

## THE ADMISSIBILITY OF EVIDENCE BASED ON NOVEL SCIENCE

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We live in an age of wonders. The advances of science and technology have created a palpably different world that is based on theories and principles as opaque to the ordinary citizen as “mysteries” of the world’s great religions. For the uninitiated, a leap of faith is required. As with religion, a general faith in science may be well justified by the contemplation of the world around us. But choosing which scientific theory to adopt may prove to be more of an issue. When scientific truth becomes an issue in the judicial process, choices become necessary because the outcome of the proceeding may be crucially affected by the trier of fact’s decision as to which version of scientific truth to adopt.

It is quite clear that the court’s preoccupation is not with ultimate truth but with deciding the matter before it. The court’s concerns are fairness and finality — to do justice between the parties. The correct determination of facts is important but is qualified by other important factors such as the need for the judicial process to produce timely results at a reasonable cost. Scientific truth can be pursued from generation to generation. It is generally accepted that court proceedings should be conducted more expeditiously.

However, the courts cannot, especially in the context of criminal proceedings, shut themselves off from new learning just because it is too time consuming or costly to evaluate and apply properly. Ultimately, a divergence between scientific truth as it is understood by the scientific community and as it is applied by the courts has the potential to undermine the confidence of the public in the administration of justice. Indeed, “new science” has always had that potential

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even when it was not presented to a court in the original legal proceedings. This is well illustrated by the explosion of applications to set aside prior convictions based on new DNA evidence.<sup>1</sup> Where new science proves old criminal convictions to have been wrong, it is not just the scientific evidence that is called into question — it is the competence and motivation of all of the participants in the apparent miscarriage of justice.

In criminal proceedings, the presumption of innocence and the requirement for proof beyond a reasonable doubt introduce additional elements of complexity to the issue of what a court should accept as reliable scientific evidence. These protections of the rights of accused persons, when combined with the adversarial process and the vigorous scientific debate that accompanies new theories and advances, create a rich primordial soup which may give life to the most inanimate defence.

### 1. Canada Pre-Mohan

Prior to the Supreme Court of Canada decision in *R. v. Mohan*,<sup>2</sup> expert evidence was admissible with respect to matters calling for a “special knowledge”, which were defined to be matters outside the knowledge of a judge or jury. An expert in the field was permitted to state his opinion and to draw inferences that the judge and jury, due to the technical nature of the issues, were unable to formulate for themselves.<sup>3</sup> If, on the proven facts, a judge or jury could form their own conclusions without help, the opinion of the expert was *unnecessary*.<sup>4</sup>

Although the tests of special knowledge, expertise and necessity may appear to set a high standard for the reception of expert evidence, this is not necessarily the case — especially with respect to new or “novel” science. By definition, one might expect that those working on new scientific theories would have some form of specialized knowledge and a corresponding expertise in that area. Equally, a judge and

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1. In 1995, former U.S. Attorney General Janet Reno ordered the Department of Justice to report to her on the exoneration of convicted prisoners based on DNA evidence. In response to the findings in the report entitled *Convicted by Juries, Exonerated by Science*, Reno supported the establishment of Innocence Projects across the country. The Innocence Project at the Benjamin N. Cardozo School of Law alone has assisted in the exoneration of 162 prisoners since 1979. In Canada, DNA testing helped overturn the convictions of Guy Paul Morin and David Milgaard.
  2. [1994] 2 S.C.R. 9, 114 D.L.R. (4th) 419, 89 C.C.C. (3d) 402.
  3. *R. v. Abbey* (1982), 68 C.C.C. (2d) 394 at p. 409, 138 D.L.R. (3d) 202, [1982] 2 S.C.R. 24.
  4. *R. v. Turner* (1974), 60 Cr. App. R. 80 at p. 83, *per* Lawton L.J.

jury lacking *any* scientific training may be expected not to have — and therefore to need — the information such an expert can provide.

It should be noted that although the criteria for admissibility stated above did not include any inquiry into the quality of the evidence itself, the word “knowledge” includes that possibility. Indeed, how is a judge to assess the quality of a scientific opinion when, by definition, she or he lacks the expertise to do so? The adversary process offers a qualified answer. The parties can make contending submissions and cross-examine the putative expert. This is a process that can, and should, lead to the preemptory dismissal of scientific hoaxes and what may truly be disclosed as “junk” science. But the court is not really qualified to arbitrate a genuine dispute within the scientific community.

Therefore, the court must either focus on criteria related to the requirements of the judicial process or the court must adopt some objective criteria relating to the proffered evidence, or both. This need for a filter to exclude questionable scientific theories is driven by the need to keep all judicial proceedings involving scientific evidence focused and within reasonable bounds. In our adversary process, to every action there is an equal and opposite reaction. The admission of evidence of one expert is almost certain to spawn contradictory or qualifying evidence from another expert, resulting in geometrically expanding expenditures of time and money. On the other hand, the exclusion of potentially relevant evidence also comes at a cost, especially in jury trials at which the jury may never become aware of the existence of possible evidence once it is excluded by the trial judge. This raises the difficult issue as to when, in the process, the challenge to potentially “unreliable” scientific evidence should take place.

Prior to the Supreme Court of Canada’s decision in *Mohan*, a leading case in the area of expert technical or scientific evidence was *R. v. Melaragni*.<sup>5</sup> In that case the court considered the admissibility of evidence as to the point at which a bullet pierced the rear window of a car based on lineal fracture lines formed in the tempered glass around the edge of the window.

In his reasons, Moldaver J. (as he then was) attempted to develop a systemic approach to assessing the reliability of expert evidence at the admissibility stage. When discussing the admissibility of what he called “a new scientific technique or body of knowledge” (rather than novel science), he held that “merely because the proposed evidence passes some minimum threshold test of reliability does not in and of itself lead to its inclusion”.<sup>6</sup> In addition to the initial threshold test, “the

5. (1992), 73 C.C.C. (3d) 348 (Ont. Ct. (Gen. Div)).

6. *Ibid.*, at p. 353.

evidence must be outside the experience and knowledge of the trier of fact, and it may only be tendered through a properly qualified expert".<sup>7</sup> Moldaver J. went on to enumerate a non-exhaustive list of nine factors to be considered even when these "pre-conditions" are satisfied, before the evidence can ultimately be admitted:<sup>8</sup>

- (1) Is the evidence likely to assist the jury in its fact-finding mission, or is it likely to confuse and confound the jury?
- (2) Is the jury likely to be overwhelmed by the "mystic infallibility" of the evidence, or will the jury be able to keep an open mind and objectively assess the worth of the evidence?
- (3) Will the evidence, if accepted, conclusively prove an essential element of the crime which the defence is contesting, or is it simply a piece of evidence to be incorporated into a larger puzzle?
- (4) What degree of reliability has the proposed scientific technique or body of knowledge achieved?
- (5) Are there a sufficient number of experts available so that the defence can retain its own expert if desired?
- (6) Is the scientific technique or body of knowledge such that it can be independently tested by the defence?
- (7) Has the scientific technique destroyed the evidence upon which the conclusions have been based, or has the evidence been preserved for defence analysis if requested?
- (8) Are there clear or legal grounds which would render the evidence inadmissible despite its probative value?
- (9) Will the evidence cause undue delay or result in the needless presentation of cumulative evidence?

Moldaver J. recognized that each factor would be of varying importance depending on the facts and context of a specific case.

Moldaver J. carefully reviewed the basis on which the proposed evidence was put forward as well as the challenge to it by the defence expert. Applying all nine factors to the case at bar, Moldaver J. found the evidence to be admissible. He found that in many respects the defence expert validated the underlying premises of the technical evidence proffered by the Crown. He stated as follows:<sup>9</sup>

My analysis has led me to conclude that the proposition which forms the foundation of the proposed evidence is quite reliable when used to determine a zone area of impact. It may be somewhat less reliable in pinpointing the exact location of impact, but the proposed evidence is not being tendered for that purpose.

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7. *Ibid.*

8. *Ibid.*

9. *Ibid.*, at pp. 353-54.

I am further satisfied that the evidence, if accepted, could assist the jury in its fact-finding mission and it will not confuse or confound the jury. The proposition is readily understandable and its application is for the most part simple and straightforward.

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I have no doubt that the jury will carefully consider cross-examination designed to weaken or destroy the work of the proposed evidence. I have every confidence that the jury will pay close attention to an opposing expert, and I am equally confident that the jury will follow legal instruction regarding the work of expert evidence in general and this evidence in particular.

## 2. The United States and Daubert

In the United States, prior to the decision of the Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*<sup>10</sup> the general approach to the acceptance of expert evidence was established in the case of *Frye v. United States*,<sup>11</sup> a decision of the Court of Appeal for the District of Columbia in 1923. The *Frye* case dealt with the admissibility of evidence derived from a systolic blood pressure deception test (an early form of lie detector). The Court of Appeal introduced a “general acceptance” test for expert evidence which remained prevalent in the United States until the *Daubert* case was decided:<sup>12</sup>

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, *the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.*

In *Frye*, the proposed evidence was ruled inadmissible because it had not yet gained “such standing and scientific recognition . . . as would justify the courts in admitting expert testimony” that had been derived from it. This approach changed with the *Daubert* case in 1993, where the Supreme Court of the United States ruled that the *Frye* test was superseded by the adoption of the *Federal Rules of Evidence* in 1975.

The court of first instance in *Daubert* had granted a summary judgment application and dismissed an action based on an allegation that serious birth defects had been caused by the prenatal ingestion of

10. 509 U.S. 579 (1993).

11. 293 F. 1013 (D.C. Cir. 1923).

12. *Ibid.*, at p. 1014 (emphasis added).

Bendectin, a prescription drug marketed by the defendant. The summary judgment had been based upon the finding that the evidence put forward by the plaintiffs suggesting a link between the drug and the birth defects did not meet the "general acceptance" standard for the admission of expert testimony. The court of first instance had considered Rule 702 of the new *Federal Rules of Evidence* but had determined that the rule incorporated the common law of evidence, including the "general acceptance" test set out in *Frye*. This argument was also urged on the Supreme Court of the United States by counsel for the defendant.

However, the Supreme Court of the United States held that the common law of evidence had been completely replaced by the *Federal Rules of Evidence*. In particular, it held that the admission of expert testimony was to be governed exclusively by Rule 702, which provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or 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.

It seems clear that the *Daubert* court was of the opinion that the standard of "general acceptance" in *Frye* was too inflexible and restrictive. Equally, it would appear that the court was of the view that Rule 702 had a "liberal thrust", with the "general approach of relaxing the traditional barriers to 'opinion' testimony"<sup>13</sup> as had been found in various lower court decisions that had interpreted that rule.

However, far from approving of a free-wheeling exchange of untested scientific theories; the decision in *Daubert* emphasizes that "under the rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but *reliable*".<sup>14</sup>

With Chief Justice Rehnquist dissenting on what he felt was a too-detailed exposition of the meaning of Rule 702, the majority decision as written by Blackmun J. laid down four factors for determining the admissibility of expert evidence, especially with respect to novel science:<sup>15</sup>

(1) whether the theory or technique can be and has been tested: "Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry."

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13. *Daubert, supra*, footnote 10, at p. 589.

14. *Ibid.* (emphasis added).

15. *Ibid.*, at pp. 593-94, as summarized in *R. v. J. (J.-L.)*, [2000] 2 S.C.R. 600 at para. 33, 192 D.L.R. (4th) 416, 148 C.C.C. (3d) 487.

(2) whether the theory or technique has been subjected to peer review and publication: “[S]ubmission to the scrutiny of the scientific community is a component of ‘good science’, in part because it increases the likelihood that substantive flaws in methodology will be detected.”

(3) the known or potential rate of error or the existence of standards; and,  
 (4) whether the theory or technique used has been generally accepted: “[A] reliability assessment does not require, although it does permit, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community . . . Widespread acceptance can be an important factor in ruling particular evidence admissible, and ‘a known technique which has been able to attract only minimal support within the community’ . . . may properly be viewed with skepticism.”

It has been and continues to be argued that the *Daubert* court did not replace but merely added to the “general acceptance” requirement that had been set out in *Frye*. What the majority in *Daubert* did is provide a clearer roadmap as to how the issue of reliability is to be assessed. Indeed, when the case was remanded to the court of first instance to apply the legal tests set out by the Supreme Court of the United States, the evidence was rejected once again and the result of the summary judgment motion did not change.<sup>16</sup> At least one informed observer has argued that the *Daubert* principles are actually less flexible than the *Frye* standard of “general acceptance”:<sup>17</sup>

. . . [a]nd the reason they’re less flexible is they’re stricter. The intent [of the majority in *Daubert*] was to say to the judge: you’ve got a bigger role in this than you thought. Prior to *Daubert* what really was going on was a credential test. If the person had enough degrees and publications and memberships — being a member of learned societies, then the witness was let in and the judge really only was keeping out, you know, completely crackpot types.

There are a number of other interesting features of Blackmun J.’s opinion in *Daubert* that are worth noting:

- Rule 702 clearly contemplates some degree of regulation of the subjects and theories about which an expert may testify.
- The subject of an expert’s testimony must be “scientific . . . knowledge”. The adjective “scientific” implies a grounding in the methods and procedures of science. Similarly, the word “knowledge” connotes more than subjective belief or unsupported speculation.

16. 43 F.3d 1311 (1995).

17. 2004 ACCL/CCCL *Joint Meeting-Plenary Session of the Judiciary* (2005), 39 C.L.R. (3d) 33, Judge Smith.

- It would be unreasonable to conclude that the subject of scientific testimony must be “known” to a certainty; arguably, there are no certainties in science.
- In a case involving scientific evidence, *evidentiary reliability* will be based on *scientific validity*.
- Rule 702’s “helpfulness” standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.
- The inquiry envisioned by Rule 702 is a flexible one. Its overarching subject is the scientific validity — and thus the evidentiary relevance and reliability — of the principles that underlie a proposed submission.
- The focus must be solely on principles and methodology, not on the conclusions that they generate.
- Vigorous cross-examination, presentation of contrary evidence and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.
- There are important differences between the quest for truth in the court room and the quest for truth in the laboratory. Scientific conclusions are subject to perpetual revision. Law, on the other hand, must resolve disputes finally and quickly.

While many observers initially focused on the intended result in *Daubert* to sound the alarm that the courts were now open to junk science, others have noted that *Daubert* substantially increased the grounds on which such evidence can be attacked at the admission stage.

### 3. United States Courts Post-Daubert

In the years following the *Daubert* decision, federal courts in the United States adopted a more stringent approach to deciding on the admissibility of expert evidence, contrary to what may have been expected. This approach, which emerged through what became known as the “*Daubert* Trilogy”, has in fact resulted in “more frequent exclusion of key expert testimony or summary judgment”.<sup>18</sup>

In *General Electric Co. v. Joiner*,<sup>19</sup> the second case in the trilogy, the Supreme Court applied the following factors, finding that epidemiological evidence did not meet the reliability and admissibility standards:

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18. Katerina M. Eftimoff, “The Decade After *Daubert* Proves Tough on Expert Witnesses”, *Litigation News* 27:5 (July 2002), p. 1.

19. 139 L. Ed. 2d 508 (1997) (hereafter *Joiner*).



1. The study must be relevant and reliable.
2. The subject-matter of the study must be similar to the case at hand.
3. The statistics provided in the study should allow the author to draw conclusions.
4. The study should involve the product or substance at issue.
5. The study should suggest a link between the increased incidence of an illness and exposure to the product or substance at issue.
6. The study should not show exposure to more than one potentially toxic product or substance.
7. There should not be too great an analytical gap between the data generated from the study and the expert opinion based on that data.

The plaintiffs alleged that there was a link between exposure to polychlorinated biphenyls (PCBs) and small cell lung cancer. The plaintiffs sought to introduce expert opinion that PCBs contributed to the plaintiffs' small cell lung cancer. In coming to this conclusion, the experts relied on animal studies and four epidemiological studies.

The U.S. Supreme Court upheld the trial judge's exclusion of this evidence on the basis that the animal studies and the four epidemiological studies were not sufficient, whether individually or in combination, to support the experts' conclusions.

It has been suggested by Lederman J. in his definitive article on the admissibility of evidence based on novel science, that in its reasons in *Joiner*, "the Court began to blur the methodology-conclusions distinction from *Daubert*"<sup>20</sup> without mentioning or applying the factors in that case. Although acknowledging that, in assessing reliability at the admissibility stage, the focus must be "solely on principles and methodology, not on the conclusions that they generate", the court in *Joiner* noted:<sup>21</sup>

Conclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* [a bare assertion resting on the authority of an individual] of the

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20. The Honourable Mr. Justice Sidney N. Lederman, "Judges as Gatekeepers: The Admissibility of Scientific Evidence Based on Novel Theories", originally published in Joost Bloom and H el ene Dumont, eds., *Science Truth and Justice* (Montreal: Les  ditions Th emis/Canadian Institute for the Administration of Justice, 2001) and updated in October, 2002, pp. 219-42.

21. *Joiner*, *supra*, footnote 19, at pp. 518-19.

expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.

In the third case in the trilogy, *Kuhmo Tire Co. Ltd. v. Carmichael*,<sup>22</sup> the plaintiffs sued a tire maker and distributor after a blown-out tire led to an accident in which one passenger of a car was killed and two others were severely injured. The District Court granted the defendant's motion to exclude the expert testimony on tire technology, as well as their accompanying motion for summary judgment. The decision of the court of first instance was upheld by the Supreme Court, relying on the language in Federal Rule 702 as well as the finding that "the evidentiary rationale that underlay the Court's basic *Daubert* 'gatekeeping' determination"<sup>23</sup> is not limited to "... scientific knowledge. With this decision, the Court confirmed that *Daubert* applies to all expert testimony based on technical and other specialized knowledge . . .".<sup>24</sup> However, the court also emphasised the flexibility of the *Daubert* test. It concluded that<sup>25</sup>

we can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in *Daubert* nor can we now do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends on upon the particular circumstances of the particular case at issue.

More recently, in *Rider v. Sandoz Pharmaceuticals Corporation*,<sup>26</sup> the Eleventh Circuit Court of Appeal again excluded an expert causation opinion on the basis that there were various problems with the evidence relied on in forming that opinion. The court noted that the experts were qualified in their respective fields and relied upon epidemiological studies, case reports, challenge/rechallenge tests and animal studies to support their opinions that the drug Parlodel caused hemorrhagic strokes. At first instance, the District Court held that the plaintiff's expert testimony was not sufficiently reliable to meet the standards established by *Daubert* and that decision was affirmed on appeal. The epidemiological studies presented found no relationship or a negative relationship between Parlodel and stroke and another may have suggested a positive relationship. However, it was agreed between the parties that none of these studies presented statistically significant results and that the epidemiological evidence was inconclusive. In the result,

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22. 119 S.Ct. 1167 (1999).

23. *Ibid.*, at para. 18.

24. Shari Elliot, "Judicial 'Gatekeeping' improves the quality of expert evidence", *Lawyers Weekly* (January 23, 2004), p. 8.

25. *Supra*, footnote 22, at p. 1175.

26. 295 F. 3d 1194 (2002).

the court found that the evidence relied upon by the plaintiffs' experts was insufficient to meet the requirements of *Daubert*. In particular, the court was critical of the reliance on case reports and properly concluded that the case reports did not by themselves provide reliable proof of causation.

Following *Daubert* and the subsequent cases that expanded its scope to various types of expert evidence, "there are more challenges to the admissibility of evidence today than there were 10 years ago".<sup>27</sup> This includes time-consuming "*Daubert* motions" to exclude expert testimony. As judges fulfil the gatekeeping responsibility in deciding the admissibility of expert testimony, "the courts need to become mini-experts in the field under consideration".<sup>28</sup>

It is interesting to compare these developments in the United States with developments in Canada over roughly the same time frame.

#### 4. *R. v. Mohan*

The reasons given by Sopinka J. for a unanimous court in *Mohan* continue to be the most important articulation in Canadian jurisprudence of the basis on which expert evidence will be received by the court. In the *Mohan* case, a practising paediatrician was charged with four counts of sexual assault on four female patients aged 13 to 16 during medical examinations conducted in his office. His counsel at trial tendered evidence from a psychiatrist who would testify that the perpetrator of the alleged offences was part of a limited and unusual group of individuals with specific characteristics not possessed by the accused. The trial judge held a hearing to determine the admissibility of the evidence before it was submitted to the jury (a "*voir dire*"). The trial judge ruled that the evidence was not admissible. At the conclusion of the trial, the jury entered a conviction. The conviction was overturned by the Court of Appeal on the basis that the evidence should have been admitted.<sup>29</sup> It was the Crown's position on appeal that the expert was not qualified to give the evidence in question and "that it was for this reason that the trial judge refused to admit his evidence before the jury".<sup>30</sup> However, in his reasons, Finlayson J.A. held that this was not a correct interpretation and that the trial judge had in fact erred as he had ruled on the sufficiency of the expert's opinion rather than its admissibility.<sup>31</sup>

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27. *Supra*, footnote 24, at p. 8.

28. *Ibid.*

29. (1992), 8 O.R. (3d) 173, 55 O.A.C 309, 71 C.C.C. (3d) 321 (C.A.).

30. *Ibid.*, at p. 175.

31. *Ibid.*, at p. 177.

On the further appeal to the Supreme Court of Canada, the trial judge's decision excluding the evidence was upheld and the conviction was restored.

Writing for the court, Sopinka J. established a four-part test for determining whether or not an expert's opinion was admissible as evidence: (1) relevance; (2) necessity in assisting the trier of fact; (3) absence of any exclusionary rule; and (4) a properly qualified expert.<sup>32</sup>

### **(1) Relevance**

With respect to relevance, Sopinka J. indicated in *Mohan* that even where expert evidence is logically relevant and goes to a fact in issue, the trial judge must perform a cost-benefit analysis when deciding whether or not to admit such evidence.<sup>33</sup>

Evidence that is otherwise logically relevant may be excluded on this basis, if its probative value is overborne by its prejudicial effect, if it involves an inordinate amount of time which is not commensurate with its value or if it is misleading in the sense that its effect on the trier of fact, particularly a jury, is out of proportion to its reliability.

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Dressed up in scientific language which the jury does not easily understand and submitted through a witness of impressive antecedents, this evidence is apt to be accepted by the jury as being virtually infallible and as having more weight than it deserves.

### **(2) Necessity in Assisting the Trier of Fact**

On the topic of necessity, Sopinka J. cited with approval from *R. v. Abbey*, "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. If on the proven facts a judge or jury can form their own conclusions without help, then the opinion of the expert is unnecessary."<sup>34</sup>

The court confirmed that the "subject-matter of the inquiry must be such that ordinary people are unlikely to form a correct judgment about it, if unassisted by persons with special knowledge"<sup>35</sup>.

Further, it was made clear that the standard for necessity was something higher than "helpfulness" but that the standard should not be applied too strictly.<sup>36</sup>

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32. *Supra*, footnote 2, at p. 20.

33. *Ibid.*, at p. 21.

34. *Ibid.*, at p. 23.

35. *Ibid.* See also *R. v. D. (D.)*, [2000] 2 S.C.R. 275, 191 D.L.R. (4th) 60, 148 C.C.C. (3d) 41.

36. *Mohan*, *ibid.*, at p. 23.

### (3) Absence of any Exclusionary Rule

Even where expert evidence complies with the other three *Mohan* criteria, it cannot be admitted where it offends some other exclusionary rule.<sup>37</sup> For example, expert evidence may be challenged for its reliance on hearsay, or as going to character where the accused has not put his character in issue.<sup>38</sup>

### (4) Properly Qualified Expert

In his brief summation of what constitutes a properly qualified expert, Sopinka J. made it clear that experts must have “acquired special or peculiar knowledge through study or experience”.<sup>39</sup>

## 5. Mohan and Novel Science

The issue of the intrinsic quality of expert evidence is addressed in *Mohan* only indirectly rather than by the application of tests that evaluate the scientific basis of the opinion itself. This seems to reflect a concern that the question of admissibility should not involve a determination of the merits of the evidence itself. However, this distinction can become quite strained and artificial. For example, the consideration of relevance as set out by Sopinka J. extends to an inquiry as to whether the evidence “is worth what it costs”.<sup>40</sup>

Cost in this context is not used in its traditional economic sense but rather in terms of its impact on the trial process. Evidence that is otherwise logically relevant may be excluded on this basis, if its probative value is overborne by its prejudicial effect, if it involves an inordinate amount of time which is not commensurate with its value or if it is misleading in the sense that its effect on the trier of fact, particularly a jury, is out of proportion to its reliability. While frequently considered as an aspect of legal relevance, the exclusion of logically relevant evidence on these grounds is more properly regarded as a general exclusionary rule (see *Morris v. The Queen*, [1983] 2 S.C.R. 190). Whether it is treated as an aspect of relevance or an exclusionary rule, the effect is the same. The reliability versus effect factor has special significance in assessing the admissibility of expert evidence.

37. *Ibid.*, at p. 25.

38. However, it must be remembered that post-*Starr* (*R. v. Starr*, [2000] 2 S.C.R. 144, 190 D.L.R. (4th) 591, 147 C.C.C. (3d) 449), a principled approach to hearsay evidence is required. Under the principled approach, the admissibility of hearsay evidence is decided according to its necessity and reliability rather than by the applicability of a strict traditional exception. The Supreme Court has made clear that any hearsay problems relating to information relied also upon by the expert go to the weight to be afforded to, and not the admissibility of, the evidence in question (See *R. v. Lavallee*, [1990] 1 S.C.R. 852, 55 C.C.C. (3d) 97, [1990] 4 W.W.R. 1.)

39. *Supra*, footnote 2, at p. 25.

40. *Ibid.*, at p. 21.

While Sopinka J. appeared in his statement of the general rules applicable to expert evidence to stop short of any evaluation of the expert evidence on its merits, it is clear that the quality of the evidence (in terms of its reliability) is a key component in determining whether it should be admitted. In a paragraph which summarizes the four principles outlined above with special emphasis on their application to “novel science”, Sopinka J. went on to say:<sup>41</sup>

... expert evidence which advances a novel scientific theory or technique is subjected to special scrutiny to determine whether it meets a basic threshold of reliability and whether it is essential in the sense that the trier of fact will be unable to come to a satisfactory conclusion without the assistance of the expert. The closer the evidence approaches an opinion on an ultimate issue, the stricter the application of this principle.

Unlike the decision of the Supreme Court of the United States in *Daubert*, which emphasizes that Rule 702 applies to all expert evidence and that there is no special rule for novel science, Sopinka J. appears to suggest that a different approach involving “special scrutiny” is called for once it has been determined that the expert evidence that is being tendered advances a novel scientific theory or technique. It is not immediately clear from the *Mohan* decision what would cause an expert opinion to be classified as novel science or to mark it for “special scrutiny”. As well, in contrast to the decision in *Daubert*, Sopinka J. did not go on to articulate how the “special scrutiny” is to be carried out.

It is also unclear (and has been the subject of discussion in later cases) whether “a basic threshold of reliability” is an independent test for the admissibility of all expert evidence or only for expert evidence that can be characterized as involving a novel scientific theory or technique.

In *R. v. Klymchuk*,<sup>42</sup> Wein J. commented that while *Mohan* did not specifically enumerate reliability as a criterion for admissibility, reliability must be considered in assessing both relevance and necessity. “*Mohan* requires a judge to conduct a cost-benefit analysis and to weigh the probative value of the evidence against any prejudicial effect. In that way, a trial judge must consider whether the evidence is misleading, in the sense that its effect on a trier of fact, particularly a jury, is out of proportion to its reliability”.<sup>43</sup>

If indeed reliability is a general requirement for admission of all expert evidence, the inquiry as to admissibility may take the court a long way into a consideration of the proffered evidence on its merits.

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41. *Ibid.*, at p. 25.

42. [2000] O.J. No. 5497 (QL) (S.C.J.).

43. *Ibid.*, at para. 45.

On the other hand, limiting the “basic threshold of reliability” test to novel science may be seen to incorporate a degree of circularity or even a rejection of evidence based on premature conclusions as to its validity.

Similarly, the test in Sopinka J.’s “summary” as to whether “the trier of fact will be unable to come to a satisfactory conclusion without the assistance of the expert” may involve assuming the very conclusion which needs to be tested in the trial process: whether the trier of fact should be influenced by the evidence of the expert.

In a sense, what emerges from Sopinka J.’s summary highlights the paradox inherent in the “necessity” test articulated by the *Mohan* decision. On the one hand, how is the court to determine whether expert evidence is necessary if the court lacks the necessary expertise? On the other hand, what protection do the parties have against the possibility that a trier of fact may feel that he or she knows more about a particular subject than is the case and proceeds to reject the assistance of a qualified expert on that basis?

*Mohan* is similarly equivocal on the question of whether or not expert evidence is excluded if it relates to the “ultimate issue”. Sopinka J. confirmed that the rule is no longer of general application. However, he went on to say: “the concerns underlying [the rule against expert evidence relating to the ultimate issue] remain. In light of these concerns, the criteria of relevance and necessity are applied strictly, on occasion, to exclude expert evidence as to an ultimate issue.”<sup>44</sup>

It would appear that the occasions Sopinka J. had in mind when the ultimate issue rule might be applied were occasions on which “novel” science is involved and where acceptance of the conclusion of the novel science would come close to being a determination of guilt or innocence. In his summary paragraph which states the principle that a novel scientific theory or technique is subjected to special scrutiny, Sopinka J. stated: “the closer the evidence approaches an opinion on an ultimate issue, the stricter the application of this principle”.<sup>45</sup> This sliding scale approach places *Mohan* squarely within the modern trend of Supreme Court of Canada jurisprudence in which categorical rules are replaced by factors that are to be balanced against each other.

Following his discussion of the general rules relating to the reception of expert evidence in *Mohan*, Sopinka J. discussed at length expert evidence that is tendered in an attempt to exclude the accused from a distinctive group of individuals who are identified as potential perpetrators of the crime in question. He held that the trial judge was right

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44. *Supra.*, footnote 2, at p. 24.

45. *Ibid.*, at p. 25.

to reject that evidence as not satisfying the preconditions of the admission of such evidence. The evidence tendered fell short of establishing that crimes of the type in question were committed by a distinctive group of individuals who were defined by a characteristic not shared by the accused.

Sopinka J.'s final conclusion on the overall issue of the admissibility of novel science was expressed in these terms:<sup>46</sup>

There was nothing to indicate any *general acceptance* of this theory. Moreover, there was no material in the record to support a finding that the profile of a pedophile or psychopath has been *standardized* to the extent that it could be said that it matched the supposed profile of the offender depicted in the charges. The expert's group profiles were not seen as *sufficiently reliable* to be considered helpful. In the absence of these *indicia* of reliability, it cannot be said that the evidence would be necessary in the sense of usefully clarifying a matter otherwise unaccessible, or that any value it may have had would not be outweighed by its potential for misleading or diverting the jury. Given these findings and applying the principles referred to above, I must conclude that the trial judge was right in deciding as a matter of law that the evidence was inadmissible.

Although in this operative paragraph of his reasons Sopinka J. did not refer back to his own comments regarding "novel science" or to the principles laid out in *Daubert*, it seems that the following synthesis is possible.

Ultimately, it is a lack of "general acceptance" that brings expert evidence into the category of novel science and qualifies it for special scrutiny. When novel science is subjected to special scrutiny, any deficiencies in terms of scientific procedures and validated results, as more specifically articulated in *Daubert*, will raise concerns regarding its "reliability". In turn, it is the lack of reliability of such evidence that leads to the conclusion that it is unhelpful. This is because the admission of such evidence would result in the trier of fact potentially placing unjustified "weight" on the evidence. In that sense, consideration given to the evidence and any evidence led to rebut it in the trial process would result in costs that are not commensurate with its value. Finally, it is clear that evidence that is unhelpful is also unnecessary.

Viewed in this light, it is apparent that the approach taken by the Supreme Court of Canada in *Mohan* is very consistent with the approach set out by the Supreme Court of the United States in *Daubert*. *Mohan* speaks to the issue primarily in terms of the quality of the judicial process, whereas *Daubert* defines the issue more in terms of the

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46. *Ibid.*, at p. 38 (emphasis added).



quality of the science. Ultimately, these two perspectives are inextricably interwoven. However, the Supreme Court of Canada in *Mohan* seems to have had a clearer understanding than the Supreme Court of the United States in *Daubert* that the principles it was articulating would lead to a more rigorous and cautious approach to the admission of evidence based on novel science.

## 6. The Court as Gate Keeper

The key change brought about by the *Daubert* and *Mohan* cases was not to make novel science easier to admit (as the court in *Daubert* seems to have anticipated) or to make it harder to admit (as seems to have been the intent of the court in *Mohan*). Rather, both decisions had the effect of engaging the court in a proactive, intellectually rigorous evaluation of expert evidence at the admissibility stage. No longer could expert evidence be admitted simply because it was offered by a witness with impressive qualifications, leaving it to the adversary process to sort out the wheat from the chaff. Equally, new theories could not be summarily dismissed without further consideration simply because they had not yet reached and were not yet accepted by the wider scientific community. In other words, the “gate keeper” role was significantly enhanced by these decisions. Furthermore, both *Daubert* and *Mohan* provided a framework within which the court should approach this function.

The compatibility of the *Daubert* and *Mohan* decisions was recognized by the Supreme Court of Canada in its judgment in the case of *R. v. J. (J.-L.)*.<sup>47</sup> Writing for a unanimous court, Binnie J. noted that both cases established a “reliable foundation” test.

Although Binnie J. seems to imply that the “general acceptance test” was rejected in *Mohan* while remaining one of several factors to be considered under the *Daubert* approach, it has already been pointed out that in his application of the four principles in *Mohan* to the facts of that case, Sopinka J. began by noting the lack of general acceptance of the science upon which the proposed expert evidence was based.

In *R. v. J. (J.-L.)*, the expert evidence that was tendered was based on a device known as a plethysmograph. The device was used to measure the accused’s responses to visual and auditory sexual stimulation (*i.e.* pornographic videos) to determine what physiological reaction (*i.e.* arousal) resulted in the patient while viewing the images. The device was generally accepted as a tool in the therapeutic community for use with admitted sexual deviants to track progress of reduction of deviant sexual interests. However, it had not been accepted as a diagnostic tool.

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47. *Supra*, footnote 15.

As such, Binnie J. clearly stated that though the science itself was not novel, the expert was using it for a novel purpose.

In the end, the evidence of the expert was rejected because it was not found to be relevant as required by *Mohan*. The court specifically took issue with (1) the lack of a standard pedophile profile against which to compare the results of any test performed on the accused; (2) the lack of specificity of the tests (*e.g.* that the pornographic images were standardized and were not made to replicate the acts with which the accused was charged); and (3) the high rate of error of the plethysmograph (capable of detecting a sexual deviant only 47.5% of the time). In his analysis, Binnie J. demonstrated how the application of the *Mohan* principles by the court, in the exercise of its gate keeper function, justified the exclusion of the evidence by the trial judge. He noted that the evidence was subject to special scrutiny both because the techniques employed were used for a novel purpose and because, if admitted, the evidence would come close to addressing the ultimate issue, namely whether the offence was probably committed by a member of a distinctive group from which the accused could be excluded. Binnie J. then proceeded to give the evidence special scrutiny under each of the four principles of general application mentioned in *Mohan*, although he did so in a different order. He found that while the expert himself was qualified in the relevant fields of psychiatry, sexology and physiology and that it was within his expertise to give opinion evidence about the tests administered under his supervision, the proposed evidence did not meet the other three tests in *Mohan*. More specifically, it was not relevant or necessary and it did fall within an exclusionary rule. It is fair to say that the analysis employed by Binnie J. in assessing the evidence against each of these three criteria owes a great deal to the approach outlined in *Daubert*.

On the issue of relevance, the fact that the expert's evidence was not based on any "standard profile" of the class of individuals who would commit the crime in question, the absence of specificity of the tests that were conducted in relation to the actual offences charged and the high error rate in plethysmograph results all suggested that the trial judge was right to exclude the testimony as unreliable and offering "as many problems as it did solutions". The fact that the evidence could not logically support the existence of a distinctive class from which the accused could be excluded also meant that the evidence did not come within the exception to the general exclusionary rule against evidence relating to the disposition of an accused person to commit a particular offence. This had also been the result in *Mohan* with respect to evidence given for a similar purpose. Finally, the fact that the expert refused to produce his actual statistical results but was only prepared

to produce graphs (which summarized the results) suggested that, far from being necessary, the evidence would not actually allow the trier of fact to form any independent conclusion regarding the value of the evidence.

Parenthetically, it is interesting to note that the *R. v. J. (J.-L.)* case is popularly thought to be a case that takes a sympathetic view to novel science even though the proposed evidence was rejected in that case and even though, as we have seen, Justice Binnie applied rigorous judicial and scientific standards in doing so. The misconception about the case likely stems from a comment made by Justice Binnie in the course of his reasons to the effect that at one time it was accepted scientific theory that the world was flat. Given the result in *J. (J.-L.)*, Justice Binnie might have gone on to observe that there is no recorded instance of anyone getting lost because they acted on the theory that the world is flat. On the other hand, some of our First Nations friends might observe that Columbus appears to have gotten lost three times trying to prove the world is round!

### 7. *R. v. Terceira*: the “Voir Dire”

As noted above, in *Mohan* Sopinka J. did not provide detailed directions for conducting the reliability analysis or the “special scrutiny” his decision prescribes. Some of the specific issues that arise were addressed in greater detail in the Ontario Court of Appeal decision of *R v. Terceira*,<sup>48</sup> where Finlayson J.A distinguished between the judge’s role in determining the admissibility of proffered expert testimony and the role of the judge or jury in determining the weight to be given to such evidence when and if it was admitted.

In *Terceira*, the accused was charged with the murder of the deceased, who had been found in a boiler room for which he had keys. Forensic evidence linked the appellant to the murder in part through DNA evidence. The trial judge admitted expert testimony regarding DNA testing after conducting a *voir dire*.<sup>49</sup> On appeal from conviction, the accused challenged the expert testimony, arguing that the judge had failed to properly determine the threshold issue of reliability.

In reasons dismissing the appeal, Finlayson J.A discussed the *voir dire*, also known as the “*Mohan* hearing”, at which threshold issue of reliability as it relates to admissibility is to be determined. On this issue, he held that *Mohan* did not change the format of the *voir dire* and that it remained a forum for the initial scrutiny of expert evidence in

48. (1998), 38 O.R. (3d) 175, 123 C.C.C. (3d) 1, 107 O.A.C. 15 (C.A.), affd [1999] 3 S.C.R. 866, 142 C.C.C. (3d) 95, 129 O.A.C. 283.

49. *Ibid.*, at p. 184.

order to decide on its admissibility and not a hearing to make a "determination of its ultimate reliability".<sup>50</sup> For this reason, Finlayson J.A. held that a level of flexibility at the *voir dire* is required for the purposes of efficiency and that<sup>51</sup>

. . . it is a mistake for this court to lay down a structure that must be adhered to in every case involving novel scientific theory or technique. We have seen too many trials unnecessarily delayed because of rigid formalism in the consideration of problems relating to the admissibility of evidence.

In order to allow for this necessary element of flexibility, he stated that it would be "unwise to define the threshold test of reliability with the precision advanced by the scientific community"<sup>52</sup> and that rather this was to be addressed in the context of a specific case. Finlayson J.A. held that common factors that judges had to consider were a determination of whether the evidence proffered "reflects a 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", as well as the qualifications of the expert advancing such evidence.<sup>53</sup>

Finlayson J.A. went on to address the standard of proof to be applied at the threshold stage of determining reliability of novel science at the *voir dire*. He held that *Mohan* had not "introduced, as a precondition to admissibility, a new standard of proof in the scrutiny of opinion evidence as it relates to a novel scientific theory or technique".<sup>54</sup> Rather, "the issue of reliability respecting novel scientific theory or technique relates strictly to a question of the admissibility of evidence where proof on a balance of probabilities is an acceptable standard".<sup>55</sup>

Equally importantly, Finlayson J.A. dealt with the sometimes tenuous distinction between the admissibility of expert witness evidence and the weight it is to be given. Reliability as it pertains to admissibility should not enter the realm of assessing the case-specific criticism to which the proffered evidence is subject. For example, in *Terceira*, the underlying science of DNA testing was relatively well established when the accused was tested between November 1990 and May 1991. Therefore, the main issue in that case was not the general nature of the science of DNA profiling but, rather, the specific

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50. *Ibid.*, at p. 202.

51. *Ibid.*, at p. 190.

52. *Ibid.*, at p. 203.

53. *Ibid.*, at p. 202.

54. *Ibid.*, at p. 196.

55. *Ibid.*

methodology used at the particular laboratory in handling the samples. Finlayson J.A. therefore held that cross-examination of the expert should “focus on the methodology used to calculate the numbers reflecting the frequency of the DNA profiling”.<sup>56</sup> This underlines the principle that, for the purposes of admissibility, what must be considered is the reliability of the methodology of the underlying science, not how a particular expert witness has applied that science.

This echoes Lederman J.’s observation that “the judge must not usurp the role of the jury by assessing the weight of the specific expert’s opinion on the *voir dire*”.<sup>57</sup> Once the initial threshold of reliability has been satisfied and the expert testimony is admitted, it is with the tools of the adversary process, such as examination and cross-examination, that the issue of weight should be determined.

### 8. Hard Science vs. Soft Science

The new tests for admissibility, articulated in *Mohan*, have proven easier to apply to novel hard science than to soft sciences. Hard sciences include physical phenomena such as physics and biological processes. “Soft sciences” deal with such behavioural topics as personality assessment,<sup>58</sup> battered wife syndrome,<sup>59</sup> and the incremental disclosure phenomena in sexual abuse victims.<sup>60</sup>

It is particularly challenging to apply the reliability aspect of the *Mohan* test to soft sciences. When determining the admissibility of evidence relating to behavioural science, judges have focused instead on whether it is “necessary to assist the trier of fact, rather than on threshold reliability”.<sup>61</sup> In fact, only a few cases have addressed the reliability of soft science.<sup>62</sup> However, the decision of Hill J. in *R. v. T. (J.E.)*<sup>63</sup> confirmed that there must be some threshold assurances of reliability for all expert evidence. His reasons demonstrate the continuum of the test for reliability that can lead to the challenge of applying this threshold test to novel soft science.<sup>64</sup>

The difficulty in applying the reliability test to soft sciences is due in part to the fact that their techniques and conclusions cannot be “tested”

56. *Ibid.*, at p. 184.

57. *Supra*, footnote 20, at p. 227.

58. See *R. v. S. (C.J.)* (1995), 171 A.R. 190 (Prov. Ct.).

59. See *R. v. Lavallee*, *supra*, footnote 38.

60. See *R. v. T. (J.E.)*, [1994] O.J. No. 3067 (QL), 25 W.C.B. (2d) 490, 1994 Carswell Ont 3370 (Ont. Ct. (Gen. Div.)).

61. Lederman, *supra*, footnote 20, at p. 232.

62. See *R. v. Olscamp* (1994), 35 C.R. (4th) 37, 95 C.C.C. (3d) 466 (Ont. Ct. (Gen. Div.)) and *R. v. T. (J.E.)*, *supra*, footnote 60.

63. *Ibid.*

64. *T. (J.E.)*, *ibid.*, at para. 73.

since they often “do not derive from statistical or empirical data” and “will usually involve case comparisons and take on . . . ‘an anecdotal quality’”.<sup>65</sup>

The tendency to subject novel soft science to greater scrutiny and, consequently, to admit it less often is also connected to the fact that the evidence produced by soft science may often come closer to dealing with the ultimate issue being tried. For example, in *R. v. J. (J.-L.)*, Justice Binnie, as discussed above, subjected the evidence in question to special scrutiny in part because, if admitted, it would come close to addressing the ultimate issue: whether the offence was probably committed by a member of a distinctive group from which the accused could be excluded.<sup>66</sup>

Also, in applying the test as to whether the novel science is necessary to assist the trier of fact, it is clear that judges tend to believe that the issues addressed by the behavioural sciences are often within the realm of normal human experience and, as such, expert evidence is not required to inform or instruct either a judge or jury. For example, in *R v. Hughes*, Romilly J. held that expert evidence on the topic of delayed disclosure with respect to an adult victim's failure to disclose sexual assault is inadmissible where the victim is capable of explaining the delay him- or herself.<sup>67</sup> In the case of *R. v. McIntosh*, an expert was to present testimony on the frailties of eyewitness identification using the novel science of the “psychology of witness testimony”, which addressed factors such as cross-racial identification and memory issues.<sup>68</sup> One of the grounds on which Finlayson J.A. refused to admit the evidence was that he found that the expert's testimony did not address an issue “outside of the normal experience of the trier of fact”.<sup>69</sup>

Finally, courts are wary of soft sciences because of past problems with expert testimony in such areas as “child sexual abuse accommodation syndrome and recovered memory”.<sup>70</sup> The instances where this type of evidence has been accepted and later proved faulty have made courts reluctant to accept it and risk repeating past mistakes. Recovered memory syndrome is believed to be responsible for the wrongful conviction of many defendants in sexual abuse cases. In the case of *R. v. Nelson*, the accused was convicted of sexual abuse in

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65. *Supra*, footnote 20, at p. 234.

66. *Supra*, footnote 15.

67. *R. v. Hughes* (1998), 18 C.R. (5th) 336 *sub nom. R. v. H. (A.)* (B.C.S.C.).

68. [1997] O.J. No. 3172 (QL), 35 O.R. (3d) 97, 117 C.C.C. (3d) 385 (C.A.), leave to appeal to S.C.C. refused 121 C.C.C. (3d) vi.

69. *Ibid.*, at p. 6.

70. *Supra*, footnote 20, at p. 234.

1996, based on a recovered memory of the plaintiff. The Ontario Court of Appeal released a short judgment delivered by Laskin J.A. which entered an acquittal and stated that the trial proceedings had “resulted in a miscarriage of justice”.<sup>71</sup> The backlash against recovered memory syndrome has resulted in expert testimony in a new area of false memory syndrome.<sup>72</sup> With these two kinds of behavioural science evidence conflicting so directly, courts are inclined to conduct a weighing of direct, non-expert evidence rather than to admit expert testimony in either area.

## 9. Conclusion

Perhaps the best conclusion of any discussion on the admissibility of evidence based on novel science is provided by the words of Hill J. in *T. (J.E.)*:<sup>73</sup>

Needless to say there is a continuum of reliability in matters of science from near certainty in physical sciences to the far end of the spectrum inhabited by junk science and opinion akin to sorcery or magic. Whether the technique can be demonstrably tested, the existence of peer review for the theory or technique, the existence of publication, the testing or validation employing control and error measurement, and some recognition or acceptance in the relevant scientific field all contribute to an assessment of the reliability of the opinion and hence its capacity to outweigh the prejudicial impact of imposing on the jury highly suspect opinion evidence masquerading as science: *Daubert et al v. Merrell Dow Pharmaceuticals Inc.*, supra, at 2795-2797 per Blackmun, J.; Gold, Alan, *Expert Evidence — Admissibility* (1994), 37 C.L.Q. 16 at 21-30.

It is expected that experts will still provide conflicting opinions in various matters, especially where the matter at hand is fluid, in the sense of the subject of recent study, experiment and understanding. This does not in itself raise the spectre of unreliability. Consensus among scientists on an issue is not required to admit opinion evidence. It has been held that even the finding of a significant percentage of error in test results may not, by itself, render inadmissible expert evidence relating thereto — “error is inherent in human affairs, scientific or unscientific ...”: *The Queen v. Beland and Phillips*, supra at 494, 495 per McIntyre, J.

A not insignificant number of participants in the administration of justice have voiced concerns as of late at what appears to be the phenomenon of the increased use of experts at trial. Experts fulfil a necessary role in appropriate cases and the adversary system itself has an important role in exposing the frailties of expert evidence led by the opposite party:

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71. [2001] O.J. No. 3405 (QL) at para. 1 (C.A.).

72. See *H. (L.) v. U. (W.)*, [1998] B.C.J. No. 1132 (QL) (S.C.).

73. *Supra*, footnote 60, at p. 21.

Kahn v. Ontario College of Physicians and Surgeons (1992), 9 O.R. (3d) 641 (C.A.) at 667 per Doherty, J.A.; Daubert v. Merrell Dow Pharmaceuticals, Inc., supra, at 2795 per Blackmun, J. However, the trial process must not take on the countenance of a medical or scientific convention with an exchange of highly speculative points of view. This affords no assistance to a jury.