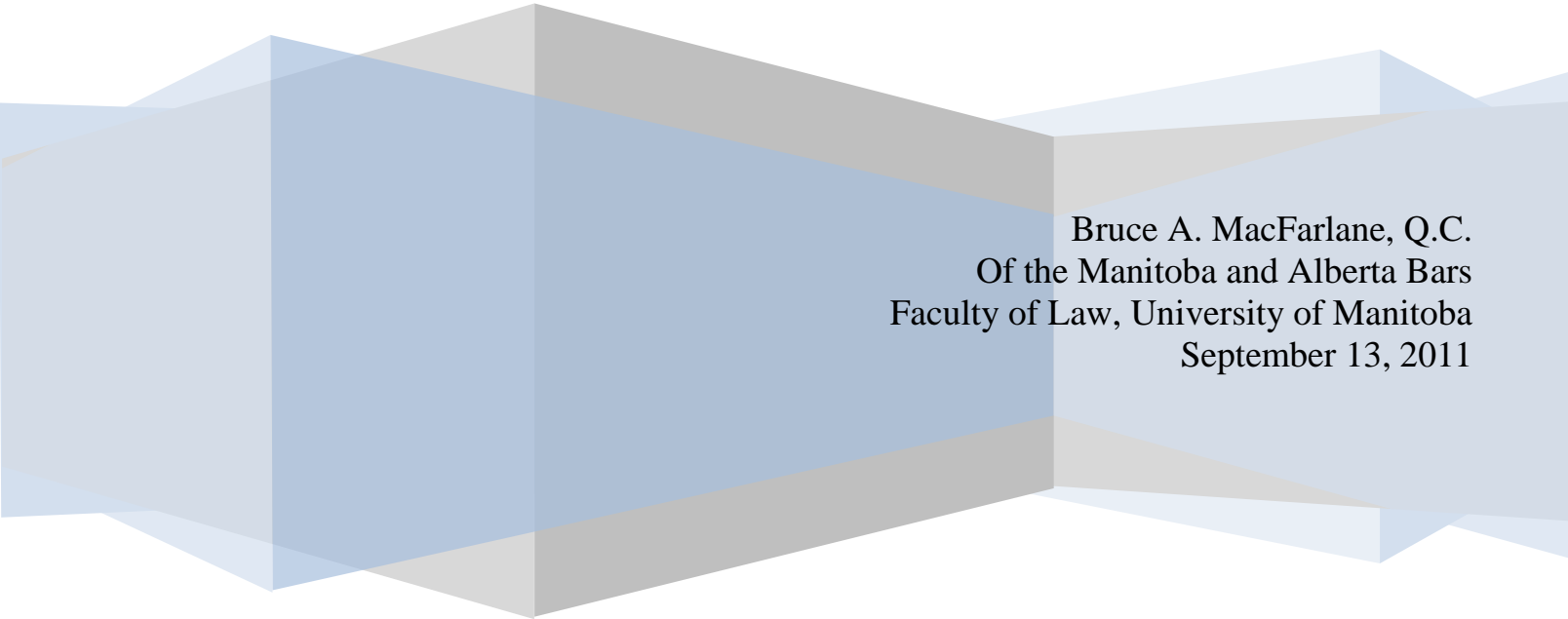


Wrongful Convictions: Determining Culpability When the Sand Keeps Shifting



Bruce A. MacFarlane, Q.C.
Of the Manitoba and Alberta Bars
Faculty of Law, University of Manitoba
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Part I: Defining the Issue

The intersection of law with forensic science and medicine is not always an easy one. Trial processes seek facts, certainty and finality. Forensic science and medicine, on the other hand, provide an opinion, sometimes nuanced, which may change as professional views become more refined, or are completely overtaken with the emergence of new technologies.

In the last decade, it has become painfully clear that flawed scientific evidence has contributed to the conviction of persons who were innocent of the crimes with which they were charged. Indeed, recent studies suggest that flawed forensic science is the second leading cause of wrongful convictions – acting as a contributing factor in half of the cases in which inmates have been exonerated through DNA testing.¹

How can this be? After all, these are the men and women in white lab coats who tirelessly pursue justice through independent, truth-seeking scientific and medical processes. What has happened? Has science and medicine failed to live up to the standards demanded by the courts, and expected by the public? Or have we expected too much?

In this essay, I will describe what forensic science is, and outline its limitations. I will then examine the experience of several of the forensic sciences, including forensic pathology, in Canada and the UK. I will conclude with a discussion of whether and to what extent criminal cases which rely heavily on forensic science, particularly pathology, can ever be considered “over”, and final.

¹ The Innocence Project, affiliated with the Benjamin N. Cardozo School of Law at Yeshiva University, on the basis of the first 232 persons in the U.S. exonerated through post-conviction DNA testing. At the time of writing, August, 2011, there have been 273 post-conviction exonerations in the U.S:

http://www.innocenceproject.org/Content/National_Academy_of_Sciences_Urges_Comprehensive_Reform_of_US_Forensic_Sciences.php

While the statistics in Canada and elsewhere tend to be more anecdotal than systematic, it is clear that flawed forensic evidence has played a significant role in other countries: in Canada: Morin: (hair and fibre played a major role); Lamer Commission (forensic practices); Driskell (hair microscopy); Goudge Inquiry (pathology). In Australia, the Royal Commission of Inquiry into Chamberlain Convictions (1987) (blood analysis); in New Zealand, the Royal Commission to Inquiry into the Convictions of Arthur Allan Thomas (1980) (bullets and rifling), and in the U.K., a series of tragic wrongful convictions due to faulty if not malicious pathology. I have described several of these cases, along with equally disconcerting miscarriages of justice involving alleged IRA sympathizers in the UK in: “Convicting the Innocent: A Triple Failure of the Justice System, (2006), 31 *Man. L.J.* 403 at pp. 417 – 421 and 454 - 465

Part II: The Forensic Sciences

The National Institute of Justice defines forensic science as “the application of scientific knowledge to the legal system.”² The American Academy of Forensic Services takes the matter one step further, describing the *role* of the forensic scientist: “The single feature that distinguishes forensic scientists from any other scientist is the certain expectation that they will appear in court and testify to their findings and offer an opinion as to the significance of those findings. The forensic scientist will testify not only to what things are, but to what things mean. Forensic science is science exercised on behalf of the law in the just resolution of conflict”.³

The roots of the forensic sciences can be found in Europe. In 1898 Hans Gross, an investigating magistrate and professor of criminology at the University of Prague, published a book that described the need for a scientifically trained investigator who could undertake certain technical aspects of an investigation.⁴ “Criminalistics”, as it became known, evolved into the “recognition, collection, identification, individualization and interpretation of physical evidence, and the application of the natural sciences to law-science matters”.⁵

In practical terms, the forensic sciences now encompass an extraordinarily wide range of scientific activities: forensic biology (in DNA analysis); forensic chemistry; forensic toxicology; forensic microscopy; the analysis of controlled substances, fire debris, explosive residues, hairs, fibers, glass, soil, paint, as well as the examination of impressions such as fingerprints, footwear, tire tracks and tool marks. In more recent years, it has also encompassed document examination, crime scene reconstruction as well as forensic pathology and medico-legal death investigation.⁶

Red flags have recently been raised about the accuracy and probative value of the forensic sciences in court. One author has put it this way:⁷

Forensic science is multidisciplinary, encompassing a wide spectrum of subspecialties that are steeped in the traditional sciences, yet it is criticized for being a renegade field that is more fringe than fundamental in terms of practices reflecting validated methods and original research that yields empirical data.

I will next consider whether and to what extent it is fair to label the forensic sciences as a “renegade field” that lacks credibility.

² Kelly M. Pyrek, *Forensic Science Under Siege* (New York: Elsevier Academic Press, 2007), at p. 4.

³ *Ibid.*, at p. 4.

⁴ *Ibid.*, at p. 4.

⁵ *Ibid.*, at p. 4.

⁶ *Ibid.*, at p. 4-5.

⁷ *Ibid.*, at p. 5.

Part III: Reliability of the Forensic Sciences

Historically, forensic science and forensic medicine have developed and evolved in support for the state's legal and court system. Gary Edmond, a legal expert from Australia who testified at the Goudge Inquiry into Pediatric Forensic Pathology in Ontario (2008),⁸ contends that the expertise that has arisen in this field "...ha[s] evolved in a symbiotic relationship with the criminal justice system."⁹ Significantly, he adds: "From the judicial perspective that relationship has been characterized by trust rather than scrutiny or accountability".¹⁰ Edmond explains:¹¹

Common-law judges have often preferred to rely on earlier decisions and legal commentary than undertake a review of the validity or accuracy of widely used and presumptively admissible techniques and theories. With the continuing support of the state and legal institutions, forensic scientific and medical practice have been relatively sheltered from serious scrutiny and the need to test their techniques.

Edmond further argues that forensic evidence is often based on intuition, speculation and anecdotal experiences – a formula which makes it very difficult for the defence to challenge the expert's testimony, and the judiciary to evaluate it. He makes the point in this way:¹²

Historically, forensic science and medicine have relied upon "art" and "experience" in addition to experimental techniques. Where forensic pathologists, or other forensic scientists and technicians, rely upon their experience at trial, they create pronounced difficulties. They produce opinions that may be practically difficult to assess. Unless the expert has been formally censured, is known to have made errors in the past, or his or her opinion is wildly speculative, implausible, or obviously outside their previous experience, it can be incredibly difficult for the defence to meaningfully challenge the expert's evidence.

One of the primary goals of our criminal trial process is truth-seeking.¹³ If Edmonds is correct, do the historical roots of forensic science, coupled with a lack of sufficient judicial control and

⁸ Mr. Edmond is a professor of law at the University of New South Wales in Sydney, Australia. He is an evidence scholar with a background in science, and a leading commentator on the interaction between science and law.

⁹ Gary Edmond, "Pathological Science? Demonstrable Reliability and Expert Forensic Pathology Evidence", a paper presented to the Goudge Inquiry into Pediatric Forensic Pathology in Ontario (Volume 2 of Independent Research Studies, Kent Roach, Director of Research, 2008), at p. 101, published on the Inquiry's website at:

http://www.attorneygeneral.jus.gov.on.ca/inquiries/goudge/policy_research/pdf/Edmond_Paper.pdf

¹⁰ *Ibid.*, at p. 101.

¹¹ *Ibid.*, at p. 102.

¹² *Ibid.*, at p. 103; the Supreme Court of the United States made a similar observation, broadening it to expert evidence generally: "[e]xpert evidence can be both powerful and quite misleading because of the difficulty in evaluating it: *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 at 595 (1993).

¹³ *R v. Grant*, [2009] 2 S.C.R. 353; *R v. Last*, [2009] 3 S.C.R. 146; *R v. Harrison*, [2009] 2 S.C.R. 494; *R v. Darrach*, [2000] 2 S.C.R.443; *R v. Levogiannis*, [1993] 4 S.C.R. 475.

increased reliance on this type of evidence in hi-profile or razor-thin Crown cases raise the risk of distorted decision-making and wrongful convictions? Can the “symbiotic relationship” suggested by Edmond lead to an unacceptable alignment between forensic scientists, the police, and prosecutors? Edmonds suggests that the risk of miscarriage is raised, and seems to agree that this specialty area may indeed be a “renegade” field:¹⁴

[...] forensic medicine and the forensic sciences seem to have operated outside or at the margins of mainstream biomedical and scientific research. To some extent their operations are a function of the expectations placed upon them by police and investigative agencies, the reluctance of courts to impose more appropriate standards, as well as the types of cases and issues forensic experts are required to investigate. The professional marginalization of forensic science and medicine is also a result of the historical unwillingness of governments to adequately resource and regulate them. The close relations between forensic scientists, investigators, police, and prosecutors seem to have fostered a range of pro-prosecution orientations and sympathies. In conjunction with unexplicated judicial confidence, these commitments have contributed to a state of affairs that may be undesirable in a system concerned with truth and justice.

In 2009, the National Academy of Sciences in the United States delivered a stinging report on that nation’s forensic science system, calling for major reforms and new research. The report cannot be ignored: it was prepared by a seventeen-person, multi-disciplinary committee consisting of senior judges, medical examiners, academics from legal and scientific fields, an independent attorney, as well as forensic, standards and statistical experts.¹⁵ It’s most important message was a simple one: forensic evidence is often offered in criminal prosecutions and civil litigation to support conclusions about individualization – in other words, to “match” a piece of evidence to a particular person, weapon, or other source. “But with the exception of nuclear DNA analysis, no forensic method has been rigorously shown able to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source”.¹⁶ The Academy noted that non-DNA forensic disciplines have important roles, but many need substantial research to validate basic premises and techniques, assess limitations and determine the sources and magnitude of error.

¹⁴ Supra, footnote 9, at p. 102 (Edmond).

¹⁵ The National Academy of Sciences is a society of distinguished scholars engaged in scientific and engineering work dedicated to advance the public interest. It was established by an Act of Congress in 1863, and since then political leaders and policy makers in the United States have turned to it for advice on the scientific and technological issues that frequently pervade public policy decisions. The Academy’s membership is composed of approximately 2,100 members and 380 foreign associates, of whom nearly 200 have won Nobel Prizes. Members are elected on the basis of their distinguished research; election to the Academy is considered one of the highest honors that can be given to a scientist or engineer:

http://www.nasonline.org/site/PageServer?pagename=ABOUT_main_page

¹⁶ *Strengthening Forensic Science in the United States: A Path Forward* (2009), summarized at :

<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RECORDID=12589>

Does this, then, explain how forensic science has led the criminal justice system astray in a number of common-law based jurisdictions over the past few decades? The starting point in the assessment of this issue is in the U.K., in the wake of a horrific bombing campaign conducted by the I.R.A. during the 1970s that led to a number of tragic miscarriages of justice during the 1980s.

a) Forensic chemistry: IRA bombings in Britain

On “Bloody Sunday” (30 January 1972), British paratroopers killed 13 unarmed Catholics during a peaceful civil rights march in Londonderry. On 21 July 1972, the IRA rocked Belfast with 22 bombs in 75 minutes, leaving nine dead and 130 injured. A politically fueled bombing campaign ensued during the next decade, with 3,637 lives lost in what the Irish now refer to as “The Troubles”.

This was not, however, just an issue of statistics. Most of those killed were civilians: mothers, fathers, shoppers, pub-goers and children. The public was outraged and frightened. In many minds, the IRA had become “Public Enemy Number One”. It was from this pool of citizens that forensic scientists and police investigators would be selected to investigate IRA bombings over the next several years.

i) The Birmingham Six

Five weeks after a horrific bombing at Guildford, two further explosions occurred at pubs in Birmingham in the British Midlands. Twenty-one people were killed, and 162 were injured.

Six Irish Catholic men were charged with 21 counts of murder, convicted by a jury, and spent 16 years in jail before being freed by the Court of Appeal in 1991¹⁷. On behalf of the court, Lloyd L.J. noted that on the basis of the evidence led at trial, the case against the men was convincing. Nonetheless, two parts of the evidence were particularly suspect: scientific evidence concerning bomb traces, and the police interviews. The forensic evidence was clearly in doubt, the court concluded, and several of the police investigators “were at least guilty of deceiving the court”.¹⁸

ii) Maguire Seven

Science continued to come under the microscope in further IRA prosecutions that resulted in wrongful convictions. The Maguire Seven, a family led by Annie Maguire, were imprisoned in 1976 for possessing explosives. In the wake of the release of the so-called “Guildford Four” in October 1989 and calls for the review for the Birmingham Six, a report by former appeals judge John May persuaded the Home Secretary that there had been a miscarriage of justice in the

¹⁷ *R v. McKenny* (1991), 93 Cr. App. R. 287 (C.A.).

¹⁸ *Ibid.*, at p. 318

Maguire case. In July 1990, he referred the matter to the Court of Appeal; all seven of the convictions were overturned in June 1991.¹⁹

The Maguire Seven had been accused of running an IRA bomb factory in North London in the mid-1970s. Scientific evidence had played a pivotal role at trial. Crown evidence suggested that there had been traces of nitroglycerine on the accused's hands and gloves. The Court of Appeal concluded that they may have been implicated through innocently touching a contaminated towel. Lord Justice McCowan said:

The evidence does not enable us to conclude who the person or persons were who so contaminated the towel or the gloves. On the ground that the possibility of innocent contamination cannot be excluded, *and on this ground alone*, we think the convictions of the appellants are unsafe and unsatisfactory.²⁰

Others, however, thought differently. Brian Ford, a leading scientist, openly questioned whether there had been a closing of ranks, and expressed concern that the Crown scientists had been operating a state-run service to secure convictions, rather than offering independent scientific expertise.²¹ He may have been right; the IRA saga was about to get even worse.

iii) Judith Ward

Judith Ward was convicted in 1974 of 12 counts of murder and three charges of causing an explosion. In three separate incidents, bomb explosions, thought to be the work of the IRA, had caused considerable damage and loss of life. The case for the Crown rested on confessions Ward made to the police and expert evidence from government scientists that traces of nitroglycerine had been found on her. She was sentenced to life in prison, and appealed neither conviction nor sentence.

Seventeen years later, the Home Secretary referred her case to the Court of Appeal for a reassessment. It was said that she suffered from a mental disorder that explained her statements to police. It was also contended that both the police and prosecution had failed to disclose evidence that would have affected the course of the trial.

The most serious contention concerned the scientific evidence. It was alleged that supposedly neutral scientists had deliberately supported the prosecution's efforts to convict Ward and had

¹⁹ *R v. Maguire & Ors.* (1992), 94 Cr. App. R. 133

²⁰ *Ibid.* [emphasis added]

²¹ <http://www.sciences.demon.co.uk/aforencsc.htm> (last accessed August 6, 2011).

suppressed evidence favorable to the defence. In the end, the conclusions of the Court of Appeal were even more serious than that.

Glidewell J., on behalf of the unanimous court, concluded that three senior government scientists called as Crown witnesses at trial had deliberately misled the court; that they had done so in concert; and that they had taken “the law into their own hands, and concealed from the prosecution, the defence and the court, matters which might have changed the course of the trial.” His assessment of the conduct of these three scientists was searing:²²

For the future it is important to consider why scientists acted as they did. For lawyers, jurors and judges a forensic scientist conjures up the image of a man in a white coat working in a laboratory, approaching his task with cold neutrality, and dedicated only to the pursuit of scientific truth. It is a sombre thought that the reality is sometimes different. Forensic scientists may become partisan. The very fact that the police seek their assistance may create a relationship between the police and the forensic scientists. And the adversarial character of the proceedings tend to promote this process. Forensic scientists employed by the government may come to see their function as helping the police. They may lose their objectivity. That is what must have happened in this case.

Appellate courts generally confine their conclusions to the facts of the case and rarely outline the lessons learned from the evidence. But that is precisely what the Court of Appeal did in this case. Asking what lessons can be learned from this miscarriage of justice, Justice Glidewell noted the importance of balancing the need to reduce the risk of conviction of the innocent with the public interest in avoiding a multiplicity of rules that merely impede effective law enforcement. In his view, there were two lessons learned. The first centered on the fact that the expert witnesses had become partisan.²³

First, we have identified the cause of the injustice done to Miss Ward on the scientific side of the case as stemming from the fact that three senior forensic scientists at RARDE regarded their task as being to help the police. They became partisan. It is the clear duty of government forensic scientists to assist in a neutral and impartial way in criminal investigations. They must act in the cause of justice. . . . Secondly, we believe that the surest way of preventing the misuse of scientific evidence is by ensuring that there is a proper understanding of the nature and scope of the prosecution’s duty of disclosure.

Roger Cook, an English forensic scientist who later testified before a royal commission in Canada, noted that this case caused “tidal waves” in the international forensic community.²⁴

²² *R v. Ward*, [1993] 2 All E.R. 577 (C.A.)

²³ *Ibid.*

²⁴ *The Commission on Proceedings Involving Guy Paul Morin*, The Honorable Fred Kaufman (Ontario Ministry of the Attorney General, 1998), Volume 1, p. 268 (and see p. 97). Also available online: <http://www.attorneygeneral.jus.gov.on.ca/english/about/pubs/morin/>

iv) Conclusions: the IRA cases

The legacy of the IRA bombing cases is three-fold. First, the cases demonstrate that the “hydraulic pressure” of public opinion²⁵ is capable of creating an atmosphere in which state authorities seek to convict someone despite the existence of ambiguous or contradictory evidence. Second, scientists working in government-operated laboratories may tend to feel “aligned” with the prosecution, resulting in a perception that their function is to support the theory of the police rather than to provide an impartial, scientifically-based analysis. This, in turn, raises issues concerning the physical location and reporting relationship of government or police forensic laboratories. Finally, scientists relied upon by the Crown have an obligation to disclose to the prosecution evidence of any tests carried out which tend to cast doubt on the opinion proposed to be tendered in evidence, and the prosecution bears a parallel and continuing obligation to disclose those facts to the defence—irrespective of whether the defence has made a request for such disclosure. The first two of these lessons, at least, should have been heeded in Canada – but evidently were not, leading to a string of wrongful convictions in Canada twenty years later. I will discuss that development in more detail later on in this essay.

Forensic chemists are not the only ones who have led the criminal justice system astray in the past while.

b) Forensic Microscopy: Hair Comparisons

In its simplest terms, forensic microscopy involves the side-by-side comparison, under a microscope, of a “known” substance, often strands of hair taken from a suspect, to other strands of hair, the “questioned” hair, taken from the crime scene. The object is to see if the two groups came from the same source. The probative value, it is argued, is simply this: the suspect must have been at the crime scene, often in the face of repeated denials by that person. Law enforcement agencies throughout North America regularly used this comparative procedure as an investigative tool, because hairs are so commonly and readily transferred to skin or clothing. Prosecution services sometimes used the results of the comparison in support for resulting criminal prosecutions. Hair microscopy faded from prominence during the early 1990s with the advent of DNA technology—at least on the court side.

For reasons I will now examine, hair microscopy probably yielded nothing more than an educated guess.²⁶ Its probative value was slight, the prejudicial effect on the conduct of the trial

²⁵ To use that wonderful expression from *Payne v. Tennessee*, 501 U.S. 808 at 868 (1991), quoting Oliver Wendell Holmes’s famous statement in a dissenting judgment in *Northern Securities Co. v. U.S.*, 193 U.S. 197 at 400–401 (1904).

²⁶ To adopt the phrase used consistently in the following appellate decisions: *R v. Ranger* (2003), 178 C.C.C. (3d) 375 (Ont. C.A.) at para. 82; *R. v. Clark* (2004), 182 C.C.C. (3d) 1 (Ont. C.A.) at paras. 78-79; *R v. Klymchuk* (2005), 203 C.C.C. (3d) 341 (Ont. C.A.) at paras. 33-37.

was significant, and its use ought to have been confined to investigations, and not extended into the courtroom.²⁷

The modern critique of hair microscopy evidence, at least in Canada, starts with the Commission of Inquiry into the Proceedings Involving Guy Paul Morin.²⁸

On October 3, 1984, Christine Jessop, a nine-year old girl, was murdered. Suspicion immediately fell on her next-door neighbor, Guy Paul Morin. In short order, he was charged with her murder.

The case was entirely circumstantial. Amongst other things, the Crown relied on hair comparisons to demonstrate that there had been physical contact between Christine Jessop and the accused, and that Christine had been transported in Morin's car to her death. This evidence was said to refute the accused's denial that he had not had any contact with Christine, and that she had never been in his car.

When Christine's body was discovered, a single dark hair was found embedded in skin tissue adhering to her necklace. This hair was not Christine's, and was presumed to have come from her killer. On microscopic analysis, experts concluded that the hair "could have originated" from Morin. Three hairs found in Morin's car were likewise said to be dissimilar to the accused's hairs; experts contended that they were similar to Christine's hairs, and "could have" come from her.

After multiple trials and appeals, Morin was acquitted in 1995 on the basis of fresh DNA evidence tendered jointly by the Crown and the defence. Ontario called a public inquiry to find out what had happened, and appointed The Honorable Fred Kaufman, a former judge of the Quebec Court of Appeal, to preside over the Inquiry. The hair comparison evidence played a significant role in Commissioner Kaufman's conclusion that Morin had been wrongly convicted. He cited three central concerns:

- a) Hairs are not unique, and the assessment of the similarities, differences and importance of hair characteristics is highly subjective. The comparison of hairs cannot yield a conclusion that a particular person was the donor of an "unknown" hair;²⁹

²⁷ Even if the test for admissibility of expert evidence is met, a trial judge may reject the proffered evidence if its prejudicial effect on the conduct of the trial outweighs its probative value: *R. v. D.D.*, [2000] 2 S.C.R. 275, 148 C.C.C. (3d) 41, at para. 11. I will turn to this later on in this section, but the Ontario Court of Appeal has powerfully observed that evidence amounting to nothing more than an 'educated guess' "... can play a valuable role in the investigation of crime by directing the police to fruitful areas of investigation. They cannot, however, be admitted as evidence under the guise of expert opinion": *R v. Klymchuk* (2005), 203 C.C.C. (3d) 341 at para. 37.

²⁸ The Commission on Proceedings Involving Guy Paul Morin, The Honorable Fred Kaufman (Queens Printer for Ontario, 1998), also available through the website for the Ministry of the Attorney General: www.gov.on.ca/ATG/morin

- b) The strongest conclusion that can be drawn is that a hair is “consistent with” having come from a particular source. The second strongest conclusion is that a hair “could have” come from a particular source, and an even weaker conclusion is that a particular hair “cannot be excluded” as having come from the same source. None of these conclusions identifies the source of the unknown hair. The nuances developed by scientists in this area are easily miscommunicated and misapprehended by lay triers of fact; and, in this case, the language used contributed to Morin’s wrongful conviction;³⁰
- c) The experts failed to adequately communicate the limitations upon their findings to both the prosecutors and the court;³¹

In this circumstance, Commissioner Kaufman noted cautionary words from the Supreme Court of Canada to the effect that expert evidence can easily be misused and distort the fact-finding process. Famously, that court had said:³²

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 having more weight than it deserves.³³

In the result, Commissioner Kaufman recommended that trial judges should: undertake a more critical analysis of hair comparison evidence, and where it only shows that an accused cannot be eliminated, exclude the evidence;³⁴ if admitted, charge the jury that it should not be overwhelmed by any aura of scientific authority or infallibility of the evidence, and explain the limitations should be applied to the expert’s findings;³⁵ and not permit experts to use demonstrably misleading language such as “consistent with” and “match” in the context of forensic hair comparisons.³⁶

The indictment of forensic microscopy didn’t stop there. Fast forward 7 years, this time in Manitoba. James Driskell was charged, convicted and imprisoned 13 years for first degree

²⁹ Ibid., Morin, at p. 88

³⁰ Ibid., at p. 88-89; 101-110.

³¹ Ibid., at p. 103

³² Ibid., at p. 317

³³ *R v. Mohan* (1994), 89 C.C.C. (3d) 402 (S.C.C.) at p. 411.

³⁴ Ibid, Morin Inquiry, supra footnote 24, recommendation 2 at p. 45 of the Executive Summary and p. 311 of the Report.

³⁵ Ibid, recommendation 5 at p. 46 of the Executive Summary and p. 328 of the Report.

³⁶ Ibid, recommendation 9 at p. 47 of the Executive Summary and pp. 338-343 of the Report. As to the probable origins of these terms, see footnote 41, *infra*.

murder – a crime for which a retired Chief Justice from Ontario ultimately concluded he had been wrongfully convicted.³⁷

In 1990, Driskell was charged with the murder of Perry Dean Harder. The case for the Crown was largely circumstantial, but was contaminated with unsavory witnesses, inexplicable non-disclosure of critical evidence by the prosecutors and police, and an out-of-court physical confrontation between the lead prosecutor and counsel for one of the Crown witnesses. To make matters worse, the prosecution had tendered and relied upon hair comparison evidence that was said to implicate the accused in the offence.³⁸

At trial, the Crown called an RCMP expert, Tod Christianson, to testify with respect to the hair evidence. In 1990-91, Mr. Christianson was one of about five hair and fibre examiners in the Winnipeg Laboratory of the RCMP Forensic Laboratory Services (“RCMP FLS”). He had been a hair and fibre examiner for about seven years (including one year as a trainee), and had worked on almost 470 prior hair and fibre cases. He had presented microscopic hair comparison evidence in 26 previous cases. Seemingly, he had all the qualifications and experience that a prosecutor would want.

Mr. Christianson testified that three of the questioned hairs from the accused’s van (said to have been used in the murder) were microscopically “consistent with” the known hairs attributed to the deceased “within normal range of variation”.³⁹ When asked what he meant by “consistent with”, he provided this explanation:⁴⁰

[W]hen I say that a hair is consistent, as I have in this case, that means that the hairs have *all of the features* that the known samples have, within normal biological variation, and there’s nothing, nothing you would – that you can’t account for. So that if there was some feature, for example abnormal colour or something like that, that would cause that hair to be eliminated. So, it falls exactly within the range of the variation of the known sample with no unaccounted for differences whatsoever.

And the point about this type of analysis is that it’s not a positive identification, all right, because the only way you could do that is to look at all the hairs from all the person’s head that exist, and that’s an impossibility. *But I can tell you, based on my experience, that the chances of just accidentally picking up a hair and having it match to a known sample are very small. So if the hair is consistent, that means it either came from the same person as that known sample or from somebody else who has hair exactly like that* .[emph. added]

³⁷ Report of the Commission of Inquiry Into Certain Aspects of the Trial and Conviction of James Driskell, The Honorable Patrick J. Lesage, Q.C. (Government of Manitoba, 2007), at p. 1, also published at: www.driskellinquiry.ca (last accessed August 8, 2011).

³⁸ *Ibid.*, pp. 146-149.

³⁹ *Ibid.*, pp. 147-148.

⁴⁰ *Ibid.*, p. 150.

Mr. Christianson's evidence at the Driskell trial was in most respects typical of how hair microscopy evidence was presented in Canadian courts during the early 1990's.⁴¹ There were, however, several problems with it. First, his conclusions had not been "peer reviewed" by a second hair examiner, despite that fact that several examiners were available in the same office.⁴² Second, like most other forensic labs at the time, the RCMP FLS did not conduct microscopic hair comparisons "blind" – i.e., the examiner knew something about the police theory of the case, and therefore knew if the police were expecting to find a hair "match".⁴³ Third, Mr. Christianson's evidence was carefully nuanced, but it is doubtful that the jury properly understood the limited probative value of the microscopic observations he made.⁴⁴

And, as it turned out, Mr. Christianson was wrong. Very wrong. Subsequent DNA examination established that there was "extremely strong support for the proposition that the hairs in question did not come from the diseased;" more seriously, the hairs were shown to have originated from *three different persons*.⁴⁵

The scientific sands shifted several times in the case of James Driskell. During his testimony, Mr. Christianson fairly pointed out that the examination did not lead to a positive identification. However, he nuanced that observation by saying that the chance of a coincidental match was very small. Indeed, "he [had] presented his results as highly probative on the issue of identity".⁴⁶

The sands continue to shift, even now. Like Commissioner Kaufman in the Morin Inquiry, Commissioner LeSage in the resulting Driskell commission of inquiry report emphasized that, even at the time of the Driskell prosecution, it was widely recognized in the forensic community that microscopic hair comparisons were (and are) highly subjective, and that different examiners sometimes disagree.⁴⁷ Most seriously, the debate as to the role and usefulness of hair microscopy was raging at the time that it was being used in investigations and court proceedings, and the reality is that the "science" itself had never and still has not been properly validated. Dr.

⁴¹ This was the conclusion reached by Douglas M. Lucas Msc, DSc, the former head of the Centre of Forensic Sciences of Ontario, who had been retained by the resulting Commission of Inquiry into the Driskell case to provide advice on Christianson's lab work and trial testimony: see the Inquiry report, *ibid.*, at pp. 165 and 157. The Lucas report is attached to the Inquiry report: see p. 19 of his report on this point. And it may well be that Mr. Christianson's manner of testifying was reflective of the practice in the U.S. as well. In 1985, the FBI convened a symposium bringing the community of hair comparison analysts together. The purpose of the symposium was to develop and agree upon standards. They agreed: to avoid use of the term "match"; use "consistent with" or "could have" come from the accused; and they agreed not to give evidence about probabilities: Brandon L. Garrett, *Convicting the Innocent* (Cambridge: Harvard University Press, 2011) at p. 99.

⁴² *Ibid.*, [Driskell Inquiry], p. 148.

⁴³ *Ibid.*, pp. 162-163

⁴⁴ *Ibid.*, p. 166

⁴⁵ *Ibid.*, p. 155

⁴⁶ *Ibid.*, p. 161; and see p. 163 to the same effect.

⁴⁷ *Ibid.*, p. 161.

Joel Mayer, an expert called at the Driskell inquiry, pointed out that the forensic community itself had contributed to the problem by putting the cart before the horse:⁴⁸

In fact, when hair microscopy and hair examination was being used by many forensic science laboratories, the debate as to the usefulness and the significance of the findings was still raging on. And that's the wrong way to go about it. That debate should have taken place first, and once there was consensus and agreement, then turn around and employ this technique. So it should have been validated first. Unfortunately, as I look at it, the validation was ongoing while the information was being produced and evidence was given. At the end of the day, is this science?

Commissioner LeSage thought not. He felt that supposed scientific evidence should not be presented in criminal trials as probative on the issue of identity unless the process itself, and the conclusions reached, had a strong empirical and/or theoretical foundation.⁴⁹ Hair microscopy fails that test, as it is fundamentally experience-based, not scientifically anchored.⁵⁰ Indeed, in 2009 the National Academy of Sciences in the U.S. reported that “[n]o scientifically accepted statistics exist about the frequency with which particular characteristics of hair are distributed in the population” and that any effort to link a defendant to hair evidence has “no scientific support”.⁵¹ That being the case, does hair microscopy evidence have any further role in criminal trials, or have the shifting sands consigned it to the forensic scrap-heap? Commissioner LeSage still saw one last legitimate albeit narrow role, post-investigation.⁵²

I agree with the views expressed by the panelists and in the *Morin Inquiry Report* that if hair microscopy evidence remains admissible, any conclusions should be expressed in “exclusionary” rather than “inclusionary” terms (*i.e.*, framed as a statement that the source of the known hairs cannot be excluded as the source of the questioned hairs).

To sum up on the shifting sands of forensic hair microscopy: during the 1970's and 1980's, and into the 1990's, the policing community placed considerable emphasis on hair microscopy. The RCMP, alone, maintained a staff of approximately 35 hair examiners across Canada.⁵³ Prosecution services likewise relied upon it in court, primarily to assist in establishing the identity of the suspect in murder cases. Testimony in court was often nuanced, but “dressed up in scientific language which the jury does not easily understand, and submitted through a witness of impressive antecedents”,⁵⁴ triers of fact inevitably gave the evidence considerable weight.

⁴⁸ *Ibid.*, p. 173

⁴⁹ *Ibid.*, p. 172; to the same effect, see: *R v. Klymchuk*, 2005 CanLii 44167 (ONCA).

⁵⁰ The RCMP examiners handbook suggested that if examiners were asked to explain the basis for their opinion, they should refer to “publications”, “attendance at workshops and seminars”, “discussions with others in the field”, “understudy training”, the “100 hair exercise” and other “proficiency tests”, and their years of casework experience: *ibid.*, p. 168-169.

⁵¹ Report of the National Academy of Sciences, *supra*, footnote 16 and accompanying text, at pp.160-161.

⁵² *Ibid.*, pp. 170, 172, 180-181

⁵³ *Ibid.*, p. 174.

⁵⁴ *R v. Mohan*, discussed *supra* at footnote 33, and accompanying text.

What was not well understood was that at the time the evidence was being tendered in court, there was considerable dispute within the forensic community on whether the evidence was reliable, and how far a witness could go in suggesting that it was probative of critical facts in issue.

The sand started to shift markedly in the early 1990's, with the advent of, and increasing reliance on, DNA, and a trend in the U.S. to *exclude* admission of hair microscopy evidence on the basis that it was simply unreliable.⁵⁵ In 1998 and 2007, two Commissions of Inquiry in Canada demonstrated that hair microscopy evidence involved little more than an educated guess. Around the beginning of the new millennium, DNA re-testing of the results of earlier hair microscopy examinations in four separate Manitoba murder cases showed that in each case, the microscopy examination had been wrong. The sand beach was now bare. Something had to be done, and Manitoba decided to embark upon an unprecedented experiment.

In April, 2003, in my former life as Deputy Minister of Justice for Manitoba, I announced the creation of the Forensic Evidence Review Committee. Multi-disciplinary in nature, the committee was composed of a senior crown attorney as Chair (Richard Saull, now a superior court judge), a defence lawyer designated by the Association in Defence of the Wrongfully Convicted ("AIDWYC"), senior investigators from each of the RCMP and the Winnipeg Police Service, a crown attorney, and a forensic expert from the University of Manitoba with no connection to law enforcement. The mandate was as follows:⁵⁶

The Committee shall examine all cases of culpable homicide:

- prosecuted in Manitoba during the past 15 years;
- in which the Crown tendered and relied upon microscopic hair comparison evidence;
- where the accused pleaded not guilty at trial, asserting factual innocence, but was found guilty; and
- appealed the conviction to the Court of Appeal, still asserting factual innocence, and the appeal was dismissed,

to consider whether there is a reasonable basis to believe that, by virtue of this evidence, a miscarriage of justice has taken place.

Amongst other issues, the Committee shall consider:

⁵⁵ *Williamson v. Reynolds*, 904 F. Supp. 1529 (E.D. Okla. 1995); Clive A. Stafford Smith and Patrick D. Goodman, "Forensic Hair Comparison Analysis: 19th Century Science or 20th Century Snake Oil?", (1996) 27 *Colum. Hum. Rts. L. Rev.* 227; proficiency tests of hair examiners dating back to the 1970's have found very high error rates ranging from 28% to 68%: Barry Scheck et al, *Actual Innocence* (New York: Signet Books, 2001) at p. 210.

⁵⁶ The mandates, and resulting reports, can be found at:
<http://www.gov.mb.ca/justice/publications/forensic/index.html>

1. the nature of the evidence tendered in the context of the trial record;
2. whether, with the benefit of current scientific expertise, the conclusions tendered by the Crown at trial were incorrect
3. the extent to which the Crown relied upon this evidence to prove the case;
4. any comments made by the trial judge concerning the probative value or weight to be given to this evidence;
5. any other factors that may assist in assessing whether a miscarriage of justice has occurred.

In essence, the committee was asked to do a “double check” on murder cases that had been prosecuted in the province during the preceding 15 years, to see if there were any inmates still behind bars who had been convicted, in part or largely, on the basis of hair microscopy evidence. AIDWYC supported the initiative, and attended the public announcement to express its support.⁵⁷ The committee was given one year to report, and was empowered to do any testing it thought necessary to complete the task.

On August 19, 2004 the committee filed its report, which was made public. From an inventory of 175 cases, 136 were eliminated for various reasons (such as an appeal against conviction was allowed). That left 39. The trial transcripts of each of the remaining cases was reviewed, and 37 were eliminated on the basis, for instance, that hair comparison evidence had not been tendered, or the defence had been run on a basis other than factual innocence. Two cases remained.

Both inmates were approached, agreed to provide DNA samples, and with the support of counsel and members of the committee, DNA testing was performed by an accredited lab in the U.S. The results were not surprising. DNA showed that the original microscopy examination had been wrong in both cases. The committee referred both back to Manitoba Justice for review, noting that one of the cases, involving Kyle Unger, should be given priority.⁵⁸

The review process raised some eyebrows. Was it a proper role for the Crown to deliberately seek out potential wrongful convictions? Where does that mandate come from? Isn't the role of the Crown to prosecute crime in an adversarial setting – leaving the interest of accused persons and inmates to be represented and protected by the private bar or Legal Aid? And what if the inmate wanted to be left alone – preferring, instead, life in an institution? This debate goes well beyond the scope of this essay, but suffice it to say that Manitoba Justice took the view that the Crown has a broad role – as “ministers of justice”, to ensure that justice has been done in cases where evidence now recognized as unreliable had been tendered and relied upon by the

⁵⁷ Although, in fairness, it should be noted that AIDWYC would have preferred the scope to be a bit wider. The recommendation advanced by AIDWYC during the Driskell inquiry in support for a national review largely mirrors the mandate prepared by Manitoba: see the Driskell Inquiry report, *supra*, footnote 37, at p. 181.

⁵⁸ Forensic Committee Report, *supra*, footnote 56, at p. 20.

prosecution.⁵⁹ Put another way, the sand had shifted during the past 30 years, and there was a responsibility to do a double check to ensure that no innocent persons had been convicted on the basis of faulty forensic evidence. In his report on the Driskell case, Commissioner LeSage recommended that “a case review similar to that conducted in Manitoba [...] be performed on a national level”.⁶⁰ I understand that is presently underway in all Canadian jurisdictions, with Ontario and British Columbia undertaking the most formal of these reviews.

The postscript on Kyle Unger is this: based on the forensic evidence review, Mr. Unger’s counsel subsequently filed an application to the Minister of Justice for a review of the conviction pursuant to ss. 696.1-696.6 of the Criminal Code. In November 2005, Mr. Unger was granted bail pending the Minister’s decision. On March 11, 2009 the Minister of Justice ordered a new trial on the basis that “there is a reasonable basis to conclude that a miscarriage of justice likely occurred in [his] 1992 conviction”. On October 23, 2009 three important announcements were made: Manitoba’s senior crown attorney advised the court that after a full review of the evidence it had been concluded that “... it would be unsafe to retry Unger on the available evidence”. He advised that the Crown would not be calling any evidence, and the court entered an acquittal. A few hours later, the Minister of Justice for Manitoba announced that no public inquiry into the case would be called, and the province would not be offering any compensation as it was Unger’s own comments that contributed to his conviction. Concurrently, the RCMP announced that they did not intend to re-open the investigation into the murder. The case was over, and Mr. Unger had been freed.

c) Fingerprint examination:

For 100 years, fingerprint evidence has been the “gold standard” of human identification.⁶¹ Its long-standing track record has continually been respected by the judicial and law enforcement communities, and, most importantly, by the public.⁶²

Developed independently by European and British scientists during the latter part of the 19th century, personal fingerprint identification gained widespread acceptance in North America and

⁵⁹ *R v. Regan*, [2002] 1 S.C.R. 297 at paras. 19, 62, 65, 137, 151, 153 and, especially, para. 155 where it is observed that this role is not confined to the courtroom, *but extends to all dealings with the accused*; *Miazga v. Kvello Estates*, [2009] 3 S.C.R. 339 at paras. 7, 47, 88-89; *R v. Stinchcombe*, [1991] 3 S.C.R. 326 at 341; *R v. Nelles*, [1989] 2 S.C.R. 170 at 191; the locus classicus was, of course, provided by Rand, J. in *Boucher v. The Queen*, [1955] S.C.R. 16 at 23.

⁶⁰ Driskell Inquiry report, *supra*, footnote 37, at p. 182.

⁶¹ Sandy L. Zabell, PhD, “Fingerprint Evidence”, 13 *J.L. & Pol’y* 143 (2005) at 143.

⁶² The public were first introduced to the power of fingerprint comparisons in a novel by Mark Twain entitled *Pudd’nhead Wilson and those Extraordinary Twins*, the story of two babies switched after birth, and the uncovering of the illegal act through fingerprinting (Hartford: American Publishing Co., 1894); and see Simon A. Cole, “Twins, Twain, Galton, and Gilman: Fingerprinting, Individualization, Brotherhood, and Race in Pudd’nhead Wilson: <https://webfiles.uci.edu/scole/15.3.02.cole.227-265.pdf>

Europe during the 20th century.⁶³ Accepted as the primary method of identification for law enforcement purposes in Canada in 1908⁶⁴, and judicially in the U.S. as early as 1911⁶⁵, courts tended simply to cite treatises on criminal investigation, or general approval of science, and, eventually, other court decisions, in support for the proposition that the results of a fingerprint examination are admissible and reliable. The following statement by LaForest, J. in 1988, on behalf of the Supreme Court of Canada (8-0), provides a classic example of the thinking in this area as we approached the end of the 20th century.⁶⁶

Fingerprinting is an invaluable tool of criminal investigation because of the ease and rapidity of the process and because it is virtually infallible, no two persons' fingerprints being alike. The quick acceptance of fingerprints by courts in the United States and Great Britain as a convenient and reliable means of identification was later followed in Canada; see *R. v. Bacon* (1915), 11 Cr. App. R. 90; *People v. Sallow*, 165 N.Y.S. 915 (Gen. Sess. 1917); *Pelletier v. Le Roi*, [1952] B.R. 633, at p. 635. Today their scientific reliability and usefulness to the criminal justice system is fully accepted; see Donald Campbell, "Fingerprints: A Review," [1985] *Crim. L. Rev.* 195, at p. 196.

Fingerprints serve a wide variety of purposes in the criminal justice system. These include linking the accused to the crime where latent prints are found at the scene or on physical evidence; determining if the accused has been charged with, or convicted of other crimes in order to decide whether, for example, he should be released pending trial or whether he should be proceeded against by way of summary conviction or indictment; ascertaining whether the accused is unlawfully at large or has other charges outstanding; and assisting in the apprehension of an accused should he fail to appear. As well, fingerprints taken on arrest are used to identify prisoners with suicidal tendencies, sex offenders, career criminals and persons with a history of escape attempts so that they can be segregated or monitored as may appear appropriate.

Fingerprints are also of great assistance in the judicial process. Thus in addition to their utility in positively identifying an accused, they may also assist the Crown in determining the punishment it should seek by revealing, for example, whether the accused is a first offender or otherwise. This, of course, will be of assistance to the court in imposing an appropriate sentence.

These are only some of the more important uses to which fingerprints are put. In brief, they have become an integral part of the criminal justice system at every stage. I should add that they provide advantages to an innocent accused. They may establish that another has committed the crime and they may also ensure that the innocent will not be wrongly identified with someone else's criminal history.

⁶³ G.M. Chayko and E.D. Gulliver, *Forensic Evidence in Canada* (Aurora: Canada Law Book Inc., 1999) at 456-457.

⁶⁴ P.C. 1614, July 21, 1908, *Canada Gazette*, April 7, 1917 at p. 3484.

⁶⁵ *People v. Jennings* (Illinois, 1911) cited in *Forensic Science Under Siege*, Kelly M. Pyrek (New York: Elsevier Academic Press, 2007) at p. 275.

⁶⁶ *R v. Beare*; *R v. Higgins*, [1988] 2 S.C.R. 387, 45 C.C.C. (3d) 57, 1988 CanLii 126 at paras. 21-24, subsequently quoted by the Ontario Court of Appeal when considering the constitutional validity of legislation providing for the taking and continued retention of fingerprints: *R v. Dore* (2002), 166 C.C.C. (3d) 225 (Ont. C.A.).

With the greatest of respect, Justice LaForest made a number of assumptions about fingerprint evidence for which there is little or no evidence in support, namely: no two fingerprints are identical; the process is virtually infallible; and, perhaps more implicitly in his comments, fingerprint identification is a “science” that is reliable and useful, with a corresponding methodology in support.

The sand is now starting to shift. Justice LaForest could not have anticipated two major developments in the first decade of the 21st century: first, well-established national forensic services have recently admitted that they made serious errors in fingerprint identification that have attracted world-wide attention and have shaken the forensic community; second, with the advent of DNA testing as the “new” gold standard, public and judicial expectations have been ignited with the expectation that fingerprint examination can now demonstrate an “appropriate scientific validation”. The problem is that it can’t.⁶⁷ I will now deal with both of these developments.

The first warning signal came from the United States in 1999. In a landmark five-day admissibility hearing, a debate emerged on whether forensic fingerprint identification was admissible and, if it was, what role it played in the case. Fundamental issues were debated: is forensic fingerprint identification a science? Is it truly infallible? Is this type of analysis better or worse than a forensic DNA analysis? Is it true that no two fingerprints are alike? How does one determine that? One question that underlay all of the issues was this: is latent print identification “valid”?

In an oral decision, the defence motion to exclude fingerprint evidence and testimony was denied.⁶⁸ On appeal, that ruling was upheld.⁶⁹ But the debate was only starting, and, as Neufeld and Scheck wrote in 2002, “the bedrock forensic identifier of the 20th century, fingerprinting, had started to wobble”.⁷⁰

In 2002, a U.S. federal judge sharply limited the use of fingerprint evidence in a drug-related murder case, on the basis that there was insufficient proof that the methods used by fingerprint analysts had been adequately tested in objective, controlled experiments. Judge Louis H. Pollak, a former dean of the Yale Law School, noted what he called “alarmingly high” error rates in

⁶⁷ Simon A. Cole, an Assistant Professor of Criminology, Law and Society at the University of California, who received a PhD in Science and Technology Studies from Cornell University, and is the author of a leading textbook on suspect identification and fingerprinting, says quite boldly: “Fingerprint validation studies still do not exist”. He contends that this is because, at present, fingerprint examiners are considered experts, and therefore they have nothing to gain and everything to lose from validation studies”: “Is Fingerprint Identification Valid? Rhetoric’s of Reliability in Fingerprint Proponents’ Discourse”, 28 *Law and Policy* 109 (2006) at 129; Kelly M. Pyrek, *Forensic Science Under Siege* (New York: Elsevier Academic Press), 2007 at pp. 275 – 278 [“Fingerprinting’s claims and assumptions are clearly surprisingly unproven”, at p. 277]; Sandy L. Zabell, “Fingerprint Evidence”, 13 *J.L. & Pol’y* 143 (2005) at 143-144.

⁶⁸ *US v. Byron Mitchell*, 2004 WL 908359, also at: http://onin.com/fp/daubert_links.html#CASE1

⁶⁹ *US v. Byron Mitchell*, <http://caselaw.findlaw.com/us-3rd-circuit/1122590.html>

⁷⁰ Peter Neufeld and Barry Scheck, “Will fingerprinting stand up in court?”, *The New York Times*, March 9, 2002.

proficiency tests taken by fingerprint examiners, and ruled that fingerprint examination is not a science, and consequently examiners would be permitted to testify only to the points of similarity that they observed, not about whether the prints matched. In a motion for reconsideration, the U.S. Attorney filed the results of proficiency tests and argued that the court's ruling could "undermine not only the admission of fingerprint evidence... but all manner of forensic testimony". Judge Pollock later reversed himself, but as one commentator noted, "the initial decision sent shock waves through the expert community".⁷¹

The next event was truly a forensic bombshell. On March 11, 2004 terrorists bombed a train station in Madrid, leaving approximately 200 people dead and another 1,400 injured. Seven weeks later, the FBI arrested an Oregon lawyer named Brandon Mayfield for his seeming involvement in the bombing. His connection to the event was anchored entirely on a fingerprint found by Spanish authorities on a bag of detonating devices used in the bombing. The FBI was "absolutely confident" of the match;⁷² subsequently, however, Spanish authorities announced that the fingerprint actually belonged to an Algerian national. Seventeen days after Mayfield's arrest, the FBI announced that they had made a serious mistake, and apologized to Mayfield⁷³; he was released immediately. It was clear, however, that Mayfield had been wrongfully imprisoned solely on the basis of a faulty fingerprint examination. The Bureau immediately and probably prematurely attempted to explain what had happened, in this way:⁷⁴

Upon review it was determined that the FBI identification was based on an image of substandard quality, which was particularly problematic because of the remarkable number of points of similarity between Mr. Mayfield's prints and the print details in the images submitted to the FBI.

Once again, the shock to the forensic community was significant, this time registering at the upper end of the Richter scale. A serious error had been made by the leading forensic investigative agency in the world, using their established protocols and methodologies, had been confirmed by an independent expert with the same degree of skill, and was reached with absolute certainty. The incident spawned several inquiries, including two by the Justice Department (conduct of the prosecutors; handling of the fingerprint examination by the FBI) as well as a separate one by the

⁷¹ E. J. Imwinkelried, "Forensic Science", (2002) 26 *National Law Journal* 18-19.

⁷² The testing had been performed by three FBI fingerprint examiners, and was further confirmed by a court-appointed independent expert: "FBI apologizes to lawyer held in Madrid Bombings", May 25, 2004: http://www.msnbc.msn.com/id/5053007/ns/us_news-security/t/fbi-apologizes-lawyer-held-madrid-bombings/ (last accessed August 11, 2011)

⁷³ Statement on Brandon Mayfield case (issued May 24, 2004): <http://www.fbi.gov/news/pressrel/press-releases/statement-on-brandon-mayfield-case>

⁷⁴ *Ibid*, Statement of FBI; This was later disputed by the Office of the Inspector General: see, *infra*.

Bureau which focused on the handling of the fingerprint evidence. Mayfield sued, and in 2006 the government settled the action for \$2 million.⁷⁵

Shortly after the misidentification was found and confirmed, the FBI convened a 2-day session with an international panel of fingerprint experts to determine what went wrong, and provide recommendations for changes to FBI fingerprint procedures. The panel met in June 2004. Several panelists expressed the view that the initial examiner had failed to conduct a complete examination, causing him to disregard important differences between the known and questioned samples. Several panelists cited overconfidence, and the pressure of working on a high-profile case as contributing to the error. Some felt that the independent verification had been “tainted” by knowledge of the initial examiner’s conclusion.⁷⁶

The Justice Department’s independent review was undertaken by the Office of the Inspector General (“OIG”). It was conducted by a team of attorneys who interviewed approximately 70 persons, reviewed all of the thousands of pages of documents, and consulted with three distinguished latent fingerprint examiners from outside the FBI lab.⁷⁷ The resulting 330 page report was critical in many different ways, but started with a clear suggestion that the Bureau’s lab had become a bit too confident in its work:⁷⁸

The misidentification of LFP 17 was a watershed event for the FBI Laboratory, which has described latent fingerprint identification as the “gold standard for forensic science.” Many latent fingerprint examiners have previously claimed absolute certainty for their identifications and a zero error rate for their discipline.

The OIG concluded that several factors had fueled the misidentification. First, the examiners failed to apply a rigorous application of several widely-accepted principles of fingerprint identification: for instance, they applied “circular reasoning”, allowing details visible in the known prints to be seen in the somewhat murky or ambiguous details of the questioned print – when they were not really there. They also accepted a “double touch” explanation for an obvious difference in appearance between the two, when there was an insufficient evidentiary support, and in doing so assumed “a remarkable set of coincidences in order to make the identification”.⁷⁹

⁷⁵ “War on Error: feds pay out millions to wrongfully accused terror suspects”, Mail Online, March 21, 2011 (last accessed August 11, 2011): <http://www.dailymail.co.uk/news/article-1368520/Terror-suspects-sue-U-S-millions-Brandon-Mayfield.html#>

⁷⁶ “A Review of the FBI’s Handling of the Brandon Mayfield Case”, U.S. Department of Justice (Office of the Inspector General), March 2006 at p. 3-4: http://www.justice.gov/oig/special/s0601/PDF_list.htm

⁷⁷ “A Review of the FBI’s handling of the Brandon Mayfield Case”, U.S. Department of Justice (Office of the Inspector General), March 2006 at p. 5: http://www.justice.gov/oig/special/s0601/PDF_list.htm

⁷⁸ Ibid., p 269

⁷⁹ Ibid., pp. 269-270.

Underlying the report is a theme of overconfidence if not a touch of arrogance on the part of the FBI lab: Spanish experts had concluded that the two sets of prints did not match; in the face of that, “the FBI examiners declared that they were “absolutely confident” in their identification *even before determining the basis of the (Spanish lab’s) disagreement*” [emph. added]. The OIG continued: “We concluded that the FBI Laboratory’s overconfidence in its examiners prevented it from taking the (Spanish lab’s) results as seriously as it should have”.⁸⁰

Less convincingly, the OIG concluded that the FBI examiners and the fourth, court-appointed expert all became “confused” by the fact that the questioned print contained as many as 10 points that corresponded to details in Mayfield’s known fingerprints. The report said that “[t]his degree of similarity is extraordinarily rare” – despite the fact that several countries require even more points of comparison than that: France (16); Australia (12)⁸¹; Canada (10/12)⁸²; in England, the historical standard was 12, altered to 16 in 1924 by the Metropolitan Police, and then accepted as a national standard of 16 in 1953. A non-numerical standard was adopted in England in 2001— something which, at least in part, prompted the England and Wales Court of Appeal in 2011 to call for a comprehensive review of quality standards and accountability systems in fingerprint examinations.⁸³

Failed expectations often lead to a demand for public accountability. Against the distant backdrop of the forensic miscarriage in the case of Brandon Mayfield, the Scottish Executive has recently ordered a judicial inquiry into the bizarre if not insoluble case of Shirley McKie – a serving police officer who successfully fought an accusation that a fingerprint attributed to her had been found at a crime scene to which she had been refused entry.⁸⁴ The facts of the case can only serve to erode the “gold standard” mantle that fingerprint examinations have traditionally been accorded. Briefly, the background is this.

In May 1997 David Ashbury was convicted of murdering Marion Ross. During the investigation, a fingerprint was found on the doorframe of the bathroom in Ms. Ross’ house. Examiners identified it as belonging to Shirley McKie, one of the officers involved in the investigation.

⁸⁰ Ibid., p. 270.

⁸¹ Kelly M. Pyrek, *Forensic Science Under Siege* (New York: Elsevier Academic Press, 2007) at p. 276.

⁸² The general practice is to chart 10 points of comparison for demonstration in court – though there may, in fact, have been more. “It has been accepted by the courts that ten or twelve points of comparison establish identity beyond all chance of error”: G.M. Chayko and E. D. Gulliver, editors, *Forensic Evidence in Canada* (Aurora: Canada Law Book Inc., 2nd ed., 1999) at Chapter 16, “Fingerprints”, p. 471 [authored by Herb Durand, then the Inspector in charge of the Identification Section of the Ottawa Carleton Regional Police, with 20 years experience in the identification field].

⁸³ *R v. Smith*, [2011] EWCA Crim 1296 at para. 62.

⁸⁴ Statement by Jim Wallace, the Minister of Justice (June 22, 2000): http://www.shirleymckie.com/mediaPDFs/33_%2022%20June%202000%20-%20Parliament%20Statement%20by%20Minister%20for%20Ju%20E%80%A6.pdf

During the murder trial, McKie denied that the fingerprint (known as “Y7”) was hers. After the trial, McKie was charged with perjury.⁸⁵

At McKie’s perjury trial, defence fingerprint experts convincingly demonstrated that Y7 was not her fingerprint. Although Scottish law permits a majority verdict in a jury trial, and even permits a verdict of “not proven” as distinct from one of not guilty⁸⁶, the jury empanelled in McKie’s case *unanimously* found her *not guilty* of perjury. The jury was clearly satisfied that the fingerprint examiners had simply got it wrong.

The issue of McKie’s fingerprint remained controversial over the next several years. On March 14, 2008 the Scottish Government announced that it was ordering a public judicial inquiry into the matter, chaired by Lord Justice Campbell, one of the most senior appellate judges in Northern Ireland.⁸⁷ His terms of reference are, at the same time, both simple and far-reaching:⁸⁸

- To inquire into the steps that were taken to identify and verify the fingerprints associated with, and leading up to, the case of *HM Advocate v. McKie* in 1999, and
- To determine, in relation to the fingerprint designated Y7, the consequences of the steps taken, or not taken, and
- To report findings of fact and make recommendations as to what measures might now be introduced, beyond those that have already been introduced since 1999, to ensure that any shortcomings are avoided in the future.

Oral hearings at the inquiry began in June, 2009. Eighty-eight witnesses testified, and of those 64 gave oral evidence during approximately 250 hours of hearings over 57 days. The inquiry concluded on the 16th of December, 2009; the Chairman’s report is expected shortly. The report will have global implications.

To sum up: few people seriously doubt that fingerprints can serve, and historically have served, as a highly discriminating identifier. Digital photographs and vast computer databases point to

⁸⁵ These facts are outlined on the official website of the resulting public inquiry led by Sir Anthony Campbell, a retired appeal court judge from Northern Ireland:

<http://www.thefingerprintinquiryscotland.org.uk/inquiry/25.23.html>

⁸⁶ David M. Walker, *The Scottish Legal System: An Introduction to the Study of Scots Law* (Edinburgh: W. Green/Sweet 7 Maxwell, 1997); Scots Law – Criminal Courts and Procedure: The Scottish Government:

<http://www.scotland.gov.uk/Topics/Justice/legal/criminalprocedure>

⁸⁷ The announcement in Parliament on 14 March 2008 can be found at:

<http://www.thefingerprintinquiryscotland.org.uk/inquiry/76.48.html> ; and the government’s press release issued as well on 14 March 2008 can be found at: <http://www.thefingerprintinquiryscotland.org.uk/inquiry/47.47.html>

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http://webcache.googleusercontent.com/search?q=cache:Srlw_voCHC8J:www.thefingerprintinquiryscotland.org.uk/inquiry/26.24.html+the+fingerprint+inquiry+terms+of+reference&cd=2&hl=en&ct=clnk&gl=ca&source=www.google.ca

the probability that this identification technique will in the future be even more significant than it has in the past.

However, as DNA quickly establishes itself as the new gold standard, the continued validity, accuracy and scientific basis for many of the forensic sciences have been called into question. Not surprisingly, the anxiety level increases where, as in the case of fingerprint examinations, specific hi-profile cases dependent solely on fingerprint evidence have been taken off the search for truth, resulting in miscarriages of justice.

Fingerprint validation studies still do not exist.⁸⁹ At least one scholar has suggested that this state of affairs is deliberate: he argues that because under present jurisprudence fingerprint evidence is reliable and admissible, latent print examiners “[...] have nothing to gain and everything to lose from validation studies.”⁹⁰ Instead, examiners rely on jurisprudence, treatises and anecdotal information in support for two fundamental, but scientifically unproven assumptions: the uniqueness of fingerprints, and their permanence.⁹¹ Concerning these assumptions, Simon Cole contends that the rhetoric may simply not meet the reality:⁹²

This review points to two unpalatable conclusions. The first is that many practitioners and defenders of forensic fingerprint identification still do not understand what is meant by the demand for validation studies, still believe that uniqueness is the fundamental empirical question necessary to validate forensic fingerprint identification, and still believe in the fallacy that casework comprises validation. The second is that the misunderstanding may be deliberate. Historically, fingerprint evidence has benefited enormously from courts’ willingness to construe the assumption of uniqueness as evidence of accuracy (Cole 2004). The literature reviewed here may intentionally be seeking to perpetuate that fallacy. Until all parties come to some agreement about what are the relevant empirical questions surrounding latent print identification, the fingerprint challenge will be mired in rhetorical claims that fly past one another.

This presents a dilemma: any serious search for an underlying scientific basis will be met with disappointment. Yet the popular and judicial intuitions that underlie fingerprint examinations are powerful. The technique continues to have enormous authority where it counts – in the courts, and with the public. Dislodging a popular commitment of this sort will require a wealth of focused and convincing evidence – enough to withstand the inevitable conclusion that if fingerprinting falls, so will a great deal of other evidence now considered to be reliable and admissible.⁹³

⁸⁹ Simon A. Cole, *supra*, footnote 67, at p. 129.

⁹⁰ Simon A. Cole, *supra*, footnote 67, at p. 129.

⁹¹ Kelly M. Pyrek, *supra*, footnote 81, at p. 277, 280-281.

⁹² Simon A. Cole, *supra*, footnote 67, at p. 130-131: https://webfiles.uci.edu/scole/lapo_219.pdf (Last accessed August 14, 2011).

⁹³ Generally, see: Kelly M. Pyrek, *supra*, footnote 81, at p. 277-278.

The answer may lie in dicta outlined by the Ontario Court of Appeal in 2009.⁹⁴ There, the trial judge focused on whether the proffered expert evidence had indicia of reliability, measurable error rates, peer review, the use of random sampling and the ability of the tester to replicate his or her results.⁹⁵ Concluding that “scientific validity” is not a condition precedent to the admissibility of expert opinion evidence, and that most expert evidence routinely heard and acted upon in the courts cannot be scientifically validated, Doherty, J.A. said this on behalf of the unanimous court:⁹⁶

It is not surprising that Dr. Totten’s opinion could not pass scientific muster. While his research, and hence his opinion, could be regarded as scientific in the very broad sense of that word, as used in *McIntosh*, Dr. Totten did not pretend to employ the scientific method and did not depend on adherence to that methodology for the validity of his conclusions. As his opinion was not the product of scientific inquiry, its reliability did not rest on its scientific validity. Dr. Totten’s opinion flowed from his specialized knowledge gained through extensive research, years of clinical work and his familiarity with the relevant academic literature. It was unhelpful to assess Dr. Totten’s evidence against factors that were entirely foreign to his methodology. As Professors Sales and Shuman put it in their text, *Experts in Court: Reconciling Law, Science, and Professional Knowledge*, at pp. 74-75: “[f]or non-scientific expert testimony, scientific validity is an oxymoron.”

The forensic fingerprint examiner community around the world anxiously awaits the results of the Scottish Fingerprint Inquiry. That may, indeed, provide much needed guidance on issues of standards and accountability mechanisms – but in the end it will fall to the fingerprint examiner community to ensure that the legal profession and the judiciary can continue to have confidence in fingerprint evidence, without fear that later developments in a case may demonstrate that facts originally relied upon in court were wrong, and that the course of justice was inadvertently taken off the rails resulting in a miscarriage of justice.

d) Forensic pathology

Forensic pathology is an inexact science, the accuracy of which is particularly susceptible to subjective assessments and changes in expert views. The evolution that has taken place over the past two decades, particularly in pediatric forensic pathology, has generated intense controversy in the U.K. and Canada, and has exposed a disturbing string of wrongful convictions in both countries. But the discipline wasn’t always seen that way.

⁹⁴ *R v. Abbey*, 2009 ONCA 624, 246 C.C.C. (3d) 301 (Ont. C.A.), per Doherty, J.A. on behalf of the unanimous court.

⁹⁵ *Ibid.*, at para.104.

⁹⁶ *Ibid.*, at para. 108.

The odyssey starts with Sally Clark in the U.K.⁹⁷ In 1999, she was convicted of the murder of her two baby sons. An appeal against conviction was dismissed by the Court of Appeal. The Criminal Cases Review Commission subsequently referred the matter back to the Court of Appeal. Two issues were raised. First, the evidence was not consistent only with foul play. Second, statistical information given to the jury about the likelihood of two sudden and unexpected deaths of infants from natural causes misled the jury and painted a picture that is now accepted as over-stating very considerably the rarity of two such events happening in the same family.

Critical pathological evidence led by the Crown was given by Dr. Alan Roy Williams and Professor Sir Samuel Roy Meadow. I will comment on their careers a bit later. Suffice it to say that Dr. Williams was an experienced pathologist, and Professor Meadow was an eminent pediatrician whose reputation was renowned throughout the world. Cause of death was the central issue in the case. The case was treated as an instance of Sudden Infant Death Syndrome, and the Crown's experts concluded that the children's death had been unnatural and that there was evidence suggestive of smothering.

Professor Meadow added to the complexities in the case. He testified that the risk of two infants dying of Sudden Infant Death Syndrome in a single family was 1 in 73 million. Fresh medical evidence was tendered on appeal. It challenged the evidence originally tendered at trial, and suggested that a natural death had occurred through a serious infection.

Reversing conviction, the Court of Appeal concluded that the new medical evidence made the verdict unsafe. Additionally, the Court concluded that the statistical evidence provided a separate and distinct basis upon which the appeal had to be allowed.

This decision sent shockwaves through the pathological and prosecutorial communities. The careers and reputations of two eminent pathologists were clearly placed in issue. But there were still a large number of cases involving the testimony of Drs. Williams and Meadows that had yet to be considered.

The shifting sands of medical opinion show that even the most renowned of experts can be wrong. Tragically, that led to the wrongful conviction of yet another mom, exposed barely nine months after the decision of the Court of Appeal in *R v Clark*.⁹⁸

Angela Cannings gave birth to four children, three of whom died in infancy. The children were in the sole care of their mother. Ms. Cannings was charged with the murder of two of the children. She was convicted by a jury, and sentenced to life imprisonment on each count.

The Crown's case was that the accused had smothered both children, intending to kill them or to do serious bodily harm to them. The evidence, however, showed that all four babies were wanted

⁹⁷ *R v. Clark*, [2003] EWCA Crim 1020. This analysis of the situation in the UK draws very much on my earlier publication entitled "Convicting the Innocent: A Triple Failure of the Justice System", (2006), 31 Man. L.J. 403 at pp. 458 – 460.

⁹⁸ *R v. Cannings*, [2004] EWCA Crim 1

children, blessed with love, affection and care from both parents. There was no suggestion of ill temper, inappropriate behavior, ill treatment, let alone violence, at any time with any of the four children.⁹⁹ The ultimate issue at trial and later on appeal was whether the children had died as a result of some natural cause – put another way, whether any crimes had been committed at all.

At trial, both the Crown and defence called expert witnesses. Those called by the Crown supported the view that the deaths were unnatural. Defence witnesses were critical of that view, contending that "current dogma is that an unnatural cause has been established unless it is possible to demonstrate an alternative, natural explanation for these events."¹⁰⁰

Lingering under the surface both at trial and on appeal was, putting it colloquially, whether "lightning could strike three times in the same place". Significantly, Professor Sir Roy Meadow, whose evidence had carried great weight with the jury which tried Sally Clark, testified for the Crown in this case as well. The Court of Appeal noted that while on this occasion Professor Meadow did not provide the same sort of flawed statistical evidence at the Clark trial, the impugned evidence he provided in those proceedings "serves to undermine his high reputation and authority as a witness in the forensic process."¹⁰¹

On appeal, fresh evidence challenged the evidence led by the Crown at trial, and reframed the principal issue in the proceedings. Rather than focusing on the extreme rarity of three separate infant deaths in the same family, the Court of Appeal was satisfied that on the evidence "there is a realistic, albeit as yet undefined, possibility of a genetic problem within this family which may serve to explain these tragic events."¹⁰²

Commenting on the shifting sands of expert and medical views, the Court of Appeal made this observation in a much-quoted passage:¹⁰³

The trial, and this appeal, have proceeded in a most unusual context. Experts in many fields will acknowledge the possibility that later research may undermine the accepted wisdom of today. "Never say never" is a phrase which we have heard in many different contexts from expert witnesses. That does not normally provide a basis for rejecting the expert evidence, or indeed for conjuring up fanciful doubts about the possible impact of later research. With unexplained infant deaths, however, as this judgment has demonstrated, in many important respects we are still at the frontiers of knowledge. Necessarily, further research is needed, and fortunately, thanks to the dedication of the medical profession, it is continuing. ... In cases like the present, if the outcome of the trial depends exclusively or almost exclusively on a serious disagreement between distinguished and reputable experts, it will often be unwise, and therefore unsafe, to proceed.

Underscoring the terribly tragic consequences for a mother who is imprisoned as a result of an expert witness later proved to be wrong, the Court of Appeal concluded as follows:¹⁰⁴

⁹⁹ Ibid., at para. 160

¹⁰⁰ Ibid., at para. 18

¹⁰¹ Ibid., at para. 17

¹⁰² Ibid., at para. 175

¹⁰³ Ibid., at para. 178

In a criminal case, it is simply not enough to be able to establish even a high probability of guilt. Unless we are sure of guilt the dreadful possibility always remains that a mother, already brutally scarred by the unexpected death or deaths of her babies, may find herself imprisoned for life for killing them when she should not be there at all. In our community, and in any civilized community, that is abhorrent.

How did these tragic cases of wrongful conviction occur? Perhaps with the benefit of hindsight, it is now clear that during the 1970's and 1980's many in the medical profession believed that three pathology findings, known as the “**triad**”, were diagnostic of Shaken Baby Syndrome (“**SBS**”):¹⁰⁵

- a) Subdural hemorrhages (usually, a thin layer of blood between the brain and the skull);
- b) Retinal hemorrhages (bleeding within the back part of the eye); and
- c) Hypoxic-ischemic encephalopathy (low oxygen injury to the brain that causes swelling).

Shaken baby syndrome became a widely accepted clinical diagnosis for inflicted head injury in infants. But there were far-reaching legal implications: absent witnessed abuse, where the constellation of these three findings¹⁰⁶ was present, and the caregiver could not provide a reasonable explanation for the child's condition, the caregiver was often charged criminally. To put a finer point on it, the accusing finger would inevitably be pointed at *the last person with the baby*:¹⁰⁷

Medical experts have testified that the force necessary to cause head injury by shaking was extremely violent and abusive, such that the perpetrator would be aware it was injurious. In addition, it was believed that there would be immediate and obvious signs of deterioration in the infant. This conclusion led both the medical and legal community to presume that the last person with the child when the deterioration occurred was the person who caused the injury. *The presence of the triad, therefore, has been understood to establish beyond a reasonable doubt that the last person with the baby before deterioration occurred must have shaken the baby forcefully, causing fatal injury to the baby's brain. For years, the medical consensus on this issue was overwhelming.* (emph. added)

Medical science has evolved since then, and continues to evolve. The reality is that, over time, the mainstream opinion shifted. Recent studies suggest that cases defined as SBS may actually have resulted from a blunt impact injury to the head – such as a short fall.

¹⁰⁴ Ibid., at para. 179

¹⁰⁵ Committee Report to the Attorney General: Shaken Baby Death Review (2011) at p. 7-8 and p. 152: <http://www.attorneygeneral.jus.gov.on.ca/english/about/pubs/sbdr/sbdr.pdf>

¹⁰⁷ Ibid., at 8-9.

Further, it is now believed that a significant period of time can actually pass between the injury event and the loss of consciousness – significantly reducing the “last caregiver is responsible” theory. As well, there is now an increased recognition that other disease processes (such as clotting disorders and pregnancy-related conditions) may mimic the findings described in cases previously thought to be attributed to shaking.¹⁰⁸ The current medical thinking can be summarized in the following way:¹⁰⁹

Given the scientific controversies surrounding a diagnosis of SBS, judicial opinions and a recent statement by the Royal College of Pathologists (U.K.) have concluded that the constellation of the three findings (triad) is a strong pointer to mechanical trauma, potentially including vigorous shaking, but should not be regarded as absolute proof of traumatic head injury in the absence of any other corroborative evidence. This position reflects the current state of medical knowledge.

The battered baby scandal in the United Kingdom was horrific for several reasons. It put innocent moms into jail when they were still grieving the deaths of their babies. It ruined the careers of at least two eminent medical practitioners.¹¹⁰ It may have reduced the public's confidence in the ability of the medical profession to provide authoritative advice to the courts on the cause of infant deaths, and concurrently may have lessened the public's confidence in the ability of the judicial process to determine fundamental issues of guilt or innocence. And the controversy over forensic pathology was just about to move across the ocean, to Canada.

In this essay, I have endeavored to confine my comments to broad systemic shifts in scientific and medical thinking. The Canadian experience in this particular area is, however, inextricably linked to the work of Dr. Charles Smith – a now discredited pathologist who over a period of three decades was primarily responsible for a string of tragic miscarriages of justice in Ontario. For that reason I will deal first with Dr. Smith's role in the controversy, then return back to the dilemma posed by the shifting sands in medicine and science.

Dr. Smith was a pediatric pathologist, not a forensic pathologist. He had no formal forensic pathology training or board certification in that field. Despite this, the Chief Coroner for Ontario and the Hospital for Sick Children (“**Sick Kids**”) appointed him director of the Ontario Pediatric Forensic Pathology Unit in 1992. In the years that followed, he came to be known as Ontario's leading expert in pediatric forensic pathology. He began lecturing on pediatric forensic pathology, especially issues relating to the criminal justice system.¹¹¹ But “(h)is growing

¹⁰⁸ *Ibid.*, at pp. 10 – 13.

¹⁰⁹ *Ibid.*, at p. 11.

¹¹⁰ What happened to them is recounted in: *General Medical Council v. Professor Sir Roy Meadow*, 2006 EWCA Civ 1390; and *Williams v. General Medical Council*, [2007] EWHC 2603 (Admin).

¹¹¹ The Honorable Stephen T. Goudge, Commissioner, Inquiry into Pediatric Forensic Pathology in Ontario, Report, Volume 2: Systemic Review (Queens Printer for Ontario: 2008), at p. 117-118; published online at: <http://www.attorneygeneral.jus.gov.on.ca/inquiries/goudge/report/index.html>

reputation seems to have been based more on these speaking engagements than on his work in criminally suspicious cases. It certainly was not based on any formal training in forensic pathology”.¹¹²

While there were some early red flags that were raised about Dr. Smith’s competence and professionalism, they were for the most part ignored by the medical community during the 1990’s and early 2000’s.¹¹³ In 2005, the Chief Coroner of Ontario ordered a review of 45 cases where Dr. Smith had provided an opinion. The Chief Coroner’s review ultimately led to the Inquiry into Pediatric Forensic Pathology in Ontario (the “**Goudge Inquiry**”).

Dr. Smith eventually acknowledged that his forensic pathology training was “woefully inadequate”, resulting in serious mistakes in a significant number of death investigations.¹¹⁴ But it was worse than that. He was disorganized, arrogant and dogmatic in the way in which he presented his opinions, was deceptive, and held a deep belief in the evil of child abuse, resulting in an unacceptable investment in his cases and a lack of objectivity.¹¹⁵ The Goudge Inquiry eventually concluded that his many errors were a “primary cause” of the significant loss of public confidence which prompted government to establish the Commission in the first place.¹¹⁶

But in court proceedings during the 1990’s, he was the forensic pathology king.¹¹⁷ His appearance as the lead expert witness for the prosecution often prompted a guilty plea, usually to a reduced charge, and with the benefit of hindsight, it now seems clear that the pleas generally came in response to the hydraulic pressure of an offer from the Crown that was irresistible. In one case, mom was charged with first degree murder. The case hinged on the opinion of Dr. Smith. The Crown offered infanticide, in exchange for an agreement not to contest a set of facts, including the allegation that the accused had smothered her infant – even though she had always said that she had never harmed her child. She agreed, and was sentenced to a year in jail. In subsequent appellate correction proceedings, the court observed that “flawed pathological evidence” had led to a wrongful conviction; concerning the guilty plea, the court said in relation to Dr. Smith: “given his stature at the time, the appellant and her counsel did not believe that they could successfully contest his opinion”.¹¹⁸

In another case, Dr. Smith formed the opinion that the diseased baby had been born alive, but died of what he described as “asphyxia (infanticide)”. Mom was charged with second degree

¹¹² *Ibid.*, p. 118.

¹¹³ *R v. C.M.*, 2010 ONCA 690 at para. 2.

¹¹⁴ The Goudge Inquiry, *supra*, footnote 111, p. 117 and 119.

¹¹⁵ *Ibid.*, p. 203.

¹¹⁶ *Ibid.*, p. 115.

¹¹⁷ The Ontario Court of Appeal put it this way in 2010: “In the early 1990’s, Dr. Smith had an outstanding reputation. He was considered the leading authority in Canada in the field of paediatric forensic pathology”: *R v. C.M.*, 2010 ONCA 690 at para. 4; *R v. Abbey*, 2009 ONCA 624 at para. 64.

¹¹⁸ *R v. Sherret-Robinson*, 2009 ONCA 886.

murder, and pleaded guilty to manslaughter. In subsequent consensually-based correction proceedings, the court admitted fresh evidence showing that there had never been any reliable pathological evidence to support Dr. Smith's conclusions, set aside the guilty plea, allowed the appeal, and set aside the conviction. The court made this important observation concerning Smith's position of authority in Ontario:¹¹⁹

The appellant's trial counsel had difficulty obtaining a forensic pathologist who was willing to challenge Dr. Smith's findings. In the early 1990's, Dr. Smith had an outstanding reputation. He was considered the leading authority in Canada in the field of paediatric forensic pathology. The experts that the defence eventually retained had less impressive credentials, and the appellant's counsel strongly believed their opinions could not convincingly challenge that of Dr. Smith, given his preeminent position. Trial counsel was, however, able to convince Crown counsel to accept a plea to manslaughter, and not to pursue a jail sentence.

In other cases: trial evidence demonstrated that a forensic "rush to judgment" by Smith resulted in a wrongful imprisonment for 12 years;¹²⁰ in a second case, a conclusion by Dr. Smith that a child died by strangulation and suffocation was overtaken by an international panel of experts who were satisfied that, at best, the cause of death was "unascertained";¹²¹ and in yet another case a conviction for infanticide was reversed because there was "never any reliable pathological evidence to support Dr. Smith's conclusion that the cause of death of the appellant's child was asphyxia".¹²²

That takes me back to my earlier point. Not all of the "Dr. Smith cases" involve a pathological error by him. In some instances, Smith's original opinion was actually in conformity with accepted opinion in the 1990's. Verdict correction was not required because of the incompetence of an individual pathologist; rather, it was required because the views of the forensic pathologist community had changed, leaving conviction for a criminal offence unsafe. The sands had shifted, markedly. The case of Dinesh Kumar best illustrates this situation.¹²³

Mr. Kumar and his wife immigrated from India in 1991. They had their first child, Saurob, just before moving to Canada. Their second son, Gaurov, was born in Canada on February 11, 1992. During the evening of March 17, 1992 Gaurov woke up crying. Anyone who has cared for a baby knows that babies do cry. And parents respond. Dad fed him and placed him back in his crib where he fell asleep. A few hours later, something terrible happened. Gaurov woke up with a scream. Dad picked him up, and saw that he was turning blue. He told his wife that something

¹¹⁹ *R v. C.M.*, 2010 ONCA 690; a similar conclusion was reached in: *R v. Abbey*, 2009 ONCA 624, 246 C.C.C. (3d) 301 (Ont. C.A.) at para. 64; and *R v. C.F.*, 2010 ONCA 691.

¹²⁰ *R v. Mullins-Johnson*, 2007 ONCA 720

¹²¹ *R v. Marquardt*, 2011 ONCA 281.

¹²² *R v. C.F.*, 2010 ONCA 691; to the same effect, in a case of manslaughter, see: *R v. C.M.*, 2010 ONCA 690.

¹²³ *R v. Kumar*, 2011 ONCA 120

was wrong, and gave his child mouth to mouth resuscitation. Dad and a relative called 911. Emergency personnel arrived, and Gaurov was taken to hospital. Breathing was restored, but the child's brain was badly damaged. Two days later, he was taken off life support and declared dead.¹²⁴

An autopsy conducted by Dr. Smith revealed extensive hemorrhaging within the brain, behind both retinas and around the spinal cord. Dr. Smith concluded that the injuries were definitely not accidental, and were probably a result of continuous shaking after an episode of Shaken Baby Syndrome. Another physician, who was a member of the Suspected Child Abuse and Neglect Program at SickKids, agreed with Dr. Smith's conclusion. That doctor, however, had no training in pathology.

As Mr. Kumar had been caring the baby at the time of the collapse, he was charged with murder. In lock-step fashion, Dad was drawn into and catapulted through the criminal justice system. He was shocked when he was arrested, and felt confused, frightened and ashamed before his family and his community. By now, he was emotionally crushed. He was charged criminally, but he was also grieving the loss of his child.

Eventually, and unexpectedly, the Crown offered him a plea to criminal negligence causing death; he accepted, the murder charge was withdrawn and Mr. Kumar was sentenced to 90 days imprisonment, to be served intermittently.¹²⁵

Mr. Kumar had maintained his innocence from the outset. He decided to plead guilty to the reduced charge for two reasons: fear of deportation if convicted of murder or manslaughter; and his own counsel "told him that there was no way to challenge the testimony of Dr. Smith."¹²⁶ The hydraulic pressure of the proposed plea agreement was overwhelming. Before the Court of appeal, he said these powerful words:¹²⁷

My family, including my wife, wanted me to accept the Crown's offer. My wife was still recovering from her surgery, and could not cope alone with one infant and no income. We all wanted to put my charge behind us. We were all scared of the murder charge. My lawyer told me that we did not have any way to challenge the testimony of Dr. Smith. So I agreed, after much discussion with my family, to plead guilty as I did. It was the hardest decision I ever had to make. I do not want my guilty plea to ever be interpreted to mean that I did anything to harm Gaurov. I did not. My wife knows this too.

The Court of Appeal echoed those sentiments:¹²⁸

He was facing loss of his liberty for at least ten years, loss of custody of his remaining child and deportation. Competent counsel had been unable to obtain opinion evidence to refute the opinion of the then leading expert in the province that the appellant had

¹²⁴ *Ibid.*, at paras. 1-5.

¹²⁵ *Ibid.*, at paras. 6-9.

¹²⁶ *Ibid.*, at para. 13.

¹²⁷ *Ibid.*, at para. 37.

¹²⁸ *Ibid.*, at para. 34. [The case reference is: *R v. Hanemaayer* 2008 ONCA 580].

intentionally caused the death of his child. Like in *Hanemaayer*, the appellant faced a terrible dilemma. The justice system now held out a powerful inducement: a reduced charge, a much-reduced sentence (90 days instead of a minimum of ten years), all but the elimination of the possibility of deportation, and access to his surviving child.

The case came to light during a subsequent review of criminally suspicious and homicide cases in which Dr. Smith had conducted an autopsy or provided an opinion. The reviewer, Dr. Helen Whitwell, a forensic pathologist and neuropathologist from the United Kingdom, concluded that the opinion provided by Dr. Smith was actually in conformity with accepted opinion in 1992. However, the medical sands had shifted: “[t]his would not be the usual view of the UK forensic pathologists now [although it] may well still prevail with the paediatricians.”¹²⁹

The Crown retained two experts to examine the issues raised by Dr. Whitwell. One was Dr. Michael Pollanen, the Chief Forensic Pathologist for the Province of Ontario and arguably one of Canada’s leading forensic pathologists. The Ontario Court of Appeal summarized his conclusion that the medical views in this field have shifted markedly in the past two decades, in the following way:¹³⁰

In a lengthy report, Dr. Pollanen has provided a helpful review of the diverse views concerning the validity of Shaken Baby Syndrome. There are a number of controversies surrounding Shaken Baby Syndrome. Most prominent is the meaning that should be attached to the triad of symptoms considered to be indicative of SBS: thin film subdural haemorrhage (SDH), widespread bilateral retinal haemorrhage (RH), and hypoxic ischemic encephalopathy (HIE). In the early 1990’s, when the autopsy was conducted in this case, these findings were widely accepted to be diagnostic of non-accidental head injury. In effect, the infant had been shaken to death with such force that any normal adult would realize that the infant would be seriously injured. The current view of forensic pathologists, although not necessarily clinicians, is that the triad is at worst suspicious, but can no longer be considered absolute proof of traumatic head injury in the absence of other evidence. There are some experts who hold the view that, in fact, there is no such thing as shaken baby syndrome; it is impossible to apply sufficient force to an infant by shaking without there being other injuries, such as trauma to the spine and neck areas.

During subsequent appellate correction proceedings, counsel for Mr. Kumar retained three experts. One was Dr. Jan Leetsma, a prominent neuropathologist from Chicago. His view went even further, based on his own research. He said that on the basis of today’s science, “Shaken Baby Syndrome must remain an unproven hypothesis with no scientific, medical or legal significance”.¹³¹ The Court of Appeal found it unnecessary to resolve the issues surrounding shaken baby syndrome. Rather, the critical point for the court was the clear change in medical view during the intervening period.¹³²

¹²⁹ *Ibid.*, at para. 15.

¹³⁰ *Ibid.*, at para. 19.

¹³¹ *Ibid.*, at para. 28.

¹³² *Ibid.*, at para. 35.

It is important to place the expert evidence in its proper context. This appeal differs from some of the other cases recently heard by this court where an opinion by Dr. Charles Smith was at the heart of the case. The opinion given by Dr. Smith in 1992 was one that would have been supported by many other experts and, in fact, was apparently supported by a pathologist consulted by the defence at the time. Medical science has now advanced to a point where the existence of the triad of symptoms alone, while suspicious, is not diagnostic of non-accidental head injury. When the appellant was charged and pleaded guilty there was nothing but the triad to support the prosecution case of intentional infliction of injury.

The main point is this: medicine is not static or frozen in time. Medical science has evolved over the years, and will continue to evolve as research advances and new technology is developed. Dr. Pollanen underscored this when he cautioned that the science of pediatric head injury is still evolving, but that his current views are based on past and current literature, and may have to be assessed differently in the future.¹³³

The 2011 Shaken Baby Death Review report instructed by the Attorney General of Ontario put an even finer point on the issue when it suggested that some criminal cases *may never truly be “over”*.¹³⁴

The cases were assessed based on current medical knowledge and understanding of pediatric head injury. However, as science continues to evolve, some of the outstanding issues in relation to pediatric head injury may be resolved. If and when that occurs, these cases could be assessed differently in light of new scientific discoveries.

Part IV: Some Concluding Observations

Forensic science and medicine has, for the most part, significantly assisted the fact-finding role of the criminal justice system during the past several decades. Perhaps most famously, DNA testing demonstrated beyond any doubt that David Milgaard was innocent of the murder of nurse Gail Miller in Saskatoon, allowing him to be released from jail after having served over two decades in a penitentiary; at the same time, separate DNA tests showed that another person, Larry Fisher, was responsible. Fisher has since been convicted of first degree murder, and sentenced to life imprisonment.¹³⁵

¹³³ *Ibid.*, at para. 22.

¹³⁴ “Committee Report to the Attorney General: Shaken Baby Death Review” (2011), *supra*, footnote 105, at p. 32 [emph. is mine].

¹³⁵ *R v. Fisher*, 2003 SKCA 90; 179 C.C.C. (3d) 138 (Sask. C.A.). Chief Justice Roberts of the U.S. Supreme Court recently said this: “DNA testing has an unparalleled ability both to exonerate the wrongly convicted and to identify the guilty. It has the potential to significantly improve both the criminal justice system and police practices”: *District Attorney’s Office v. Osborne*, 557 U.S. _____ (2009) at p. 1 (slip op.), discussed *infra*.

On a day-to-day basis, forensic science assists the legal profession in sorting out who is guilty, and who may be innocent. Evidence of this nature has become a mainstay in the criminal litigation process for decades.¹³⁶

However, the introduction of DNA testing during the 1990's changed the picture: it is now quite apparent that forensic science and medicine has taken the criminal justice system off course in a disconcerting number of cases which otherwise seemed quite clear. Hair microscopy, an important investigative tool during the latter part of the 20th century, has now been largely discredited, and, in my view, involved little more than an educated guess by police-aligned examiners; fingerprint comparison evidence, the "gold standard" during most of the 20th century, is presently under a critical global microscope as a result of serious errors by some of the leading fingerprint examiners in the world. Moreover, forensic pathologists in Canada who were quite clear in their evidence during the 1990's are now conceding that some of the medical theories that underlay their testimony have shifted significantly since then. On occasion, they may have been wrong in their testimony, and probably were; but in the process, innocent persons were imprisoned largely or in part because of the "omniscient glow" that often prompts juries to give expert opinion evidence more weight than it deserves.¹³⁷ The point is this: we now know that after legal proceedings are complete, the factual matrix can shift, leaving the result of the trial substantially in doubt.

How can this have happened? After all, these are the experts in the white lab coats that seek to support the criminal justice system by bringing their knowledge and experience in the application of science to difficult medico-legal issues. The reasons are many and varied, but in my view three are critical. They are not watertight categories, and in some respects they are inextricably linked.

First, many aspects of the forensic sciences are, and for decades have been, in a state of evolution. Neither medicine nor science is static or frozen in time. Medical science has evolved following new discoveries, technological advances, and scientific research, and will continue to do so in the future.¹³⁸ It follows, therefore that what is presented to a court may be nothing more than a "snapshot" of the forensic view *at that point in the evolutionary continuum*. That may or may not remain the prevailing view in any particular discipline; where there is a shift in thinking, conviction may become unsafe where the impugned evidence played a central role at trial.

¹³⁶ In the context of opinion evidence generally, see: *R v. Abbey*, 2009 ONCA 624; 246 C.C.C. (3d) 301 (Ont. C.A.), at para. 73.

¹³⁷ To use the phrase adopted by Charron, J.A. on behalf of the court in *R. v. Ranger* (2003), 178 C.C.C.(3d) 375 (Ont. C.A.) at para. 64.

¹³⁸ See the Shaken Baby Death Review, *supra*, footnote 105 at p. 1.

The criminal justice system places a high premium on the finality of proceedings.¹³⁹ In traditional terms, at the end of the trial and any subsequent appellate proceedings, the accused is either guilty or is acquitted. The choice is stark, and enduring. But how does one reconcile the principle of finality with the reality, as we now understand it, that pivotal forensic principles and resulting conclusions may evolve and change in the years subsequent to the legal proceedings?

Second, the experience in Canada and the UK during the past few decades raises significant issues about whether there is a disconnect between the demands of the criminal justice system, and the reality of what the forensic sciences can actually offer. Commissioner Goudge put it this way in the context of the level of certainty that forensic pathology can provide:¹⁴⁰

The prosecution must prove criminality beyond a reasonable doubt. Although this burden of proof has application to the entirety of the evidence, not individual pieces of it, it is clear that the criminal justice system may make demands on forensic pathology for certainty, when the science may not reasonably permit such confidence. Even when the latter is acknowledged, forensic pathologists may have difficulty quantifying their levels of confidence in ways that not only have scientific validity but are easily utilized by the legal system.

Expert views from the U.S. are consistent: in 2009, the National Academy of Sciences noted that forensic evidence is often offered in criminal prosecutions to “match” certain evidence to a particular person, weapon, or other source. “But”, the Academy concluded, “with the exception of nuclear DNA analysis, no forensic method has been rigorously shown able to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source”¹⁴¹. In other words, nuclear DNA is the clear gold standard; other forensic science techniques carry an accuracy risk.

Third, there is a growing sense that we have become too reliant on expert evidence in criminal cases. As the Ontario Court of Appeal recently put it: “Sometimes it seems that a deluge of experts has descended on the criminal courts ready to offer definitive opinions to explain almost anything”¹⁴², further cautioning that “[e]xpert evidence has the real potential to swallow whole the fact-finding function of the court, especially in jury cases”.¹⁴³

Expansion of this trend into areas of forensic science that are evolutionary in nature – or, worse still – where the experts themselves are actively debating underlying and foundational principles,

¹³⁹ *R v. Wigman*, [1987] 1 S.C.R. 246 at para. 21 in dissent, but not on this point [“Finality in criminal proceedings is of the utmost importance”]; *R v. Mahalingan*, 2008 SCC 63 at paras. 30, 38, 46-7 and 75; *R v. Brown* (1993), 83 C.C.C. (3d) 126 (S.C.C.) at pp. 133-134; *R v. R.R.* (1994), 91 C.C.C. (3d) 193 (Ont. C.A.) at p. 199; *R v. E.G.M.* 2004 MBCA 43; *R v. Shologin*, 2005 MBQB 255 at para. 11.

¹⁴⁰ Commissioner Goudge, *Inquiry into Pediatric Forensic Pathology in Ontario*, supra, footnote 111, Volume 2, p. 74.

¹⁴¹ See footnotes 15 and 16, supra, and accompanying text, for a discussion of this issue.

¹⁴² *R v. Abbey* (2009), 246 C.C.C. (3d) 301 (Ont. C.A.) at para 72.

¹⁴³ *Ibid.*, at para. 71.

may increase the risk of post-trial “sand shifts” to an unacceptable level. Hair microscopy and reliance on theories such as Shaken Baby Syndrome provide good examples of that risk, and the way in which criminal cases can go completely off the rails, resulting in very tragic miscarriages of justice. Put simply, the question is this: how do we avoid miscarriages where core facts later turn out to have been a moving target?

Despite these warnings and the attendant risks, forensic evidence will continue to be tendered and received into evidence in Canada. The challenge will be to ensure that the science relied upon, and the process that was used, are methodologically valid, reasonable and balanced, and the evidence tendered in court is appropriately contextualized. The latter will involve, at a minimum: setting boundaries for the proposed expert evidence, with strict adherence to those boundaries;¹⁴⁴ ensuring that any limitations concerning the accuracy or reliability of the evidence are clearly conveyed to the trier of fact; and avoiding being dogmatic in the presentation of the evidence, recognizing that knowledge in the area may evolve over time, requiring a revision of conclusions reached.¹⁴⁵ The challenge may also involve a reconsideration of the extent to which a trial judge should evaluate the reliability of the evidence as a prerequisite to admission – particularly where, on a preliminary showing, it appears clear that there is a serious debate within the forensic community itself on issues of reliability and underlying principles and assumptions, and that the discipline may at that stage be in the process of evolution and re-assessment.¹⁴⁶

Finally, the prospect that the sand can shift invites a brief comment on the extent to which North American appellate courts have been willing to re-consider trial verdicts where there has been a significant change in circumstances.

In the United States, the Supreme Court has been reluctant to provide post-conviction relief on the basis of a claim to actual innocence. On three occasions over the past 18 years, most recently in 2009, the Supreme Court has been prepared to assume, *arguendo*, that there was a constitutional right to challenge a conviction based on “truly persuasive” evidence of “actual innocence”.¹⁴⁷ But in all three cases, the Court declined to affirm that such a right exists, effectively keeping it hypothetical in nature.

In the second of those cases, already conducted DNA testing excluded the inmate as the perpetrator, and the court observed that the evidence was sufficiently powerful that “more likely

¹⁴⁴ As noted by the Ontario Court of Appeal in *R v. Abbey*, supra, at para. 62, “overreaching by expert witnesses is probably the most common fault leading to reversals on appeal”

¹⁴⁵ On this point, see the Goudge Inquiry report, supra, footnote 111, Volume 2, at p. 72, quoting the evidence presented at the Inquiry by Dr. Jack Crane, the state pathologist for Northern Ireland.

¹⁴⁶ For a discussion of whether there is a constitutional right to have inherently unreliable evidence excluded under the *Charter of Rights and Freedoms* where its admission produces a significant risk of a wrongful conviction, see Kent Roach, “Unreliable Evidence and Wrongful Convictions: The Case for Excluding Tainted Identification Evidence and Jailhouse and Coerced Confessions”, [2007] 52 Cr. L. Q. 210.

¹⁴⁷ *Herrera v. Collins*, 506 U.S. 390 (1993); *House v. Bell*, 547 U.S. 518 (2006); *Osborne v. District Attorney’s Office*, 129 S. Ct. 2308 (2009)

than not” a new jury would acquit.¹⁴⁸ Despite that, the Court refused to release him from custody, wary of recognizing a right to claim innocence and preferring instead to refer the case back to the trial level for reconsideration. More comprehensive DNA testing was then pursued and, three years later, the applicant was fully exonerated.¹⁴⁹ This state of affairs, at an earlier stage, prompted a U.S. judge to write an article asking whether innocence was even relevant any longer – rather than being, as he argued it should, the main preoccupation of judges hearing criminal cases.¹⁵⁰

Likewise, the U.S. Supreme Court has refused to order post-conviction DNA testing that could establish innocence, or confirm guilt. In *District Attorney’s Office v. Osborne*,¹⁵¹ it was argued, broadly, that the U.S. Constitution gave every citizen charged with a criminal offence the right to prove that s/he is innocent. Chief Justice Roberts, writing for a 5-4 majority, held that there was no constitutional right to obtain post-conviction access to the government’s evidence for DNA testing. Rather, it fell to the legislature to “confront[...] the challenges DNA technology poses to our criminal justice systems and our traditional notions of finality, as well as the opportunities it affords”, something that the States were actively pursuing through legislative action.¹⁵² He explained the rationale for the decision of the Court in these terms:¹⁵³

If we extended substantive due process to this area, we would cast these statutes into constitutional doubt and be forced to take over the issue of DNA access ourselves. *We are reluctant to enlist the Federal Judiciary in creating a new constitutional code of rules for handling DNA.* Establishing a freestanding right to access DNA evidence for testing would force us to act as policymakers, and our substantive-due-process rulemaking authority would not only have to cover the right of access but a myriad of other issues. We would soon have to decide if there is a constitutional obligation to preserve forensic evidence that might later be tested. (emph. added)

The decision in *Osborne* was supported by the National Association of State Attorneys General on the basis that it was important to protect the states from unwarranted expense.¹⁵⁴

The vast majority of U.S. states have now passed legislation governing post-conviction DNA testing, led by a model developed at the federal level. Some states have tightly circumscribed the right to access – such as Kentucky, which confines it to death penalty cases, where there is a

¹⁴⁸ *House v. Bell*, *ibid.*, at p. 571 (Roberts, C.J. dissenting)

¹⁴⁹ David G. Savage, “Murder Charge Dropped because of DNA”, Los Angeles Times, May 13, 2009: <http://articles.latimes.com/2009/may/13/nation/na-court-dna13> (last accessed September 11, 2011)

¹⁵⁰ Henry J. Friendly, “Is Innocence Irrelevant? Collateral Attack on Criminal Judgments”, 38 U Chi. L. Rev. 142 (1970).

¹⁵¹ 557 U.S. ____ (2009)

¹⁵² *Ibid.*, at 19 (slip op.)

¹⁵³ *Ibid.*, at 20 (slip op.), [internal footnote omitted]

¹⁵⁴ Nina Totenberg, “High Court Says Convicts Lack Right to DNA Testing, June 19, 2009, NPR News Washington: <http://www.npr.org/templates/story/story.php?storyId=105646724> (last accessed September 5, 2011).

reasonable probability that DNA testing will exonerate the applicant or result in exculpatory evidence that would lead to a more favorable verdict or sentence¹⁵⁵.

In 2011, the Supreme Court, in a 6-3 decision, explained the parameters of its decision in *Osborne*:¹⁵⁶

We note, however, that the Court's decision in *Osborne* severely limits the federal action a state prisoner may bring for DNA testing. *Osborne* rejected the extension of substantive due process to this area, 557 U.S. at ___ (slip op., at 19), and left slim room for the prisoner to show that the governing state law denies him procedural due process [...].

The approach in Canada has been fundamentally different – doubtless because of a different constitutional framework, but due at least in part to a lengthy and powerful line of decisions from the Supreme Court of Canada signaling the need to interpret Canadian criminal law – and if necessary re-shape it – in light of the reality that a number of wrongful convictions have occurred in this country.¹⁵⁷

During the past decade, appellate courts in Canada have consistently demonstrated a willingness to allow a case to be returned back to the court system for reconsideration where it appears that a miscarriage of justice probably occurred. In the process, substantive, procedural and evidentiary rules have been modified – and, in a few instances, significantly altered to ensure that a miscarriage is not occasioned or perpetuated. There are several legal routes that permit a case to be re-considered. Some are traditional; others are somewhat innovative.

The most obvious is where a prosecution resulted in a conviction, and was not appealed at the time. Leave to extend the time within which an appeal can be brought made be commenced even decades later – although it is certainly helpful to have developed the defence case to the point where the Crown is prepared to consent to the extension.¹⁵⁸ Even where the accused entered a

¹⁵⁵ KRS 422.285, as interpreted by the Supreme Court of Kentucky in *Thomas Clyde Bowling v. Commonwealth of Kentucky*, 2008-SC-000901-MR, decided on September 23, 2010, modified on March 24, 2011:

<http://opinions.kycourts.net/sc/2008-SC-000901-MR.pdf> In that case, the court found, provocatively, that “[...] there is no statutory right to demonstrate innocence under Kentucky law.” (p. 6)

¹⁵⁶ *Skinner v. Switzer*, 562 U.S. ____ (2011) [slip op, p. 2].

¹⁵⁷ *R v. Starr* (2000), 147 C.C.C. (3d) 449 (S.C.C.), at para. 200; *U.S.A. v. Burns* (2001), 151 C.C.C. (3d) 97 (S.C.C.), at paras. 1-3; *R v. McClure* (2001), 151 C.C.C. (3d) 321 (S.C.C.), at para. 40; *R v. Mapara* (2005), 195 C.C.C. (3d) 225 (S.C.C.), at para. 54; *Hill v. Hamilton-Wentworth Regional Police Services Board* (2007), 50 C.R. (6th) 279 (S.C.C.), at paras 36 and 43; *R v. Trochym* (2007), 216 C.C.C. (3d) 225 (S.C.C.), at para. 1; *R v. Khela* (2009), 238 C.C.C. (3d) 489 (S.C.C.), at paras 2 and 12; *R v. Sinclair*, [2010] 2 S.C.R. 310, per Binnie, J. in dissent, at para. 90.

¹⁵⁸ Section 678(2) *Cr. Code*. While the Code is silent on the criteria to be considered on a motion to extend, appellate courts have generally suggested that an applicant should be able to demonstrate that s/he had a bona fide intention to appeal within the appeal period: *R v. Meidel* (2000), 148 C.C.C. (3d) 437 (B.C.C.A.); *R v. Menear* (2002) 162 C.C.C. (3d) 233 Ont. C.A.); *Re Hayes and The Queen* (2007), 226 C.C.C. (3d) 417 (Ont. C.A.). In these types of situations that will not generally have been the case, so in the absence of Crown consent the argument

plea of guilty at trial, the Court of Appeal retains a discretion to be exercised in the interests of justice to receive fresh evidence explaining the circumstances leading to the plea, and may set aside the guilty plea, allow the appeal and set aside the original conviction – despite the passage of many years.¹⁵⁹

The Supreme Court of Canada can also play a role as an originating court in instances where it is said that a miscarriage has taken place. In *R v. Marquardt*,¹⁶⁰ the applicant in 2009 sought leave to appeal a judgment of the Court of Appeal for Ontario that had been delivered eleven years earlier. Granting the leave sought, the Supreme Court said that “the case is remanded to the Court of Appeal for Ontario for consideration of fresh evidence and whether the applicant’s conviction constitutes a miscarriage of justice”.¹⁶¹ The Court of Appeal allowed the fresh evidence, concluded that the applicant’s conviction constituted a miscarriage of justice, allowed the appeal and ordered a new trial. In doing so, the Court said this: “[...] it is tragic that it has taken so long to uncover the flawed pathological evidence that so clearly contributed to the appellant’s conviction in 1995”.¹⁶²

It should also be noted that a rarely-used section of the *Criminal Code* empowers a Court of Appeal to appoint a special commissioner to inquire into issues arising on the appeal, and report findings to the court which can then be acted upon.¹⁶³ This would be particularly helpful on issues of science, where there has been a shift in views since the trial.¹⁶⁴

Several further routes exist for a fresh judicial reconsideration. Under s. 696.3(3), the federal Minister of Justice can direct a new trial or refer the case to the court of appeal “if the Minister is satisfied that there is a reasonable basis to conclude that a miscarriage of justice likely occurred”.¹⁶⁵ The Minister is also empowered to refer the case to the court of appeal for its opinion on any question arising on an application for relief from Minister.¹⁶⁶ And it should be noted that despite the absence of statutory authority, the courts have concluded that they are empowered under the common law and by virtue of the *Charter of Rights and Freedoms* to grant bail to serving inmates pending a s. 696.1 application to the Minister of Justice.¹⁶⁷

will have to be advanced in terms of an overriding need to avoid a miscarriage of justice: *R v. Truong* 2007 ABCA 127 at para. 6; *R v. Arganda* 2011 MBCA 24 at para. 6-7.

¹⁵⁹ *R v. C.M.*, 2010 ONCA 690; *R v. Brant*, 2011 ONCA 362; *R v. Kumar*, 2011 ONCA 120; *R v. Hanemaayer*, 2008 ONCA 580; *R v. Sherret-Robinson*, 2009 ONCA 886.

¹⁶⁰ *R v. Tammy Marie Marquardt*, before the Supreme Court of Canada: <http://www.scc-csc.gc.ca/case-dossier/cms-sgd/dock-regi-eng.aspx?cas=33008>, and subsequently before the Court of Appeal: 2011 ONCA 281

¹⁶¹ <http://www.scc-csc.gc.ca/case-dossier/cms-sgd/dock-regi-eng.aspx?cas=33008>

¹⁶² *R v. Marquardt*, 2011 ONCA 281 at para. 24

¹⁶³ Section 683. (1) (e) and (f); and see: *R v. Starr* (2002), 167 C.C.C. (3d) 193 (Man. C. A.), at para. 24.

¹⁶⁴ Section 683. (1) (e) (i)

¹⁶⁵ Section 696.3(3) *Criminal Code*

¹⁶⁶ Section 696.3(2) *Criminal Code*

¹⁶⁷ *R v. Phillion*, [2003] O.J. No. 3422 (Ont. Sup. Ct. J.); *Driskell v. Canada*, 2004 MBQB 3; *Unger v. Canada*, 2005 MBQB 238; *R v. Ostrowski*, 2009 MBQB 327

Where fresh evidence is tendered on appeal, the following four criteria should in general be met: the evidence must be relevant and bear upon a decisive issue in the case; it must be reasonably capable of belief; it must be such that it could have affected the result at trial; and the evidence should not generally be admitted if, by due diligence, it could have been tendered at trial. There is, however, a long and growing line of appellate authority that provides an important caveat in relation to the “due diligence” criterion: it will not be applied as strictly in criminal cases, *and it must yield if its application would result in a miscarriage of justice*.¹⁶⁸ Even where the accused purported to admit to the offence at trial through the entry of a guilty plea, “[the] court retains a discretion to be exercised in the interests of justice, to receive fresh evidence to explain the circumstances that led to the plea and that demonstrate a miscarriage of justice.”¹⁶⁹

The Government of Canada, likewise, has been prepared to order References to the Supreme Court where there was reason to believe that a wrongful conviction may have occurred¹⁷⁰, and in no less than seven separate cases provincial governments have ordered judicial commissions of inquiry to determine why a miscarriage of justice occurred.¹⁷¹

The high-water mark in the granting of a judicial pathway to remedy an apparent miscarriage of justice must surely be the case of Ivan William Mervin Henry, decided by the B.C. Court of Appeal in 2010.¹⁷² In 1983, Henry was charged with and convicted of 10 counts of sexual assault involving eight complainants. The Crown’s case was razor-thin; perhaps non-existent. Henry had insisted on representing himself. After conviction, he was declared a dangerous offender, and sentenced to an indefinite period of imprisonment.

For the next three decades, Henry asserted his innocence in a battery of applications before the trial court, Court of Appeal, and the Supreme Court of Canada. He was unsuccessful in all of them.¹⁷³

The sands started to shift in 2002. Police re-investigated his case. Prosecutors started to believe that he may have been innocent. British Columbia appointed an independent counsel to investigate the case; he recommended that the Crown not oppose a motion to re-open the case – even though the verdict had literally been etched in stone for 25 years.

¹⁶⁸ *R v. Palmer* (1980), 50 C.C.C. (2d) 194 (S.C.C.); *R v. B (G.D.)*, [2000] 1 S.C.R. 520; *R v. Warsing*, [1998] 3 S.C.R. 579; *R v. Appelton* (2001), 156 C.C.C. (3d) 321 (Ont. C.A.); *R v. Mullins-Johnson*, 2007 ONCA 720; *R v. Marquardt*, 2011 ONCA 281

¹⁶⁹ *R v. C.M.*, 2010 ONCA 690 at para. 10; and see the cases cited above, at footnote 159

¹⁷⁰ *Reference re Regina v. Coffin*, [1956] S.C.R. 191; *Reference re Steven Murray Truscott*, [1967] S.C.R. 309; *Reference re Milgaard*, [1992] 1 S.C.R. 866.

¹⁷¹ Donald Marshall, Jr. (Nova Scotia, 1989); Guy Paul Morin (Ontario, 1998); Thomas Sophonow (Manitoba, 2001); Ronald Dalton, Gregory Parsons and Randy Druken (Newfoundland and Labrador, 2006); James Driskell (Manitoba, 2007); David Milgaard (Saskatchewan, 2008) and the Inquiry into Pediatric Forensic Pathology in Ontario (2008).

¹⁷² *R v. Henry*, 2010 BCCA 462

¹⁷³ *Ibid.*, paras. 20-23

In 2010, the British Columbia Court of Appeal ruled that despite an intensive judicial examination of the case during the preceding three decades, including two unsuccessful appeals to the Court of Appeal itself,¹⁷⁴ the interests of justice required “[...] that the order dismissing (this) appeal in 1984 be set aside and [this] appeal (be) re-opened for consideration on its merits.”¹⁷⁵

Because a miscarriage of justice appeared to have occurred, the Court was prepared to overlook what might otherwise have been significant procedural impediments, including the principle of finality, and provide a route back into the court system in circumstances that it described as “exceptional”.¹⁷⁶

Put simply, process was not allowed to outweigh considerations of fairness. After a full hearing before the Court of Appeal, the appeal launched in 1984 was re-opened 26 years later, the convictions were quashed, and acquittals were entered on all counts.¹⁷⁷

The price to pay in Canada may be that some cases are never really over. Verdicts that were anchored on evolving science, medicine or technology may be subject to a continuing re-assessment as the disciplines continue to be refined or change. But that’s an acceptable result for any criminal justice system that recognizes the truth-seeking function of the trial process, and seeks to avoid miscarriages of justice by not allowing the principle of finality to trump the importance of having a fair trial in the first place.

¹⁷⁴ The first, in 1984, was dismissed for want of prosecution; the second, in 1997, was dismissed on the basis that the notice of appeal raised issues of fact, not law: *R v. Henry*, supra, at paras. 20 and 23. See *R v. Henry*, 1997 CanLii 3139 (BCCA)

¹⁷⁵ *R v. Henry*, 2010 BCCA 462 at para. 32.

¹⁷⁶ *Ibid.*, para. 23 and 32

¹⁷⁷ *Ibid.*, para. 155. It should be noted that this is not a case where forensic science changed; rather, the case is cited to provide an illustration of how the courts can find a *route* to provide a remedy where the facts call out for one.

