

The **cool** crucible

**Incriminating expert opinion
evidence and the criminal trial**

Professor Gary Edmond

School of Law & Program on
Expertise, Evidence & Law

THE UNIVERSITY OF
NEW SOUTH WALES



Backdrop

Overarching goals of the criminal trial:

- Accurate outcome (or rectitude)
- Avoid convicting the innocent, and
- Fairness

and increasingly

- 'efficiency'

See Twining, Rethinking evidence (1990)

Why do courts permit the state to adduce and rely upon incriminating expert opinion evidence that is either unreliable or of unknown reliability in circumstances where we could obtain some indication of its reliability and/or the proficiency of the witnesses?

Allowing investigators and state employed experts to express their incriminating opinions without evidence of their value would seem to be difficult to reconcile with the goals of rectitude and fairness as well as the premium placed on not convicting the innocent.

Four contentions and some caveats

1. Courts have been largely unsuccessful in their attempts to manage forensic science and medical evidence.
2. Courts, as constituted, cannot be expected to regulate forensic science and medicine.
3. Courts have been largely uninterested in, and not well positioned to identify or assess, research supporting expert opinions.
4. Courts have been remarkably disinterested in empirical research about their practices (i.e. non-reflexive).

Caveats

The adversarial criminal trial **on trial**

*See Edmond & Roberts (2011) 33 Sydney Law Review (forthcoming);
Edmond & Roach, (2011) 61 U Toronto Law Journal (forthcoming)*

Evidence law and trial 'safeguards'

- Admissibility standards (and weight)
- *Ad hoc* experts
- Discretionary and mandatory exclusions
- Expression of results
- Cross-examination
- Rebuttal (or defence) experts
- Judicial warnings, instructions & directions
- The lay jury
- Appellate review

Admissibility standards

79 Exception: opinions based on specialised knowledge

If a person has **specialised knowledge** based on the person's training, study or experience, the opinion rule does not apply to evidence of an opinion of that person that is wholly or substantially based on the knowledge.

Uniform Evidence Law (most of Australia)

Admissibility: section 79

‘The focus must be on the words “specialised knowledge”, **not on the introduction of an extraneous idea such as “reliability.”**’

R v Tang [2006] NSWCCA 167 at [137], per Spigelman CJ.

See Edmond, (2008) 31 *UNSW Law Journal* 1

Admissibility: The basis rule (technical)

A technical version associated with *Makita* (though read down by the Full Federal Court) requiring the facts underpinning the opinion to be proved by admissible evidence.

See also: Sydneywide Distributors Pty Ltd v Red Bull Australia Pty Ltd [2002] FCAFC 157; *Alphapharm Pty Ltd v H Lundbeck A/S* [2008] FCA 559.

These are all CIVIL appeals.

Admissibility: The basis rule (traditional)

‘It is a primary duty imposed on experts in giving opinion evidence to furnish the trier of fact with the criteria to enable the evaluation of the expert conclusion:

Makita (Australia) Pty Ltd v Sprowles. ...

The “bare *ipse dixit*” of a scientist upon an issue in controversy should carry little weight: *Davie v Magistrates of Edinburgh* (1953).’

Ad hoc experts

**Oxymoronic law (or the
democratisation of expertise)?**

See Edmond & San Roque, (2009) 33 *Criminal Law Journal* 8



Expert's photoboard from R v Tang [2006] NSWCCA

Mandatory and discretionary exclusions

137 Exclusion of prejudicial evidence in criminal proceedings

In a criminal proceeding, the court must refuse to admit evidence adduced by the prosecutor if its **probative value is outweighed by the danger of unfair prejudice to the defendant.**

See also section 135

Uniform Evidence Law (most of Australia)

How does the judge determine probative value when deciding whether to exclude?

‘The trial judge can only exclude the evidence ... where, **taken at its highest**, its probative value is outweighed by its prejudicial effect ...’

R v Carusi (1997) 92 A Crim R 52 at 65-66, per Hunt J. See also *R v Shamouil* [2006] NSWCCA 112 .

Admissibility

- Limited attention to validity and reliability of incriminating expert opinion evidence.
- ‘Specialised knowledge’ vague – so not adequately policed and slippage around ‘fields’ and ‘expertise’.
- Most admissibility challenges are unsuccessful (for the defence).
- Most courts prefer to admit incriminating expert evidence and leave the jury to determine its ‘weight’ (or probative value) – even when able to be determined
- Sometimes judges impose constraints on what can be said ...

Expression of opinions (and jury)

Latent fingerprints: Individualisation. [Jury cannot compare itself]

DNA profiles: probabilistic. [Jury cannot compare itself]

Incriminating images (e.g. CCTV): No individualisation, just **similarities** (and, in theory, differences). [Jury can compare itself]

Incriminating voices: individualisation, even across languages. [Jury can compare itself]

And so on ...

Implications: 'match'-making

Definitions from the American Board of Forensic Odontology

TESTIMONY	OFFICIAL DEFINITION	JURY INTERPRETATION
Reasonable Scientific Certainty	Highest order of certainty; no reasonable probability of error	70.7
Probable	More likely than not; most people could not leave such a mark	57.4
Consistent (with)	Similarity, but no degree of specificity, like match; may or may not be	75.6
Match	Some concordance, some similarity, but no expression of specificity intended; generally similar but true for large percentage of population	86.0

McQuiston & Saks, (2008) 59 *Hastings Law Journal* 1159

Cross-examination: The greatest engine?

‘... studies have found little or no ability of cross-examination to undo the effects of an expert’s testimony on direct-examination, even if the direct testimony is fraught with weaknesses and the cross is well designed to expose those weaknesses. ... it is unlikely that defence cross-examination will reduce the impact of the forensic expert witnesses’s direct testimony.’

McQuiston et al, (2009) 33 *Law & Hum. Behavior* 436-453.

Rebuttal experts: Asymmetry and access

- In many areas of forensic science and medicine the defence is limited in resources and in its ability to access rebuttal experts.
- Some judges incorporate defence access to a rebuttal expert into their decision about the admissibility of incriminating opinion evidence.
- Overcoming the 'story model' (Pennington & Hastie 1992; Allen 1994)
- Facilitating cross-examination or allowing the defence to call rebuttal expertise does not make a trial fair. **Structural symmetry is not the same as substantial fairness.**

Rebuttal experts: Sometimes excluded

‘It does not however follow that the defence should have been permitted to call [a linguist] to give her expert opinion on the “methodology” ... The defining point for the rejection of her evidence was that it did no more than identify an alternative method of voice identification that was dependent upon acoustic analysis, without placing in issue that [police opinion evidence] which was led by the Crown.’

R v Madigan [2005] NSWCCA 170 at [107]-[109], per Wood CJ at CL.

Directions, warnings and instructions

- Rarely provide sufficient detail to rationally assist with evaluation (e.g. cross-lingual identification by interpreters as *ad hoc experts*).
- Most of the empirical evidence suggests that instructions are often incomprehensible, sometimes inconsistent, and may draw undesirable attention to unfairly prejudicial evidence and inappropriate forms of reasoning.
- Admissibility decisions are often tempered by the availability and **efficacy** of directions and warnings.
- Also a tension: 'The more directions and warning juries are given the more likely it is that they will forget or misinterpret some directions or warnings.'

KRM v The Queen (2001) 75 ALJR 550 at [37], per McHugh J

The lay jury: Abandoned?

- Too much questionable expert opinion evidence is simply left to the jury.
- The jury's fundamental Constitutional role is not undermined by: (a) the exclusion of unreliable expert evidence; (b) the exclusion of expert evidence of unknown reliability; (c) or by requiring the state to demonstrate the reliability of a technique.
- Experts influential even when mistaken: Kemp et al, (2009).
- Mixed evidence on whether judges perform better than lay juries: Groscup et al, (2002).

Appellate review of admissibility decisions

- Appellate courts tend to defer to trial judges, especially where they observe the demeanour of the witness.
- This does not make much sense in relation to expert opinion evidence where the reliability of the opinion and underlying technique are often open to empirical assessment.
- Appellate courts should be open to *de novo* review where they look to evidence supporting admissibility (and reliability).
- Appellate courts are arguably too deferential to juries.

Converging evidence

- Institutionalized Science (NAS Report) and critical scholarly interventions (from the early 1980s)
- Empirical Studies of *Daubert*
- Innocence Projects (DNA exonerations)
- Experimental (psychological) studies of mock trials, evidence, jurors and bias
- Observational studies

**STRENGTHENING FORENSIC SCIENCE IN
THE UNITED STATES:
A PATH FORWARD**

Committee on Identifying the Needs of the Forensic Science Community

**Committee on Science, Technology, and Law
Policy and Global Affairs**

**Committee on Applied and Theoretical Statistics
Division on Engineering and Physical Sciences**

**NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES**

**THE NATIONAL ACADEMIES PRESS
Washington, D.C.
www.nap.edu**

For lawyers the two major concerns from the NAS Report should be:

1. Questions about the knowledge base (i.e. research supporting many forensic science assumptions, techniques and opinions) and **forms of bias.**

National Academy of Science, *Strengthening Forensic Science in the United States* (2009)

‘With the exception of nuclear DNA analysis ... no forensic method has been rigorously shown to have the capacity to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source.’ (S-5-6)

‘The law’s greatest dilemma in its heavy reliance on forensic evidence, however, concerns the question of whether—and to what extent—there is science in any given forensic science discipline.’ (S-7)

If there is no knowledge base (or underlying research) in the US, then we can generally assume that there is no underlying research in Australia (and vice versa).

And,

Standards, accreditation and assurance are not credible substitutes for research.

2. The sceptical response to law:

‘The report finds that the existing legal regime—including the rules governing the admissibility of forensic evidence, the applicable standards governing appellate review of trial court decisions, the limitations of the adversary process, and judges and lawyers who often lack the scientific expertise necessary to comprehend and evaluate forensic evidence—is inadequate to the task of curing the documented ills of the forensic science disciplines.’ (NAS, 3-1)

US *Innocence Projects*



Analysis of incriminating evidence in DNA exoneration cases from Saks & Faigman (2008: 172).

(Note 1st, 2nd and 5th issues. Invalid forensic science evidence often inappropriately corroborates mistaken eyewitness evidence).

Innocence Projects

Review of 205 wrongful conviction cases

Type of Forensic Analysis	Cases with trial transcripts	Cases involving invalid science testimony	Percentage of cases with trial transcripts involving invalid science testimony
Serology	100	57	57
Hair comparison	65	25	38
Soil comparison	6	0	0
Fingerprint comparison	13	1	8
Bite mark comparison	6	4	67
Shoe print comparison	3	1	33
DNA testing	11	3	27
Voice comparison	1	1	100

See Garrett & Neufeld, (2009) 95 *Virginia Law Review* 1-97

Contextual bias (and suggestion)

Studies suggest that even highly trained forensic scientists following established protocols are likely to be influenced by (extraneous) information that is not relevant to their analysis (i.e. admissions or police beliefs).

Where recognised, Courts have a tendency to leave these issues to weight even though it can be difficult to usefully cross-examine or illustrate the potentially powerful and sometimes unconscious impact of such extraneous information.

See Dror et al, (2006) 156 Forensic Science International 74; Risinger et al, (2002) 90 California Law Review 1.

Other proposals for reform

- Court-appointed experts (or expert panels)
- Science courts
- Technically trained judges
- Single joint experts or parties' single expert
- Concurrent evidence* (the 'hot tub')
- Pre-trial meetings (without lawyers)
- Codes of conduct*

Inquisitorially-oriented and/or targeted toward bias rather than validity and reliability.

Suitability to adversarial criminal trial unclear.

Overview of law and legal safeguards

- Serious and ongoing tensions with fundamental criminal justice values: rectitude and fairness.
- Legal protections and safeguards are typically weak or ineffective (even in combination) – more formal than substantial.
- Informal burden shifting (from the state) or lowering standard of proof.
- The trial and its various safeguards does not provide a consistent check on unreliable incriminating expert evidence.
- Challenging the same techniques in trial after trial (and appeal) is an inefficient way of proceeding.

Implications/Recommendations?

- **No easy answers.**
- There is a need for reflexive admissibility jurisprudence that is attentive to the converging evidence, the limits of many forensic sciences, and legal institutional performances. (We should take note of the limitations of *Daubert* but also of our current practice.)
- **Admissibility decision making, and exclusion, is vitally important.**
- Determine admissibility separately.
- ‘Reliability’ should be read into ‘specialised knowledge’ (or ‘a body of knowledge or experience’ at common law). Determine actual probative value.
- ‘Field’ or ‘body of knowledge’, ‘experience’ and ‘qualifications’ should generally be pre-requisites, but will rarely be enough to satisfy a reliability threshold.

Demonstrable reliability

Prosecutors should not adduce and courts should not admit incriminating opinion evidence unless it is **demonstrably reliable**. That is, there should be independent support for the validity and accuracy of the technique. We should know whether the expert can actually do what they claim and have an idea about how often they are right.

As things stand, we cannot be confident that the liberal admission of incriminating expert evidence assists in producing factual rectitude or preventing the conviction of the innocent.

Thanks to

Ass Prof Kath Biber, UTS
Ass Prof Emma Cunliffe, UBC
Ass Prof David Hamer, Sydney
Dr Richard Kemp, UNSW
Dr Kristy Martire, UNSW
Dr Geoffrey Morrison, UNSW
Dr Glenn Porter, UWS
Mehera San Roque, UNSW
Professor Kent Roach, U of Toronto
Ass Prof Andy Roberts, Warwick & Melb.

US Federal and most state courts *Daubert* (1993) and *Kumho* (1999)

Require opinion evidence based on 'scientific, technical and other specialized knowledge' to be *reliable*. 'Reliability' determined using criteria such as:

1. Testing
2. Peer review and publication
3. Known or potential error rate
4. 'General acceptance' (*US v Frye*, 1923)
5. Standards applied.

Federal Rules of Evidence (1975) revised in 2000 to make the need for 'reliability' explicit.

Canada

At common law, ***R v Mohan* (1994) 2 SCR 9** required: (a) relevance; (b) necessity in assisting jury; (c) no exclusionary rule; (d) properly qualified expert.

In response to experience with wrongful convictions the Supreme Court stated: 'Reliability is an essential component of admissibility' and applies to novel and existing techniques: ***R v Trochym* (2007) 1 SCR 239**.

Generally 'reliability' informed by *Daubert* criteria:

R v J-LJ (2000) 2 SCR 600; *R v DD* (2000) 2 SCR 275; *Re Truscott* [2007] ONCA 575; *The Goudge Report* (2008)

See Edmond & Roach, (2011) 61 *U Toronto Law Review*

England and Wales

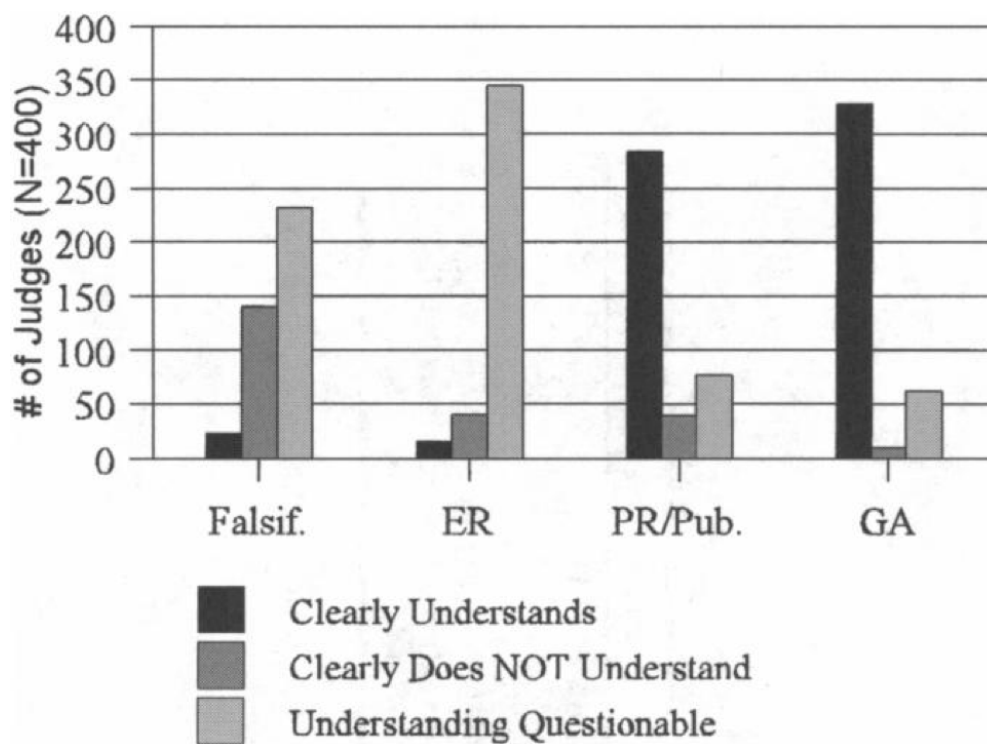
Very liberal at common law. Police and those with qualifications allowed to express incriminating opinions based on watching or listening to recordings.

Law Commission review (2009) discussed 4 options:

- (1) Exclusionary discretion without guidance.
- (2) Exclusionary discretion with guidance.
- (3) Consensus among experts (deference: *Frye*-style).
- (4) **Judicial assessment of evidentiary reliability**
(‘a validity-based admissibility test’).

Law Commission prefers option 4, and originally proposed a distinction between opinions based on science and those based on experience.

Judicial **understanding** of the *Daubert* criteria



Dobbin et al, (2007) 28 *The Justice System Journal* 1-15

Lay judges and the *Daubert* criteria

'*Daubert* seemed to suggest that an expert's methods, not only his or her credentials, should be evaluated. However, the most important rating on sources of expertise were the experience and education of the proffered expert. Sources of knowledge which indicate methodological reliability were rated as less important ... judges may be unable to determine what factors are important in assessing scientific reliability, particularly when research is the basis for an expert opinion.'

Federal (n = 372) & state (n = 321) appeal decisions

Groscup et al, (2002) 8 *Psychology, Public Policy & Law* 339

Curious incongruities: Inversion of principle?

In the US, where there are civil juries, trial judges and appellate courts tend to be more attentive and exclusionary in their responses to expert evidence adduced by plaintiffs than incriminating expert opinion evidence adduced by the state.

Interestingly, studies suggest that the state is much more likely to prevail in its challenges to the defendant's rebuttal or defence expert evidence than the defendant in challenging the state's evidence.

See Groscup et al, (2002); Risinger (2000).

Why do courts permit the state to adduce and rely upon incriminating expert opinion evidence that is either unreliable or of unknown reliability in circumstances where we could obtain some indication of its reliability and/or the proficiency of the witnesses?

Allowing investigators and state employed experts to express their incriminating opinions without evidence of their value would seem to be difficult to reconcile with the goals of rectitude and fairness as well as the premium placed on not convicting the innocent.

Determine admissibility separately from other evidence

The admissibility of incriminating expert evidence should be assessed independently of other evidence, no matter how incriminating. The question is whether the technique is valid and reliable, not whether the opinion of an expert is consistent with other incriminating evidence (of which they probably were aware).

Courts should not discount the potentially powerful effects of cognitive bias. Where investigators have not endeavoured to reduce or eliminate them even expert evidence will be contaminated.



194RNS07-2

Exhibit PRH/5028 0 - Face 2



194RNS07-2

Exhibit PRH/5028 0 - Face 2

UK

Atkins v The Queen
[2009] EWCA Crim 1876

Level	Description
0	Lends no support
1	Lends limited support
2	Lends moderate support
3	Lends support
4	Lends strong support
5	Lends powerful support

See Note, 'Atkins v The Emperor' (2010) 14 *International Journal of Evidence & Proof* 146-166.

