

Will “Brain Fingerprinting” be Admissible in Canada: Revisiting Canadian Polygraph Jurisprudence after *Mohan*

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1. Abstract

In 1978 in the case of *R. v. Phillion* the Supreme Court of Canada rejected the use of polygraph lie detection as admissible evidence on the grounds that such evidence violated the rule against oath-helping. Since the development of the polygraph, a series of new techniques have been developed that rely on neuroscience techniques to evaluate the reliability of an individual's statements. MRI lie detection relies on the observation that individuals concocting a lie generate particular patterns of brain activity. MRI lie detection appears to be an outgrowth of mainstream neuroscience. Another technique, termed brain fingerprinting, is based upon the association of a particular brainwave pattern with the retrieval of memory, and it therefore claims to detect a person's access to a memory. Brain fingerprinting is the product of a particular group of entrepreneurs.

This paper compares the claims made by advocates of brain fingerprinting and MRI lie detection to the earlier claims of polygraph examiners. By comparing these examples, we can see how forensic scientists modify their claims to try and ensure the acceptance of their techniques in the courtroom. This process illustrates how forensic science is as much a product of the courts and the entrepreneurship of their advocates as it is a process of scientific development. We can also see how the peculiarities of the *Phillion* decision make the acceptance of the more mainstream scientific technique unlikely, an outcome that would appear to be at variance to the aim of securing reliable information in legal decision making.

2. Policy Problem

How can law develop a coherent approach to novel technologies that claim the ability to determine the reliability of witness testimony?

3. Key Terms

Law and science
Science policy
Science and technology studies
Actor network theory
R. v. Mohan
Polygraph
Brain-fingerprinting

4. Research Objectives and Methodology

This research combines traditional legal scholarship with an actor network theory approach to understanding the use of science and technology in the courts.

The aim of this research was to examine the Canadian approach to polygraph evidence in light of more recent decisions in the area of scientific evidence and the appearance of new techniques that may supplant the polygraph as lie-detection instruments.

5. References

R. v. Phillion, [1978] 1 S.C.R. 18; (1975), 5 O.R. (2d) 656 (Ont. CA); [1975] 2 O.R. 209 (Ont. QB).
R. v. Mohan, [1994] 2 S.C.R. 9

The Supreme Court of Canada's Junk Science: *R. v. Askov* and the Manipulation of Statistical Data by the Supreme Court of Canada

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1. Abstract

Is it possible, then, that the judicial use of scientific evidence could progress from the evaluation and use of scientific evidence to the actual manipulation of scientific data in the courtroom? If so, would the results of such manipulation constitute a form of "junk science?"

In the case of *R. v. Askov*, the Supreme Court of Canada appears to have done exactly that, going so far as to perform a meta-analysis of data submitted to it. They did so in response to a doctrinal approach that required data that were not otherwise available to the Court. This paper argues that this is indeed a form of junk science, and one that can be avoided by providing to courts the kind of data they need in their decision-making.

2. Policy Problem

The quality of Canadian courtroom analysis of scientific evidence.

3. Key Terms

Law and science
Science policy
Science and technology studies
R. v. Askov

4. Research Objectives and Methodology

This research combines a case study of a single decision of the Supreme Court of Canada with an actor network theory approach to understanding the use of science and technology in the courts.

5. References

R. v. Askov (1990), 75 O.R. (2d) 673