The Judge's Lament

Mr. Justice Frank Muldoon states:

> A judge unschooled in the arcane subject is at difficulty to know which of the disparate, solemnly-mouthed and hotly contended scientific verities is, or are, plausible. Is the eminent scientist expert with the shifty eyes and poor demeanour the one whose "scientific verities" are not credible? Cross-examination is said to be the great engine for getting at the truth, but when the unschooled judge cannot perceive the truth, if he or she ever hears it, among all the chemical and other scientific baffle gab, is it not a solemn exercise in silliness?

Unilever PLC v. Proctor & Gamble (1993), 47 C.P.R. (3d) 479 (FCTD), at p. 488.

How Not to Judge Science

It can be seen that Crown counsel was inviting the jury to determine a question of science on the basis of their impression of the demeanour of the witnesses.

R. v. Medvedew (1978), 43 C.C.C. (2d) 434 (Man. C.A.) at 440.

Law is About Dispute Resolution

Mr. Justice Samuel Grange states:

> I cannot await the research. I am charged to find the cause of death of thirty-six children. Obviously toxicologic information is important. I must accept the best information available at least if it is not seriously challenged in the present state of science. I may eventually be proven wrong because the toxicologic evidence upon which I in part based my conclusion may be proved wrong or inadequate [but] that is how I interpret obedience to my mandate.

Report of the Royal Commission Into Certain Deaths at the Hospital for Sick Children Toronto (The Grange Inquiry) (1984) at pp. 29-30.

When Is Opinion Evidence Admissible?

The exclusionary rule

- all relevant evidence is admissible unless excluded by a rule of policy or law

- witnesses are generally limited to testifying about their observations without inferences or opinions (which are the province of the judge or jury)

- therefore opinion evidence is generally excluded

The Basis of Admission of Expert Evidence

qualified persons may express opinions on matters with respect to which the ordinary person is unlikely to appreciate the facts due to their technical nature or to form a correct judgment without the assistance of persons with special knowledge.

R. v. D.D., [2000] 2 S.C.R. 275 at para 47.

Legal Concerns About Expert Evidence

- usurpation of the role of the jury: "attornment to the opinion of the expert"
- concern about "... human fallibility in assessing the proper weight to be given to evidence cloaked under the mystique of science" (*R. v. Beland*, [1987] 2 S.C.R. 398 per La Forest, J. at 434)
- often based on academic literature and out of court sources which are not sworn and not available for cross-examination
- time consuming and expensive
- unreliable expert evidence has contributed to wrongful convictions
- blame it on "junk science"

Admissibility Based on Consensus Among Scientists

Frye Test (1923) « generally accepted in the particular scientific community to which it belongs »

- "normal" science also includes much "junk": contested or "risky" theories, assumptions, conventions & "constructs", conjectures and speculations

The Judge Becomes a Gate-Keeper

> We recognize that, in practice, a gate keeping role for the judge, no matter how flexible, inevitably on occasion will prevent the jury from learning of authentic insights and innovations. That, nevertheless, is the balance that is struck by the Rules of Evidence designed not for the exhaustive search for cosmic understanding but for the particularized resolution of legal disputes.

Daubert v. Merell Dow Pharmaceuticals 113 S.Ct. 2786 (1993) (U.S. Supreme Court)

Scientific Validity v. Scientific Consensus

J.-L.J. adopted the 4 "*Daubert*" factors as "ones that could be helpful in evaluating the soundness of novel science" (at para 33):

1. whether the theory or technique can be and has been tested?

2. whether the theory or technique has been subjected to peer review and publication?

3. the known or potential rate of error or the existence of standards;

4. whether the theory or technique has been generally accepted?

R. v. J.-L.J., [2000] 2 S.C.R. 600

More Judge's Lament

Judge Alex Kozinski, U.S. Court of Appeals for the Ninth Circuit following remand of *Daubert* by the Supreme Court. 43 F.3d 1311, 1316 (9th Cir. 1995)

> "Our responsibility, then, unless we badly misread the Supreme Court's opinion, is to resolve disputes among respected, well-credentialed scientists about matters squarely within their expertise, in areas where there is no scientific consensus as to what is and what is not 'good science,' and occasionally to reject such expert testimony because it was not 'derived by the scientific method.' Mindful of our position in the hierarchy of the federal judiciary, we take a deep breath and proceed with this heady task."

Refining the Rules of Admissibility

- The four part *Mohan* test

    1. Relevance
    2. Necessity in assisting the trier of fact
    3. Absence of any exclusionary rule
    4. Properly qualified expert

R. v. Mohan, [1994] 2 S.C.R. 9.

Expert Tips on How to Lose Credibility

- Listen, Your Honour, we have to understand that if we start – normally we do not submit the psychological tests in detail or the curves because at that point if we start calculating everything in centimetres or millimetres, we will be here all morning. Let's just say that this curve, properly analysed, demonstrates the following results, that there are no, according to how those curves are normally evaluated, there are no signs of deviant behaviour in him.

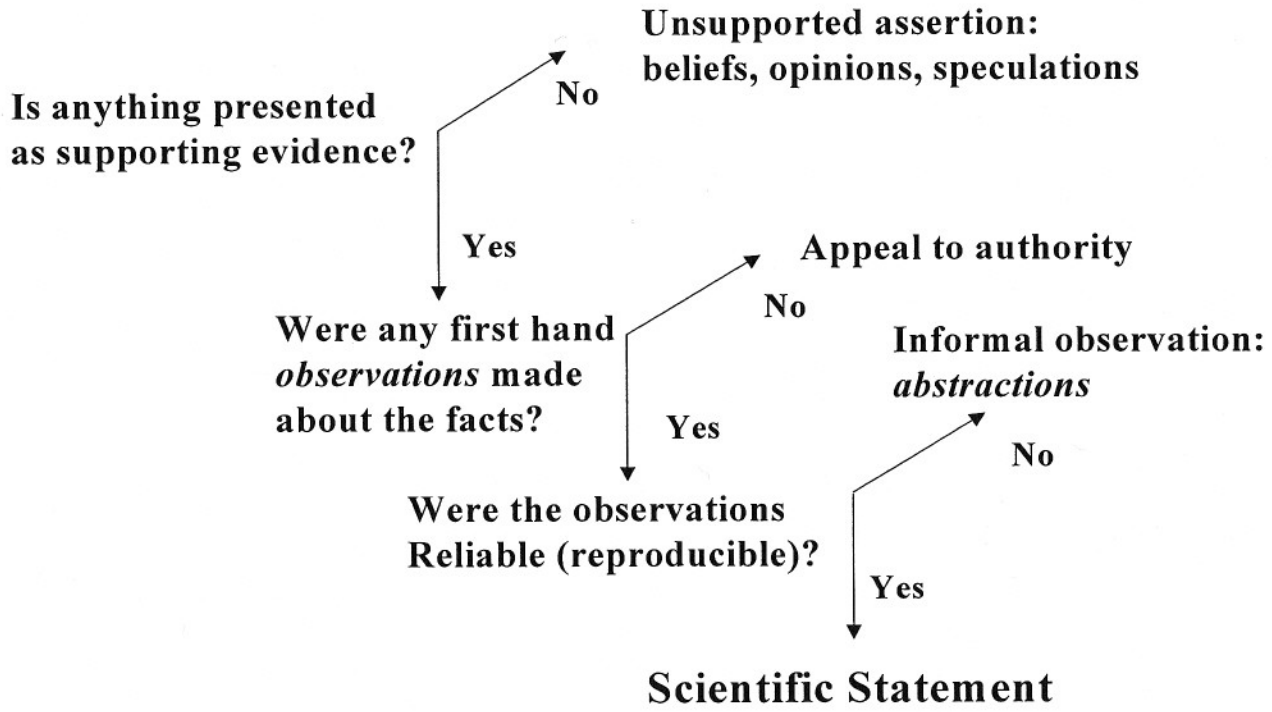
- Okay. But it is not normally produced because otherwise, it would be too complicated to produce all the details, there would be battles over the little details.

R. v. J.-L.J., [2000] 2 S.C.R. 600

Frontier Science: Brain Fingerprinting?

Brain Fingerprinting is designed to determine whether an individual recognizes specific information related to an event or activity by measuring electrical brain wave responses to words, phrases, or pictures presented on a computer screen. The technique can be applied only in situations when investigators have a sufficient amount of specific information about an event or activity that would be known only to the perpetrator and investigator. Brain Fingerprinting is considered a type of Guilty Knowledge Test. Only the guilty party is expected to react strongly to the relevant details of the event or activity. An investigator would be able to use this information as evidence for or against a suspect. For example, the technique could be used to determine whether a suspect has knowledge of details connecting him or her to a crime.

Is it Science?



Paul C. Stern, *Evaluating Social Research*, Oxford, 1979

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