the applied sciences weigh evidence in a different manner. There is no reason for lawyers to change their way of thinking because they continually work in the legal environment. But there may be an attraction for experts to change their manner of weighing evidence when they become familiar with their role as expert witness.

This is what I call "litigation based science" and I will come back to that shortly.

[4] "It is the task of the individual observer to minimize, but not to underrate, the noise content of his data, for it will be the goal of the scientific community to select the correct signals from the background rubbish, and to give them out, stripped of all apparent uncertainty, as reliable knowledge and the scientific truth." John Ziman, *Reliable Knowledge*, 1996, p. 70.

[5] Probably the ultimate perception of advocacy was a case in which the plaintiff lawyer discussed with his expert the evidence to be given and had the expert fax him the expert's blank letter head. The lawyer typed up the report, faxed it back to the expert, who signed the report. This came out in cross examination of the expert. The judge gave little weight to the expert comment and commented adversely on this practice.

[6] In the Moran Inquiry by Justice Kaufmann there is a complete section which deals with the obligation of the expert, and the party calling the expert, to have the expert recalled if the thrust of the scientific evidence is skewed by the examination of the witness. There is no reason why this should not apply in civil proceedings.

But as in life, as in law. When does the listener accept the assertion from the expert? When and how does the listener "go on red alert" and ratchet up his or her intellectual screening mechanism? And when does one reject the assertion and challenge those who proffer such evidence to prove it meets the criteria of reliability.

And these questions trigger a more basic question: are there - so to speak - foundation criteria for expert evidence in the law?

4.0 A Proposed Criteria for Expert Evidence

A lawyer should have some internal measuring device by which he or she assess expert opinion evidence. The fact that the evidence happens to further your case, or destroy the case of your adversary, can be a dangerous first measure. One has to look beyond the exhilaration of finding an expert, astute enough to agree with your assessment of the case. One has to look to how others - not as close as you to the case - will regard the expert.

A useful format for the basement criteria of expert evidence is found in the American Federal Court Rule 702 which is in the process of being amended. I consider this rule to be a restatement of general principles which can be most useful to counsel. The rule reads as follows:

"If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise, provided that;

(1) the testimony is sufficiently based upon reliable facts or data,

(2) the testimony is the product of reliable principles and methods, and

(3) the witness has applied the principles and methods reliably to the facts of the case.

I use that measure and I apply it in a gate keeping mode which is well established in American law but not yet in Canadian law. It is a useful discipline for any lawyer to consider that any expert evidence he or she intends to proffer should pass such a test. A gate keeper is a concept which is no more than this: some person, initially your adversary or his expert, will assert that

your expert evidence does not meet the reliability criteria. Ultimately that person will be a judge on an application or at trial who may hear evidence from adverse experts and who probably hear submissions from your adversary on these very issues.

The gate keeping template is the most important learning tool for experts that the common law has created. It must be understood by every expert. It should be understood by every lawyer dealing with expert evidence. It is probably understood by most judges. Currently, in Ontario, procedural impediments prevent the general use of gate keeping by judges.[7]

But what does the word "reliable" mean? Do we trust ourselves to the experts? Is this not a matter of law? Reliability should not limited to the methods of science but of empirical testing in a much wider sense. But in what sense?

All these questions are being addressed and answered by American courts as they work out a new regime of law on expert evidence. We should be aware of the developments south of the border.

What then are the limits to expertise?

5.0 The Limits to Expertise

One should recognize the science that suggests the human mind has bounded rationality, that is, there are a limited number of issues a mind can keep in active consideration. Some say the magic number is seven plus or minus two. This means the average person cannot keep more that five to nine items in active consideration relatively concurrently. Most lawyers are average persons although, among our colleagues, as with everything, I realize this is a hotly debated issue.

I consider there a number of issues which define the limits of expertise for the special purposes of the legal system.

One: Information- from an qualified person expert which, on reflection does not add to the regular, ordinary human experience which judges and juries use daily. In short, it is ordinary logic dressed up in evening clothes masquerading as expertise. This must be discarded.

[7] See the presentation by the author to The Advocates Society Conference - *Why Isn't Daubert Being Used in Ontario Civil Cases?* January 26, 2000 (47 pages).

Two: the words emanate from a person with the qualifications of an expert but there is no underlying science or reliable experience. The author may be another Galileo or he may be a quack. At this stage we cannot know. I do not speak of astrology or other exotica which reaches back into the distant past. I am speaking of what has been usefully described as is trans-science. A current example: is the use of cell phones harmful? We are into the zone of a "risk of a risk". Discarding this may be premature.

Three: what I am hearing is from a qualified person and the words appear to be science but I have no idea of whether it is reliable or how much error is involved. Worse yet, the speaker suffers from the same disability. We are now into a reliability question. But, on the face of it, the evidence is worth examining.

Four: the evidence is from a qualified person but there is an aura of advocacy that does not sit well with the objectivity of an expert. Is this advocacy or a spirited defence of sound reasoning? Is this expert simply conjuring up new evidence in the guise of expert opinion? Is that what he is doing? Is that what I want?. What would he say if I the judge asked him " Professor X, is there anything else we should know in order to consider your evidence in totality?". Probing of this information is required.

Five: The evidence is from a qualified person and the words have the trappings of science. But I would like to know whether it is "all science". Are there not some underpinnings which are not matters of science but of social policy? How do I peel away the science and get to the core assumptions? What would he say if the judge asked "It seems to me you and Professor X are speaking from the same factual basis but you come to different conclusions. Are there some non scientific underpinnings involved in what you and Professor X have testified? Would he say" Thank you, my lord. You should know that Professor X and I disagree on the following areas, not because of science or differing facts which the Court may find. We disagree because of ...." A sub-species of this is what I call "litigation based science" to which I will return.

Seven: What I am hearing has a ring of reliability but it is so constrained and distorted by the adversary process that "something must be done" to find out if there is any substance. This is the dilemma of the trial judge. If counsel has thought out the case this should not arise. Judicial correction can range from removing the constraints mentioned in the Moran Inquiry to exercising judicial ingenuity. Devices such as briefings for the judge on expert issues and hearing experts in panels are some methods used by American judges.

6.0 Litigation Based Science

Recently a physician expert witness has proposed that experts can use the lower level of certainty required for litigation:

> "The clinician is accustomed to a level of certainty that is considerably higher than the "balance of probabilities" that is acceptable as proof in civil litigation; it is therefore often helpful for counsel to remind the medical witness that, in personal injury and civil cases, the law requires only a balance of probabilities (51%) likelihood. This level is substantially lower than that which the clinician is generally comfortable: an explicit awareness of this requirement for medical legal purposes can assist many clinicians in coming to a diagnosis that will be useful to the adjudicative process and the court." [8]

This suggests we can have "litigation based medicine" There is a background behind that thinking which ranges from commentators to the Supreme Court of Canada. Litigation based medicine is based on a fundamental misconception which is that science and applied science, ie, engineering and medicine, require certainty in their professional world.

If an expert decides to go the route suggested by Dr. Berry he will be met with this on cross examination:

> "A "reasonable degree of certainty, more likely than not" has been interpreted as meaning that there is more than a fifty-fifty chance that the opinion is correct. An opinion offered with such a degree of certainty has little basis in science. What is the statistical or other basis for this degree of certainty? It is probable that there is none, that the opinion has no basis other than in the mind of the individual offering it. There is no reason why an opinion offered with better than 50 percent certainty should not have as sound a basis as one offered with one hundred per cent certainty. There is a tendency to abandon the field when the magical words "with a reasonable degree of medical, etc, certainty" are intoned, as though the opinion has by these cabalistic words become impregnable. There must still be some underlying reason for the opinion. If the opinion is based solely on experience, how many times has the expert been correct when he exercised his or her professional judgement in a similar case? Was the expert wrong 49 percent of

[8]Logical Analysis: A Method of Examination of Expert Medical Opinion Through the Basic Logic of Medical Reasoning, Henry Berry, M.D., 34 Tort & Insurance Law Journal 949 (1999).

> the time? Returning to statistics, you cannot have a 51 percent probability of an occurrence with a zero probability of error. With any significant degree of error you may find that there is a significant probability that the opinion is incorrect. Don't be mesmerized by the magical words. Subject the opinion to the same analysis as an opinion offered with a higher degree of certainty".[9]

Or he may be met with another line of cross examination which simply clarifies that the expert will state in court what he would not state before his scientific peers in the world of science.

> "Consider the following hypothetical scenario: the plaintiff calls a preeminent scientist who has actually performed research on the potential hazards of the substance in question. The scientists finds *some* evidence to link the product with the injury, but really believes that more (and better) research is necessary to fairly resolve the question.
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> How can this expert look the jurors in the eye and tell them the product caused the injury? The short answer is that he could not. How would Cranor resolve this dilemma? He would have "judges and lawyers clearly explain to experts the difference between the degree of certainty that would be required in the scientific journals of their discipline and the degree of certainty that would be required for legal cases in which they may be testifying."
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> Cranor's approach is not practical. We cannot fairly or rationally ask scientists to testify in court but not rely on the teachings of their disciplines. Stated another way, we cannot ask scientists to *stop thinking like scientists* for purposes of testifying in court. Moreover, how could we explain precisely how much less "certainty" is "required for legal cases in which they may be testifying"? (Cranor does not actually propose any formulation for calibrating the "legal scale" of required certainty.)[10]

7.0 Levels of Confidence and expert opinions

It has been a contention of plaintiff lawyers in a number of American cases that their experts should not be compelled to testify according to scientific standards of proof but should only be

[9]Daubert and Scientific Methodology - Science Made Easy, by Arvid V. Zuber, Ph.D. found in November, 1999 For The Defence Supplement - Challenging Unreliable Technical Experts after Kumho at page 31.

[10]*Regulating Toxic Substances: A Philosophy of Science and Law, Cranor* (1993) 1 Shepard's Expert and Scientific Evidence Quarterly 281 at 286 which is a book review by Marc Klein of Cranor's book Regulating Toxic Substances.

required to testify according to legal standards of proof. This appears to have developed in the science rich cutting edge tort cases in which a major issue was whether science could a definitive answer. Some commentators have asserted the differing objectives of the civil litigation process require modification of scientific standards of proof.

The plaintiff lawyer position is well set out in *Expertise and the Daubert Decision,* an article by Ronald Allen.[11]

This fundamental issue began to be worked out in American case law. The 1993 case of Daubert v. Merrill Dow has revolutionized how American Federal Courts assess expert evidence.

Daubert deal with birth injuries alleged caused by ingestion of Bendectin. The issue was general causation; was the drug capable of causing birth defects? Experts for the plaintiffs proposed to analyse data in a manner which resulted in demonstrating that the drug Bendectin caused birth defects. The manufacturer of the drug retained experts who said that the proposed analyses was not how scientists approached the issue of causation. The plaintiff lawyers alleged that the degree of certainty required by science exceeded the degree of certainty required by the law.

If conventional science could answer the question on way or the other, the plaintiff would either have a case or not have a case. However, in the litigation process, parties do no rely on conventional science. They retain their own experts who bring their view of science to the process. When presented with a novel concept which can be tested by the methods of science, the approach of science is to try and prove the assertion wrong. The plaintiff experts did not contest this approach. The question became: could the assertion that Bendectin did not cause birth defects be proven wrong?

One might suppose that the defence position would be that all the studies that were done could not falsify the theory that Bendectin did not cause birth defects. The theory could not be rejected. Not could it be considered to have merit. Science could not say one way or the other. This was the view of "conventional science". Based on this, the plaintiffs could not prove their case and they should lose.

[11] The Journal of Criminal Law and Criminology, Volume 84, page 1157 (1994).

Daubert's position was that science had good reason to require such high confidence levels. But these were to advance the goals of science. Personal injury litigation should not be bound by those confidence levels because the law had different goals to serve.

Accordingly, Daubert's experts proposed a novel way to take another look at the data. If one looked at the data, not with the 95% confidence levels required by science but rather with the burden of proof required in civil litigation, one could conclude the theory that Bendectin did not cause birth defects was proven wrong. Better than that, one could show there was affirmative evidence that birth defects were caused by the drug.
If this was accepted, then Bendectin was capable of causing birth defects and the plaintiff had established general causation. The jury would hear evidence to prove that the baby Daubert's birth injuries were in fact caused by the mother's ingestion of the drug.

Would the methods of science alone decide general causation or would the methods of law by grafted to those of science to decide the issue?

Merrell Dow realized that any decision on the weight of the evidence would be made by a jury. No American corporation wants to defend a case involving birth defects before a jury. The reality is that sympathy outruns scientific reality and drives the outcome. The strategy was to assert that the evidence proffered by the plaintiff experts was not "science". If the evidence was not science it could not be admitted. A judge, rather than a jury, would make the key decision. Merrill Dow moved for summary judgement and succeeded. Thus began the appeals and the ultimate remand which ended the case.[1]

In 1993 the Supreme Court held that science alone would decide the question. The case was sent back on remand. The remand was decided in 1995 when a Federal Court Judge did a full review of the evidence of Daubert's experts. He found the evidence inadmissible because the experts did not follow the methodology used by science to decide such issues.

The lesson of Daubert is that science dictates what is good science to be used by the Courts.

The most recent decision of the Supreme Court of the United States to deal with this matter is the

[1]In all the Bendectin litigation only one jury verdict for the plaintiff was upheld. This was a Texas jury verdict which on appeal was supported. The same evidence which the was ruled inadmissible by Daubert on remand (1995),ie, the same plaintiff experts, supported the Texas jury verdict. There is good reason for American corporations to avoid American juries.

March 1999 decision in Kumho Tire v. Carmichael. In that case the Court said, in reference to Daubert:

> "To say this is not to deny the importance of Daubert's gatekeeping requirement. The objective of that requirement is to ensure the reliability and relevance of expert testimony. It is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigour that characterizes the practice of an expert in the relevant field. Nor do we deny that, as stated in Daubert, the particular questions that it mentioned will often be appropriate for use in determining the reliability of challenged expert testimony. Rather, we conclude that the trial judge must have considerable leeway in deciding the particular case how to go about determining whether particular testimony is reliable. That is to say, a trial court should consider the specific factors identified in Daubert where they are reasonable measures of the reliability of expert testimony."

The "same intellectual rigour" had been proposed by other courts prior to adoption by the Supreme Court of the United States in 1999:

> "When the Supreme Court in Daubert told judges to distinguish between real and courtroom science, ti was not with the object of discovering the essence of "science", if there such an essence. The object, we think, while conceding the uncertainty concerning the reach of the majority opinion discussed in the Chief Justice's separate opinion, was to make sure that when the scientists testify in court they are *adhering to the same standards of intellectual rigour* that are demanded in their professional work. If they do, their evidence (provided it is relevant to some issue in the case) is admissible even if the particular methods they have used in arriving at their opinion are not canonical in their branch of the scientific community. If they do not, their opinion is inadmissible, no matter how imposing their credentials."[2]

The conclusion is that "litigation based medicine" does not accord with the same intellectual rigour as practised in the profession. Accordingly, it should not be admitted for that reason.

On this basis, therefore, there can be no modification of scientific practice as proposed by Dr. Berry, ie, an expert cannot testify at a level below which he makes clinical diagnoses simply because he is now in a courtroom.

8.0 What if the expert cannot testify it is more probable than not?

[2] Rosen v. Ciby-Geigy Corp, 78 F. 3d 316, 318-9) (1996). See also the Article in 28 The University of Memphis Law Review 1053 (1998) "Same Intellectual Rigour Test".

The expert should not be concerned about the level of certainty required by a court. That is not a matter for expert evidence. The expert will pronounce his opinion to the lawyer who retained him long before the matters goes to court. If, as Dr. Berry suggests, the "... clinician is accustomed to a level of certainty that is considerably higher than the "balance of probabilities"..." there should be no problem. The expert will give his opinion. The expert will set out his degree of confidence or be prepared to justify the degree of confidence. If the opinion is done with the same intellectual rigour as his other professional work the legal burden of proof is more than satisfied.

One suspects the problem arises when the expert cannot give an opinion or there is "not sufficient material on which to give an opinion." It may be that the question presented is not one that the expert commonly sees. The question is of more interest to law than to science. The expert may have a "hunch" or " a feeling" but nothing he would want to give to a peer reviewed meeting of an international meeting of his professional society. Yet the proposition on which the lawyer wants an opinion is not without merit. It is interesting. It is true there is little science directly on point. What to do? It is at this juncture that the lawyer - or the expert - may then turn to the legal burden of proof to resolve the uncertainty of science. The expert decides to give the opinion in light of the lower standard of proof required by law. Worse yet, he may even give a draft report which the lawyer may review before the final report is prepared.

How does the adversary lawyer who receives this report handle the matter? He will no doubt to his expert and review the report. Once his expert confirms the exact nature of the evidence before the other expert (not an easy matter) he may opine "Nobody in the profession would give an opinion based on that evidence." Translation: "Given the same evidence it is expected there may be variations in what an expert will say. In this case the evidentiary record is so weak that the standard of the profession would be not to give than opinion. One would expect no opinion as to causation would be given."[3]

While there is some support that an expert does not have to state his opinion is more probable than not[4], the thrust of American decisions has been to exclude an expert called on causation who

[3]An expert may concede that there is not sufficient evidence to given an opinion on causation but may be convinced by the retaining lawyer to focus on a breach of the standard of care which resulted in the failure to retain definitive evidence. With such evidence, of course, causation would be able to be determined. This again is not the role of the expert and is another example of the expert being conscripted as an advocate.

[4]Evidentiary Foundations (4d) by E.J. Imwinkelried at page 294.

cannot say his confidence level is "more probable than not." If the only evidence to be called by a proponent on the issue of causation is one expert, then that expert must be able to say his opinion is at least more probable than not. In legal theory the burden of proof is satisfied when the judge as a finder of fact considers all the evidence on the point at hand, ie, expert evidence and any other evidence, weighs the evidence, and then reaches his conclusion. This simply goes back to the role of the burden of proof as weighing the relative plausibility of two opposing versions. If the plaintiff expert says "A is possible" and the defence expert says "A is not possible, and, here is B (not A) which is probable" the plaintiff - absent other evidence - will fail on this point.

There may be strategic reasons to offer the evidence of an expert who cannot say causation is more probable than not. Consider the following issues;

1. The apparently more plausible alternative version may "self destruct"during trial.

2. Adverse experts may be change their mind as a result of cross examination.

3. The judge may not accept the alternative version.

4. Evidence, other than the expert evidence, may be pivotal.

5. Causation is a decision made by evaluation of all the evidence. Expert evidence is only dispositive if there is no other evidence.

10.0 Experts and the adversary system

What happens in a regime in which there is no judge controlled gate keeping of expert evidence? Below is the American position as of 1991.

> "... Imagine how adversarial fact finding would function under the following regime: the lawyers on each side of a dispute, acting in secret, choose people from an almost indefinitely large array and designate them as witnesses; these witnesses are paid handsomely for their testimony; lawyers can preemptively hire witnesses in order to keep them from testifying when their honest testimony may help the other side; many witnesses make a business of testifying, and advertising

> their services; the attorney's control the information and the issues on which witnesses testify; witnesses are allowed to testify to matters beyond their personal knowledge and to evaluate as well as to present information; the existing rules of pre-trial discovery are curtailed so that the identity and the evidence of many potential witnesses can be concealed from the opposing party; the usual rules of evidence are inapplicable at trial; and, finally, the subject matter of the testimony of these witnesses is intrinsically confusing, if not incomprehensible, to judges and juries.
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> Odd as it may seem, this is an accurate thumbnail sketch of the present mode of using expert information in American Courts." [5]

Since 1991 there have been a trilogy of American Supreme Court cases which are slowly changing that grim scene.

Lest this be thought of as overstating the position in Canada, consider the following comments of an Australian scholar written in a Canadian law journal in 1972:

> "Imagine a case of a scientist asked to decide which of two rival theories, each propounded by an eminent scientists, is to be considered correct. If he is presented by the two rivals with all the relevant data, and then given the arguments of each, presented as strongly as possible, he might be able to perform the task. Even if he thought that neither rival was completely in the right, he would construct his own theory by borrowing elements from each of those already before him. We might liken this case to that of an appellate court deciding between two rival advocates.
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> But no scientist would dream of making a decision such as that I have just posited, if he knew (a) that neither of the rival theorists was bound to put forward all data in his possession - indeed, that each would regard it as proper to suppress any "inconvenient" or inconsistent observations of whose existence he knew and (b) that he, the adjudicator, would be precluded from suggesting or requiring the elicitation of any additional data that might prove critical. Indeed, he would ordinarily expect to perfect his theory or make his decisions by pursuing every

[5] *Expert Evidence* by Samuel Gross, (1991) Wisconsin Law Review 1113 at 1125.

line of enquiry which *he* thought might throw light on the matter.

> It is precisely because the two factors just mentioned operate in the ordinary adversary trial that the matter must be regarded as basically unscientific in approach, and unsound. The judge - the court, that is to say - is supposed to be deciding the case by applying the law to the "true facts". In saying this, I realise as fully as does anyone else that the "true facts" can never be ascertained (since the past cannot be completely recalled), and that the reality of a common law trial is that it is a battle between the parties rather than a search for truth. But we do not advertise our courts as substitutes for boxing rings or jousting fields. We hold them out as being temples of justice engaged in the search for truth, and I do not believe society would tolerate their continued existence on any other basis. If this is accepted, then we may recognize that they do not at present in fact search for the truth, but we ought at least to try to improve their actual performance so that it more nearly resembles the ideal."[6]

How much have we progressed in the last thirty years?

11.0 Is there a future for gate keeping in Canadian law?

I have written for the Advocates' Society on why gate keeping concepts are not being used to screen expert evidence in Ontario civil cases.[7]

Some have thought than an opportunity was presented to the Supreme Court of Canada in the R. v. Terceira case to address the issue of novel scientific evidence in Canada and consider the gate keeping functions of courts. However, the Supreme Court dismissed the appeal with no discussion of these issues. They adopted substantially the reasons of Mr. Justice Finlayson in the Ontario Court of Appeal.

It may be that Terceira was not the case to test the concepts of gatekeeping. During the voir dire at the criminal trial the defence did not put forward any evidence to challenge the novelty or

[6] *The Implications of Science for the Law*, Peter Brett (1972) 18 McGill Law Journal 170 at 186-7.

[7] *Why Isn't Daubert Being Used In Ontario Civil* Cases, January 26, 2000 presentation to the Advocates Society. This presentation outlines the Canadian cases which adopt a gate keeping approach to scientific evidence.

accuracy of the methodology involving the DNA evidence. This evidence was led after the trial judge had ruled the Crown DNA evidence admissible. Given that defence strategy the attack on the DNA had to go to weight.

In speaking of the role of the trial judge assessing novel scientific evidence Justice Finlayson states at pages 202 and 203 of 38 O.R. (3d);

> "The trial judge's function is limited to an overview of the evidence proffered in order to be satisfied that it reflects scientific theory or technique that has either gained acceptance in the scientific community , or if not accepted, is considered otherwise reliable in accordance with the methodology validating it. The trial judge will be required to hear sufficient evidence to determine reliability as a preliminary matter. Moreover, the trial judge must not pass judgement on the particular application of the methodology of the expert. That is a question of weight to be determined by the jury. The trial judge must restrict his inquiry to determine whether the proposed novel scientific technique or theory has a foundation in science, as determined. The nature and scope of the evidence necessary for the trial judge to reach the threshold determination will vary according to the type of evidence proffered and the concessions made by counsel. As a result it would be unwise to define the threshold test of reliability with the precision advanced by the scientific community. Rather, the threshold test of reliability must remain capable of adaptation to changing circumstances and realities. Reliability is best determined under the scrutiny of the trial judge as guided by the demands and particularities of the case. Simply stated, the threshold test of reliability is met when the trial judge, having reviewed certain evidence presented by counsel, feels that the novel scientific technique or theory is sufficiently reliable to put to the jury for its review."

One cannot read into the case support for the active judicial gate keeping which is driven in the United States by a series of US Supreme Court decisions. But it is clear that admissibility turns on the proponent providing evidence of a foundation in science. I read the decision to mean that non acceptance by a scientific community of the methodology is not the issue; the issue is whether there is a foundation in scientific principle for the proffered evidence. This is akin to the thrust of the Daubert law in the United States.

From the decision this much is encouraging; simply counting noses in the scientific community as in the days of the Frye test is no longer the measure. This means lawyers must understand science. The limits to expertise in litigation should not be imposed by the failure of counsel to

grasp the application of a scientific or otherwise reliable discipline to the case at bar.

Understanding science and other reliable disciplines will be a significant challenge for advocates in the new era.

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