

# LEGAL EAGLES CLE

Continuing Legal Education for Criminal Lawyers

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PRESENTED AT LEGAL EAGLES CLE CONFERENCE

LUANG PRABANG, LAOS 15/09/2016-20/09/2016

## *CURRENT ISSUES IN EXPERT EVIDENCE FOR CRIMINAL JURY TRIALS*

### **Introduction**

Expert evidence, its admissibility, and the probative value that it commands continue to be vital, practical issues in the conduct of Australian criminal trials. In important decisions the High Court has recently intervened in respect of the test for admissibility of novel scientific evidence and has provided important guidance in respect of the discretion to exclude expert and other evidence. This has important repercussions for a line of authority which had been generated in Victoria in respect of DNA and other expert evidence.

In studies in 1999 and 2001 undertaken on behalf of the Australian Institute of Judicial Administration (AIJA) much was learned from surveys of judges<sup>2</sup> and magistrates<sup>3</sup> about the issues that troubled them about the adducing of expert evidence. Judicial officers particularly identified partisanship amongst a significant cohort of experts and a concern that errors may be made in decision-making by jurors when such partiality resulted in an inability to discern and evaluate the reasoning processes engaged in by experts. Another issue that was highlighted was a concern about the lack of clarity in the reports of too many experts, a culture of assertion –

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<sup>2</sup> See Ian Freckelton, Prasuna Reddy and Hugh Selby, *Australian Judicial Perspectives on Expert Evidence: An Empirical Study* (AIJA, Melbourne, 1999).

<sup>3</sup> See Ian Freckelton, Prasuna Reddy and Hugh Selby, *Australian Magistrates' Perspectives on Expert Evidence: A Comparative Study* (AIJA, Melbourne, 2001).

what Sir Owen Dixon called the *ipse dixit* – and a failure to distinguish between opinions and facts and to delineate between opinions and assumptions.

The AIJA studies were further developed in a study published in 2016<sup>4</sup>. Judges, jurors, experts, barristers and litigation solicitors from 55 criminal trials in Queensland, New South Wales and Victoria were surveyed to understand better how expert evidence was evaluated and used. The results of the study shed significant new empirical light on how expert evidence can most effectively be adduced in criminal trials.

This paper reviews recent developments in relation to expert evidence admissibility and summarises the fruits of the most recent AIJA study.

## **Admissibility**

The approach of Australia’s Uniform Evidence scheme, by contrast with the law in many countries, including Laos<sup>5</sup>, does not attempt to define who an expert is. Rather, it focuses upon whether a witnesses possesses a particular form of knowledge and what the relationship is between opinions that they propose to express and that knowledge

79. (1) 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 that knowledge.

(2) To avoid doubt, and without limiting subsection (1):

(a) a reference in that subsection to specialised knowledge includes a reference to specialised knowledge of child development and child behaviour (including specialised knowledge of the impact of sexual abuse on children

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<sup>4</sup> See Ian Freckelton, Jane Goodman-Delahunty, Jacqueline Horan and Blake McKimmie, *Expert Evidence and Criminal Jury Trials* (OUP, Oxford, 2016).

<sup>5</sup> See Article 31 of the Lao Amended Law on Civil Procedure: “The expert is an individual who has knowledge and experience in a specific field and is recognized by a competent institution and must be able to clarify issues relating to his field of expertise”:  
[http://vientiane.thaiembassy.org/upload/pdf/law/02-economy/5\\_Law-on-Civil-Procedure.pdf](http://vientiane.thaiembassy.org/upload/pdf/law/02-economy/5_Law-on-Civil-Procedure.pdf)

and their development and behaviour during and following the abuse); and

(b) a reference in that subsection to an opinion of a person includes, if the person has specialised knowledge of the kind referred to in paragraph (a), a reference to an opinion relating to either or both of the following:

- (i) the development and behaviour of children generally;
- (ii) the development and behaviour of children who have been victims of sexual offences, or offences similar to sexual offences.

80. Evidence of an opinion is not inadmissible only because it is about:

- (a) a fact in issue or an ultimate issue; or
- (b) a matter of common knowledge.

Whether the quality of expert evidence constitutes an additional admissibility criterion or at least a consideration in that regard has been unclear for a number of years. The situation is complicated in Australia by the fact that reliability of expert evidence has been incorporated as an indicium or criterion for admissibility internationally in:

- **The United States:** *Daubert v Merrell Dow Pharmaceuticals Inc*, 509 US 579 (1993);
- **England and Wales:** Practice Direction 33A.5 and 33A.6;
- **Canada:** *R v Trochym* [2007] 1 SCR 239;
- **New Zealand:** *R v Lundy* [2014] NZHC 2527 at [55]; and
- **India:** *Chaudhary v CBI*, H Ct of Delhi, 15 May 2009

The decisions of the High Court in *Honeysett v The Queen* [2014] HCA 29 and in *IMM v The Queen* [2016] HCA 14 go a significant way toward resolving the controversy as to whether the reliability of expert evidence should play a role in determining whether it should be admitted.

**The Honeysett Decision.** The use of facial mapping and body mapping based upon CCTV images has been controversial for a number of years in Australia, as well as in

the United Kingdom<sup>6</sup>. In 2014 the High Court in *Honeysett v The Queen* [2014] HCA 29 sought to resolve a number of issues that had arisen in respect of such evidence. It did so in the context of an attempt by the prosecution to adduce evidence from an anatomist, Professor Henneberg, about characteristics that he said were common to Honeysett and a robber of a suburban hotel. After Honeysett was convicted in the District Court of New South Wales he appealed to the Court of Appeal and then to the High Court where his arguments were principally that the trial judge had erred in admitting the evidence of Professor Henneberg

- as his evidence did not involve an area of specialised knowledge based on training, study or experience, as required under s79 of the *Evidence Act 1995* (NSW);
- because his opinion was not substantially based on that area of specialised knowledge, as required under s79 of the *Evidence Act 1995* (NSW); and
- on the basis that his evidence did not meet the basal state of relevance.

The majority judgment was delivered by French CJ, Kiefel, Bell, Gageler and Keane JJ. They found that Professor Henneberg's opinion was not based on specialised knowledge. This was in spite of his impressive credentials - he held doctoral and post-doctoral qualifications in biological anthropology and held the Wood Jones Chair of Anthropological and Comparative Anatomy in the School of Medical Sciences at the University of Adelaide and was very widely published.

Professor Henneberg expressed his opinion of the physical characteristics of Offender One on the CCTV in the following terms:

He is an adult male of ectomorphic (thin, 'skinny') body build. His shoulders are approximately the same width as his hips. His body height is medium compared to other persons, and to familiar objects (eg doorways) visible in the images from the [offence]. He carries himself very straight, so that his hips are standing forward while his back has a very clearly visible lumbar lordosis (the small of his back is bent forward) overhung by the shoulder area. Although the offender covers his head and

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<sup>6</sup> See generally Ian Freckelton and Hugh Selby, *Expert Evidence: Law, Practice, Procedure and Advocacy* (6<sup>th</sup> edn, Thomson-Reuters, Sydney, 2016, in press).

face with a cloth (what looks like a T-shirt) ... the knitted fabric is elastic and adheres closely to the vault of his skull (= braincase). This shows that his hair is short and does not distort the layout of the fabric. The shape of the head is clearly dolichocephalic (= long head, elongated oval when viewed from the top) as opposed to brachycephalic (= short head, nearly spherical). The offender is right-handed in his actions. ... Although most of the body of the offender is covered by clothing, head wrap and gloves, an area of naked skin above his wrist (between the glove and the sleeve) in images ... is visible and can be compared to the skin colour of a female hotel employee on the same images." (at [15])

His expression of opinion of the physical characteristics of the appellant was that:

[The appellant] is an adult male of ectomorphic (= slim) body build. His hips and shoulders are of approximately the same width. His stance is very straight with well marked lumbar lordosis and pelvis shifted forward. His skull vault is dolichocephalic when viewed from the top. Comparison of lateral (side) and front views of his head also indicates the head ... is long but narrow. His skin is dark, darker than that of persons of European extraction, but not 'black'. ... He is right-handed – uses his right hand to sign documents." (at [16])

Professor Henneberg's conclusion was that "[t]here is [a] high degree of anatomical similarity between [Offender One] and [the appellant]." (at [17]) His opinion was strengthened by the fact that he was unable to discern any anatomical dissimilarity between the two individuals.

Professor Henneberg's method of "forensic identification" was to look at an image of a person and form an opinion of the person's physical characteristics. As the majority judgment put it:

his opinion is not based on anthropometric measurement or statistical analysis. Professor Henneberg stated that statistical analysis may yield reliable results when anthropometric measurements can be taken or the photographs are taken at the same angle and in prescribed body positions. Surveillance images and standard police photographs are not of this standard. *He explained that his examination of images does not differ from that of a lay observer save that he is an experienced anatomist*

*and he has a good understanding of the shape and proportions of details of the human body.* (at [18]) [emphasis added]

Other experts were critical of Professor Henneberg's failure to explain how artefacts produced by lens distortion had been taken into account in the identification of the physical characteristics of Offender One. In addition, Dr Sutisno, who had figured in a number of other cases on the subject<sup>7</sup>, disputed Professor Henneberg's asserted capacity to make an assessment of an individual's height, gender, maturity, build and hair length. She considered that Professor Henneberg's conclusion respecting the last-mentioned characteristic was "purely guess work and extremely subjective" ((at [19]).

The High Court noted that s79 of the Uniform Evidence legislation states two conditions of admissibility: first, the witness must have "specialised knowledge based on the person's training, study or experience" and, secondly, the opinion must be "wholly or substantially based on that knowledge". It found that the reference to specialised knowledge in s79 is to be distinguished from matters of common knowledge and observed that specialised knowledge is knowledge which is outside that of persons who have not by training, study or experience acquired an understanding of the subject matter. It may be of matters that are not of a scientific or technical kind and a person without any formal qualifications may acquire specialised knowledge by experience. It found that the concept of knowledge was captured in Blackmun J's formulation in *Daubert v Merrell Dow Pharmaceuticals Inc*: "the word 'knowledge' connotes more than subjective belief or unsupported speculation. ... [It] applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds".<sup>8</sup>

The Court noted that the wording of s79 allows that it will sometimes be difficult to separate from the body of specialised knowledge on which the expert's opinion depends "observations and knowledge of everyday affairs and events". It is sufficient that the opinion is *substantially* based on specialised knowledge based on training,

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<sup>7</sup> See eg *R v Murdoch (No 4)* (2005) 195 FLR 421; (2007) 167 A Crim R 329; *R v Dastagir* [2013] SASR 26

<sup>8</sup> [1993] USSC 99; 509 US 579 at 590 (1993), cited in *R v Tang* [2006] NSWCCA 167; (2006) 65 NSWLR 681 at 712 [138] per Spigelman CJ.

study or experience. Citing *HG v The Queen* (1999) 197 CLR 414 at 427 (per Gleeson CJ), it held that an expert opinion must be presented in a way that makes it possible for a court to determine that it is so based.

It noted that Professor Henneberg's evidence was adduced as an item of circumstantial evidence to support a conclusion of identity. It determined that the appeal did not furnish an occasion to consider the issue of whether body mapping constitutes an area of specialised knowledge. As it was conceded that Professor Henneberg's specialised knowledge was confined to anatomy, the appeal also did not provide the occasion to consider the larger challenge respecting the requirement of an independent means of validation before an opinion may be based on specialised knowledge.

However, the majority concluded that Professor Henneberg's opinion was not based on his knowledge of anatomy:

Professor Henneberg's knowledge as an anatomist, that the human population includes individuals who have oval shaped heads and individuals who have round shaped heads (when viewed from above), did not form the basis of his conclusion that Offender One and the appellant each have oval shaped heads. That conclusion was based on Professor Henneberg's subjective impression of what he saw when he looked at the images. This observation applies to the evidence of each of the characteristics of which Professor Henneberg gave evidence. (at [43])

The Court tellingly observed (at [45]-[46]) that:

Professor Henneberg's evidence gave the unwarranted appearance of science to the prosecution case that the appellant and Offender One share a number of physical characteristics. Among other things, the use of technical terms to describe those characteristics – Offender One and the appellant are both ectomorphic – was apt to suggest the existence of more telling similarity than to observe that each appeared to be skinny.

Professor Henneberg's opinion was not based wholly or substantially on his specialised knowledge within s 79(1). It was an error of law to admit the evidence.

Thus, the High Court in *Honeysett* reiterated emphatically that where an opinion is not based on specialised knowledge, it should not be admitted under s79.

However, whether the *Honeysett* decision provides satisfactory tools for enabling discerning decisions about whether expert evidence should go before juries is highly questionable. Edmond<sup>9</sup> has observed that:

Our current admissibility jurisprudence does not engage usefully with ‘specialised knowledge’ and does not facilitate the rational assessment of a kind of evidence that has created difficulties for lawyers, judges and jurors for centuries. It is time that changed. It is time that s79(1) was interpreted and applied to enable questions identified in successive High Court decisions, to be answered in ways that make expert opinions conducive to assessment by judges and, more importantly, the trier of fact.

### ***Tuite v The Queen***

In the important 2015 decision of the Victorian Court of Appeal in *Tuite v The Queen* [2015] VSCA 148, the issue of the reliability of expert evidence as a condition precedent to its admissibility was squarely addressed. The question arose in the context of an appellant who was charged with aggravated burglary, rape, indecent assault and intentionally causing serious injury. A crucial part of the evidence against him was DNA profiling evidence presented in the orthodox way in the form of a likelihood ratio. It used a recently developed software package known as STRmix whose admissibility was challenged by Tuite on the basis that it had not been shown to be sufficiently reliable for use in criminal trials.

The argument for Tuite was based on the statement by Gaudron J in *Velevski v The Queen* (2002) 76 ALJR 402 at [82] that:

The concept of ‘specialised knowledge’ imports knowledge of matters which are outside the knowledge or experience of ordinary persons and which ‘is sufficiently

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<sup>9</sup> Gary Edmond, “A Closer Look at *Honeysett*: Enhancing Our Forensic Science and Medicine Jurisprudence” (2015) 17 *Flinders Law Journal* 288 at 329. See too Gary Edmond and Mehera San Roque, “*Honeysett v The Queen*: Forensic Science, ‘Specialised Knowledge’ and the Uniform Evidence Law” (2014) 26(2) *Sydney Law Review* 323.



organised or recognised to be accepted as a reliable body of knowledge or experience’.

The Court’s decision was given by Maxwell ACJ and Redlich and Weinberg JJA who applied the formulation of “knowledge” used in *R v Tang* (2006) 65 NSWLR 681 at [135]-[140] and endorsed by the High Court in *Honeysett v The Queen*. Thus, they concluded that “knowledge” is not confined to a body of facts but encompasses “ideas inferred from such facts ... on good grounds”. On this view, the witness’s ‘specialised knowledge’ will encompass both the facts of which he/she has knowledge and the “ideas” — inferences, hypotheses and theories — based on those facts.

The Court accepted that: “The obvious risk in a criminal trial when expert evidence is led from a forensic scientist is that a jury will give the evidence more weight than it deserves” and that “To prevent unfair prejudice of that kind, it is essential that the reliability of expert evidence be established to the court’s satisfaction (under s 137) before it is led.” It followed its own approach in *Dupas v The Queen* (2012) 40 VR 182 where it had held that if expert evidence has low probative value because of its unreliability, the evidence should be excluded under s137 of the Uniform Evidence legislation if there is a real risk that a jury would attach more weight to it than it deserved. It concluded that: “the touchstone of reliability for this purpose is proof of appropriate validation, both of the underlying science (where necessary) and of the particular methodology being employed.” (at [11]) By this it meant both in-house validation and independent external validation (at [102]) and explained (at [103]-[104]) that:

First, and most importantly, it means that the scrutiny of scientific evidence in the judicial process will apply the rigour which the discipline of science itself demands. As it was put in *Daubert*, evidentiary reliability will be based on scientific validity. Secondly, the trial judge considering scientific evidence will ordinarily be able to assess the sufficiency of validation — based on the published results of validation tests — without needing to acquire particular expertise in the relevant field of science. Thirdly, validation studies provide a framework which assists the judge — and, ultimately, the jury — to evaluate the evidence. Fourthly, this approach avoids what we consider to be the unworkable imprecision of a ‘general acceptance’ test, and will ensure that new developments and novel techniques are not excluded,

provided always that their scientific validity is established to the satisfaction of the court.

The Court found no error in the trial judge's conclusion that the jury would be able to come to a rational conclusion for preferring one expert opinion over another in the context of the expert evidence adduced, on the basis that the DNA evidence was presented logically and sequentially and explained to the jury "in very clear terms".

However, it identified merit in the establishment, preferably on a national basis, of an equivalent to the United Kingdom Forensic Science Regulator and Forensic Science Advisory Council.

The essence of the decision was that:

- (a) the question of the reliability of an expert opinion does not fall to be considered under s 79(1) of the *Evidence Act 2008* (Vic)
- (b) it was open to the trial judge, on the evidence before her, to conclude that the opinion evidence of the Crown witnesses was based upon their specialised knowledge, and was therefore admissible under s 79(1);
- (c) the question of the reliability of opinion evidence falls to be determined as part of the assessment which the Court undertakes for the purposes of s 137;
- (d) there was no error of principle in the trial judge's approach to the assessment of reliability for that purpose; and
- (e) it was open to the trial judge, on the evidence before her, to conclude that the probative value of the opinion evidence was not outweighed by the danger of unfair prejudice and hence that s 137 did not require its exclusion.

In light of the *Tuite* decision, then, the question remained whether reliability could be factored into the s137 determination. In *Tuite* the Victorian Court of Appeal had taken an approach at variance to that adopted by the New South Wales Court of Appeal in *R v Shamouil* [226] NSWCCA 112 and *R v XY* [2013] NSWCCA 121. It

was apparent that this required resolution by the High Court.

### **IMM v The Queen**

The resolution arrived in April 2016 when the High Court handed down its decision in *IMM v The Queen* [2016] HCA 14 which was an appeal from the Northern Territory arising from convictions of IMM for indecent dealing with a child and sexual intercourse with a child under the age of 16. The trial judge permitted tendency evidence to be adduced by the prosecution. The High Court reviewed the conflict in authority between *R v Shamouil* [226] NSWCCA 112 and *R v XY* [2013] NSWCCA 121, on the one hand, and *R v Dupas* [2012] VSCA 328, on the other. It did not refer to the *Tuite* decision. The New South Wales approach was not to have regard to credibility or reliability in application of the s137 discretion. The Court of Criminal Appeal of the Northern Territory took a similar approach in *IMM v The Queen* [2014] NTCCA 20 at [48]. By contrast, an expanded Court of Appeal in Victoria in *R v Dupas* considered that questions of reliability could be considered in evaluating the probative value of evidence.

In *IMM*, French CJ and Kiefel, Bell and Keane JJ in the majority decision preferred the New South Wales/Northern Territory approach and held that it was not intended under s137 that the trial judge undertake an assessment of the “actual probative value” of evidence at the point of admissibility:

A determination of the weight to be given to the evidence, such as by reference to its credibility or reliability, will depend not only on its place in the evidence as a whole, but on an assessment of witnesses after examination and cross-examination and after weighing the account of each witness against each other. (at [51])

They concluded that the Victorian test did not have its foundations in textual consideration of the Evidence Act but rather in a policy attributed to the common law:

The Evidence Act contains no warrant for the application of tests of reliability or credibility in connection with ss 97(1)(b) and 137. The only occasion for a trial judge to consider the reliability of evidence, in connection with the admissibility of evidence, is provided by s 65(2)(c) and (d) and s 85. It is the evident policy of the Act that, generally speaking, questions as to the reliability or otherwise of evidence are

matters for a jury, albeit that a jury would need to be warned by the trial judge about evidence which may be unreliable pursuant to s 165. (at [54])

However, they observed that “evidence which is inherently incredible or fanciful or preposterous” could be excluded, but held that if this was to be the outcome it would be because it failed to meet the requirement of relevance (at [59]).

However, there were strongly expressed dissenting views on the issue by Gageler J and also by Nettle and Gordon JJ. They concluded (Gageler J at [96]; Nettle and Gordon JJ at [140]) that an assessment of probative value necessarily involves considerations of reliability. Gageler J observed that:

To think of evidence that is relevant as evidence that has some probative value and to go on to think of probative value as a measure of the degree to which evidence is relevant is intuitively appealing. It is elegant; it has the attraction of symmetry. For many purposes, it may not be inaccurate. But it is not an exact fit for the conceptual framework which the statutory language erects. The statutory description of relevance requires making an assumption that evidence is reliable; the statutory definition of probative value does not provide for making that assumption. The conceptual framework which the statutory language erects therefore admits of the possibility that relevant evidence will lack probative value because it is not reliable. (at [96])

Nettle and Gordon JJ concluded that:

Evidence cannot affect the assessment of the probability of the existence of a fact in issue unless the evidence is rationally capable of being accepted. Hence, to determine whether evidence has the capacity rationally to affect the assessment of the probability of the existence of a fact in issue requires a determination of whether the evidence is rationally capable of acceptance. And for the court to determine whether it thinks that evidence is rationally capable of acceptance requires the court, among other things, to determine whether it thinks that the degree of reliability which it would be open to the jury rationally to attribute to the evidence is such that it will be open to the jury rationally to accept the evidence. It follows that, according to ordinary principles of statutory construction, there is no warrant for reading s 97 or the definition of "probative value" in the Dictionary to the Act as involving an

assumption that evidence will be accepted. (at [140])

Thus, a slim majority of the High Court has ruled that reliability of expert opinions is not a consideration going to probative value which can weigh in the balance in the exercise of the determination under s137. This means that reliability neither arises under decision-making under s79 or under s137. It leaves Australian law at significant variance from that in the United States, the United Kingdom, Canada, New Zealand and India. Reliability goes to the weight that is ultimately given to expert evidence by the trier of fact, not to the threshold decision of admissibility. The risk that results is that evidence which is scientifically defective will go before jurors, the sole protection being the quality of the cross-examination that exposes its deficits. Whether this is sufficient as a check and balance is highly doubtful.

### **The 2016 AIJA Study**

The following section reviews the principal outcomes from the 2016 study into expert evidence in criminal jury trials.

#### **(1) The role of jurors**

The capacity of jurors to grapple effectively with complex and sometimes conflicting expert evidence is controversial and far from clear.<sup>10</sup> It depends upon a number of factors. Roberts and Zuckerman have identified that ‘the distinctive nature of the facts to which experts testify presents a fundamental choice in the reception of scientific evidence between juror education and juror deference.’<sup>11</sup> This involves either focusing upon the threshold decision of which expert evidence is permitted before jurors by a sophisticated enunciation of exclusionary rules of admissibility or enhancing the capacity of jurors by procedural reform to undertake their role and trusting them to do it adequately, or both.<sup>12</sup>

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<sup>10</sup> See e.g. Neil Vidmar and Shari S. Diamond, ‘Juries and Expert Evidence’, *Brooklyn Law Review* 66, no 4 (2001) 1121.

<sup>11</sup> Paul Roberts and Adrian Zuckerman, *Criminal Evidence*, 2nd edn. (Oxford: Oxford University Press, 2010), p473.

<sup>12</sup> See Oriola Sallavaci, *The Impact of Scientific Evidence in the Criminal Trial: The Case of DNA Evidence* (New York: Routledge, 2014); see also Fiona Cownie, Anthony Bradney, and Mandy Burton, *English Legal System in Context* (Oxford: Oxford University Press, 2013).

Studies have documented jurors' difficulties in evaluating conflicting testimony by expert witnesses, with some suggesting under-utilization of such evidence<sup>13</sup> and others suggesting undue deference to it.<sup>14</sup> It may be that jurors are more persuaded by highly complex expert evidence and that when testimony is less complex, they are able to focus more upon the substance of evidence and less on extraneous factors such as expert credentials.<sup>15</sup> However, the findings of 2016 AIJA project suggest that jurors are generally aware of the potential challenges posed by expert testimony, and that extraneous extra-legal factors play at most a modest role in influencing jurors' evaluations of that testimony. Experts who participated in the study appeared to be aware of the problems posed by complex evidence and actively attempted to minimize the difficulties for jurors. This had outcomes in how they write their reports and the way in which they give oral evidence in court. Judges reported intervening when evidence was expressed in a manner that they thought impacted adversely on the capacity of jurors to understand and evaluate the evidence. The findings of the project indicated that most jurors were capable of deciding complex cases involving expert evidence as long as, and this was a major proviso, they received appropriate support from the court.

## 2) Selecting experts and admitting expert evidence

### (a) *Expert characteristics*

In terms of experts who are selected by the parties to criminal litigation the AIJA study findings revealed that the domain of expert witnesses remains male-dominated; well over two thirds of the witnesses sampled in the project were men. One possible reason for the disproportionate selection of male experts may be the gender composition of the professions included as experts. A second reason, which the project findings did address, was the perception of male experts as more influential. Aside from community stereotypes and prejudices, there may be a number of reasons for this, including witness confidence, speaking styles, and customary eye contact, as

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<sup>13</sup> See e.g. David L Faigman and AJ Bagkioni Jr, 'Bayes' Theorem in the Trial Process: Instructing Jurors on the Value of Statistical Evidence', *Law and Human Behavior* 12, no 1 (1988) 1.

<sup>14</sup> See e.g. Laurence H Tribe, 'Trial by Mathematics: Precision and Ritual in the Legal Process', *Harvard Law Review* 84, no. 6 (1971) 1329.

<sup>15</sup> See Joel Cooper, Elizabeth A. Bennett, and Holly L. Sukel, 'Complex Scientific Testimony: How Do Jurors Make Decisions?' *Law & Human Behavior* 20, no. 4 (1996) 379; Daniel A. Krauss and Joel D. Lieberman, *Jury Psychology: Social Aspects of Trial Processes Psychology in the Courtroom*, vol. 1 (Dartmouth: Ashgate, 2012), p. 193.

well as other features related to demeanour,<sup>16</sup> all of which have the potential to impact upon perceptions of credibility, trustworthiness, and reliability. Although participants did not explicitly say that they found male experts more credible than female experts, the correlations between expert gender and scores on the Witness Credibility Scale showed that male experts were generally perceived to be more credible.

On the issue of selection of experts based on gender with the goal of maximizing the credibility of an expert witness, however, it is worth considering research showing that the influence of expert gender on the persuasiveness of an expert witness is dependent on a range of other factors. For example, when an expert's gender matches the inferred knowledge domain of the case itself, then the expert will be regarded as more persuasive, even if that knowledge domain is not the area of expertise for that expert.<sup>17</sup> Likewise, use by the expert of a language style that is more consistent with gender-related stereotypes about language can increase an expert's persuasiveness.<sup>18</sup> Simply selecting male experts to maximize the credibility of the expert evidence is not supported by empirical evidence.<sup>19</sup> The full context of the expert evidence needs to be taken into account in relation to the gender of the expert.

Expert credentials and experience in the courtroom were identified as important in determining how receptive jurors were toward experts and expert evidence. Jurors were more positively disposed toward experts who were perceived to have stronger credentials. The more highly educated the prosecution expert was, the more that jurors thought the prosecution had a strong case, the less difficulty jurors reported in understanding the expert, and the more that jurors thought the expert's evidence had an impact on their verdicts. These findings differed from what judges reported in the 1999 AIJA survey, where only 3.44% of judges ( $n = 13$ ) thought that experts'

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<sup>16</sup> Elaine D. Ingulli, 'Trial by Jury: Reflections on Witness Credibility, Expert Testimony, and Recantation', *Valparaiso University Law Review* 20 (winter 1986) 145.

<sup>17</sup> Regina A. Schuller, Deborah J. Terry, and Blake M. McKimmie, 'The Impact of Expert Testimony on Jurors' Decisions: Gender of the Expert and Testimony Complexity', *Journal of Applied Social Psychology* 35, no. 6 (June 2005) 1266. Cp James V Couch and Jennifer N Sigler, 'Gender of the Expert Witness and the Jury Verdict', *The Psychological Record* 52 (2002) 201.

<sup>18</sup> Blake M. McKimmie and others, 'It's Not What She Says, It's How She Says It: The Influence of Language Complexity and Cognitive Load on the Persuasiveness of Expert Testimony', *Psychiatry, Psychology and Law* 20, no.4 (2013) 578.

<sup>19</sup> See Kimberly McCall, 'When Choosing an Expert Witness, What's Important? Gender or Expertise' *Attorney At Law Magazine* (2015): <http://www.attorneyatlawmagazine.com/las-vegas/when-choosing-an-expert-witness-whats-important-gender-or-expertise/>

educational qualifications were amongst the three most persuasive factors to jurors in assessing oral expert evidence.<sup>20</sup> These two sets of findings are not necessarily inconsistent. Due to the expectations associated with the role of being a juror, there is social pressure for jurors to appear attentive to the evidence as it is given, and so observers such as judges may arrive at a misplaced belief in what jurors are attending to and being influenced by. This issue has been acknowledged and studied regarding judicial perceptions of jury understanding of jury directions.<sup>21</sup> It may bear further evaluation and examination.

The influence of a related expert attribute—level of experience in the courtroom—was less straightforward. Again, this was an issue that received minimal priority in the 1999 survey of judges, with only 7.94% of respondents ( $n = 30$ ) numbering prior experience as an expert witness amongst the three most persuasive factors for jurors when experts give evidence. Interviewees in the 2016 project made a slightly different point: some reported concerns about the ability of experts with limited experience to give expert evidence effectively in the courtroom. Judges, too, made the subtle observation that the level of experience of an expert in testifying in court could influence the clarity of communication of the expert in testifying<sup>22</sup> and accordingly the jury's comprehension of the expert evidence. Interviewees noted, however, that many of the problems associated with less experienced experts seemed to originate from the way the experts were questioned by counsel.

Concerns about the performance of some of the more experienced experts emerged, including their ability to confine their opinions to their area of expertise, and how they responded to questioning. The analysis of the credibility ratings suggested that experience in the courtroom (frequency of appearances over the previous twelve months) was unrelated to higher or lower ratings of credibility, but was related to the amount of disagreement in jurors' ratings of credibility. Importantly, and in some respects counter-intuitively, the more times an expert had appeared in court the

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<sup>20</sup> Ian Freckelton, Prasuna Reddy, and Hugh Selby, *Australian Judicial Perspectives on Expert Evidence: An Empirical Study* (Melbourne: AIJA, 1999) 152.

<sup>21</sup> Blake M. McKimmie, Emma Antrobus, and Chantelle Baguley, 'Objective and Subjective Comprehension of Jury Instructions in Criminal Trials'. *New Criminal Law Review: An International and Interdisciplinary Journal* 17, no. 2 (Spring 2014) 163.

<sup>22</sup> This was the characteristic regarded as most valuable by judges (36.51%,  $n = 138$ ) in expert evidence in the 1999 AIJA survey.



greater disagreement there was about the expert's credibility. Experts with a moderate level of experience in the courtroom were best received. The total number of years that the expert had worked in their profession had no influence on perceptions of their credibility, nor did the expert's age.

### (3) Presentation of expert evidence

#### *(a) Pre-trial conferences with legal counsel*

Responses in this project from judges and trial counsel and litigation solicitors identified inadequate preparation of expert witnesses in the form of pre-trial conferences as problematic. In some instances this was the product of lack of industry; in others it seemed reflective of usual practice. Some on the defence side ascribed it to the fact that pre-trial conferencing was not paid for by legal aid services and a few indicated that expert witnesses were not as amenable to consultation as would be preferable. Whatever the cause, if counsel calling an expert witness is not adequately apprised of the subtleties or shades of grey in an expert's opinions, or even the fact that the expert may, to some degree, have reconsidered their views in light of the passage of time, or reading the reports of other experts, problems may well emerge at trial.

These situations were shown to be highly adverse (and potentially embarrassing) for the party calling the witness or, more subtly, may result in the expert being unable to communicate their views or reasons for them effectively, because the appropriate questions are not asked. Further, if counsel have not taken the time to understand the nuances of the expert evidence by pre-trial conferences with their own expert, let alone the expert(s) for the other side, as they can on the basis of there being no property in a witness, they are less likely to be able to formulate a strong case theory or undertake the process of cross-examination as effectively as they should.

#### *(b) Sequencing of the evidence of expert witnesses*

The familiar and orthodox methods of adducing expert evidence have come under scrutiny. In the civil domain the options of court-appointed experts, single experts,

and referees have continued to be mooted.<sup>23</sup> In criminal trials, though, such a level of intrusion by judges into the rights of the parties, in particular accused persons, has been regarded as inappropriate. However, the need for courts to be more efficient in their processes, to ensure a ‘fair playing field’ and to facilitate the capacity for sound decision-making by jurors, has generated an impetus for change.

A number of procedural responses have been forthcoming. Translation of codes of ethics for experts from the civil area into the criminal, with necessary adjustments, is inevitable. The Victorian County and Supreme Court Rules of 2014 are an example of such provisions. They have the merit of clearly identifying obligations that expert witnesses in criminal trials owe to the court in terms of their paramount duty, their responsibility to give reasons for their opinions, and the need to be clear about the assumptions that they make and the data that they take into account. These are constructive ways of enhancing both the quality of evidence and its transparency, in turn assisting jurors to be able to understand expert opinions better and to evaluate them more effectively during their deliberations.

However, more lessons are being learned from the civil area. The potential for trial judges to order experts to confer and crystallize the issues upon which they agree and disagree (the so-called conclave option) cannot be said to encroach upon the rights of the accused. It is an efficiency that has been employed for the improvement of the functioning of civil trials for some years. It is being imported into a number of jurisdictions for criminal trials and has the real likelihood of encouraging better pre-trial preparation of the expert evidence and removing unhelpfully obfuscating tactics from the defence arsenal. Such improvements would ultimately shorten trials and assist the decision-making of jurors. However, while concurrent evidence and consecutive evidence are now contemplated by the Victorian rules, where the defence agrees to such a course, it is unlikely that they will often come into play as a means of adducing expert evidence because of their impact on the dynamics of the adversary system – it is rare that defendants will agree to such options.

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<sup>23</sup> See generally Ian Freckelton and Hugh Selby, *Expert Evidence: Law, Practice, Procedure and Advocacy*, 6th edn. (Sydney: Thomson Reuters, 2016). This is far from new; see Carol A. G. Jones, *Expert Witnesses* (Oxford: Oxford University Press, 1994); Ian Freckelton, *The Trial of The Expert* (Melbourne: Oxford University Press, 1987); Tal Golan, *Laws of Men and Laws of Nature* (Cambridge, Mass: Harvard University Press, 2007).

*(c) Jurors' attention to the content of expert evidence*

Analysis of jurors' interviews and survey responses in the 2016 project suggested that they engaged in in-depth processing of the content of the expert evidence and were engaged by their task. There was limited evidence of reliance on extra-legal or peripheral cues, such as stereotypes and preconceptions, with the possible exception of some cases involving the presentation of DNA profiling evidence. As was the case in previous research, analysis of jurors' comprehension of expert evidence suggested that a range of extra-legal factors were influential; however, the magnitude of the correlations was small to modest. Jurors' preconceptions remained influential in the assessment of expert credibility. The more jurors expected to trust certain types of expert witnesses, the more they perceived the specific expert witnesses in the particular case on which they were empanelled to be credible. Overall, their expectations about the trustworthiness of experts were relatively high.

Further potential evidence that jurors were engaging in (central) processing of the expert evidence by reference to its actual content emerged in the correlational analyses of witness credibility. The largest correlation in those analyses was moderate in magnitude, which suggested that the majority of variation in perceptions of witness credibility was attributable to other factors that were not captured in those analyses. For practical reasons, it was not possible to assess directly the influence of evidence content on jurors' perceptions, but these analyses implied that perceptions of credibility may be based largely on the quality of the evidence given by experts.

Jurors, experts, lawyers, and judges generally agreed on the extent to which jurors understood the expert evidence and reported that the majority of jurors were able to understand the expert evidence adduced in criminal trials. This finding was reflected in both quantitative and qualitative analyses of their interview responses. Of great interest, though, is that all identified DNA evidence was identified as potentially difficult for jurors to comprehend.

*(d) The impact of language used by experts*

There were two general aspects of expert language that were considered in the 2016 project. The first was the ability of jurors to comprehend expert evidence as a function

of the language style used to present that evidence. The second was how aspects of that language style were related to perceptions of expert credibility.

Technical jargon was described as a key barrier to comprehension by both jurors and expert witnesses. This perception was consistent with the views of trial judges, as expressed in the 1999 and 2001 surveys of judges and magistrates. Nonetheless, jurors reported that experts did not tend to overuse technical jargon when giving evidence, and that when jargon *was* used, judges intervened by asking for further explanation of the evidence. In addition, experts indicated that they actively tried to reduce their use of jargon in an attempt to make their evidence more comprehensible. Judges thought that the use of jargon was problematic, and that the questioning style of counsel was a major barrier to comprehension of expert evidence.

The correlational analysis suggested that, while more complex language was reported as more difficult to understand, it was also paradoxically a potential cue to perceived accuracy and precision. As the evidence of a prosecution expert increased in complexity and incorporated more technical language, it became more influential and strengthened the case against the defendant, even though those features were associated with greater difficulty in comprehension. Consistent with this, when a prosecution expert appeared to be scientific, presumably due to their use of technical scientific terms, the prosecution case was perceived to be stronger, and the evidence had a larger reported impact on the verdict.

Consistent with the findings related to the use of jargon and complex evidence, perceptions that the prosecution witnesses' evidence was clear were negatively correlated with prosecution case strength and difficulty in understanding the evidence. While evidence that was perceived to be clear was reported to be easier to understand, it was also associated with jurors' perceptions that the prosecution case was weaker and had a greater impact on the verdict. This finding was somewhat at odds with the analysis of the credibility scores. In those analyses, clarity of evidence was positively correlated with credibility—the more clear the expert's evidence was, the more credible the ratings of the expert.

This latter finding suggested that perceptions of credibility were reliant on the content of the testimony—the more it could be understood, the more the expert was seen in a positive light. The findings on clarity and perceived strength of the prosecution case implied that some extra-legal cues might be at play, as it was then that the evidence appeared most scientific. One reason why these findings might also appear to be contradictory is that clarity and complexity/use of jargon may not be opposite sides of the same coin. For instance, it is possible for complex evidence that appears to be scientific (and so more influential because it matches possible expectations about expert evidence) to be expressed in either a clear or an unclear manner. When that evidence is expressed clearly, jurors are better able to evaluate the credibility of that information because they comprehend the content more readily, even when the concepts expressed are complex.

Use of clear language has the side-benefit of potentially reducing differences in interpretations of the evidence when a jury is comprised of people from different linguistic backgrounds. Jurors reported that several strategies helped overcome some of the challenges in understanding complex expert evidence, and in particular, noted with approval the experts who used plain language. This confirmed the value ascribed to clarity and accessibility of expert opinions by judges in the 1999 study.<sup>24</sup>

*(e) The influence of expert demeanour*

Both jurors' and legal practitioners suggested that an expert's demeanour could undermine the credibility of their evidence. The risks of drawing inferences too readily or utilising inappropriate preconceptions in interpreting demeanour are well known to the courts.<sup>25</sup> Whether they are effectively implemented, especially by jurors, is another matter.

While over-confidence was mentioned as one cause for concern, confidence, on the part of the prosecution witness at least, was viewed positively. Greater confidence

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<sup>24</sup> Ian Freckelton, Prasuna Reddy, and Hugh Selby, *Australian Judicial Perspectives on Expert Evidence: An Empirical Study*, p. 146.

<sup>25</sup> See eg *CSR Ltd v Della Maddalena* (2006) 224 ALR 1; *Fox v Percy* (2003) 214 CLR 118; Peter McClellan, 'Who Is Telling the Truth? Psychology, Common Sense and the Law', paper presented to the Local Courts of New South Wales Annual Conference, 2 August 2006: <<http://www.austlii.edu.au/au/journals/NSWJSchol/2006/14.pdf>>; Robert Fisher, 'The Demeanour Fallacy', (2014) *New Zealand Law Review* 575.

was associated with reporting from jurors that the expert's evidence was easier to understand. It was also correlated with more influence as the prosecution case was perceived as stronger and had a greater impact on the verdict. Consistent with this finding, the perception that the expert was wise was associated with greater ease of understanding and an increase in the impact of the expert's evidence on understanding.

*(f) Jury responses to DNA, medical, and psychiatric/psychological evidence*

A concern with expert evidence presented by forensic scientific experts and medical experts is that their evidence is viewed as akin to court-appointed expert evidence, because it is perceived as more neutral, reliable, and credible than other evidence, and is thus scrutinized less intensively by jurors, and processed peripherally. This would be an indicator of the 'white coat' effect associated with the identity of the communicator, when that person is a scientific expert. The fact that prosecution experts presenting DNA profiling evidence were rarely successfully challenged by defence barristers on cross-examination served to reinforce perceptions of this type of expertise as inviolate. Lawyers who have difficulty understanding the evidence, and are unconfident or ill prepared to conduct cross-examinations about scientific evidence,<sup>26</sup> may convey these cues to jurors.

Findings in the project indicated that there were specific issues that arose in jury responses to both DNA profiling evidence and evidence presented by medical and mental health experts, but that these issues were not due to white coat effects per se.

DNA profiling evidence was generally cited as potentially difficult for jurors to understand, in part because the presentation of the evidence regarding the random match probability was typically jargonistic and formulaic. This inflexible style on the part of the experts, adopted in an effort to avoid errors in expressing the results of probabilistic statistical calculations, was not adapted to convey the meaning of the random match to jurors in the most effective manner. Faced with the complexity of DNA profiling evidence and this presentational style, reliance by jurors on peripheral cues may be a particular issue in response to certain DNA expert evidence.

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<sup>26</sup> Gary Edmond and others, 'How to Cross-Examine Forensic Scientists: A Guide for Lawyers', *Australian Bar Review* 39, no. 2 (2014) 174.

Traditional adversarial system legal safeguards to test this evidence, such as (a) the presence of opposing expert opinions, (b) vigorous cross-examination, (c) jury directions, and (d) jury deliberation, were either unused or were found to be ineffective in testing the DNA profiling evidence reviewed in some of the trials examined in the 2016 project. As a consequence, some jurors dealing with this kind of evidence engaged in peripheral, as opposed to central, processing of the content of the expert evidence, and were more susceptible to the persuasive features of cues such as expert credentials, demeanour, and confidence; that is to say, they based their judgements on the communicator effects—the messenger rather than the message.

The potential for jury confusion generated by fractional ratios used to present the likelihood of a random match was extensive, as has been shown in many experimental laboratory studies. Recommendations flowing from psychological research on the greater accessibility to juries of expert presentations of this information by using a mathematically equivalent verbal modification in the form of frequencies and percentages should be implemented, although the confusion engendered by the use of vague descriptors in the United Kingdom, as highlighted in *R v T*,<sup>27</sup> needs to be avoided.

The project results revealed extensive disparities, ranging by as much as 50%, amongst key participants about the extent to which jurors understand complex DNA profiling expert evidence. This disparity could be reduced if judges were more proactive in communicating with juries about what is really understood, and if juries were encouraged and permitted to seek clarification when they did not understand the expert evidence. If this communication gap remains unaddressed, particular difficulties that jurors experience in these cases will persist.

The findings indicated that, in some instances, poor jury comprehension could lead to miscarriages of justice, particularly when the forensic scientific evidence interacted with jurors' misinterpretation of the meaning of 'beyond reasonable doubt'. In other trials where similar expert scientific evidence was presented, there was evidence that

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<sup>27</sup> [2010] EWCA Crim 2439, [2011] 1 Cr App R 9. See Colin Aitken, Paul Roberts, and Graham Jackson, *Fundamentals of Probability and Statistical Evidence in Criminal Proceedings: Practitioner Guide No 1* (London: Royal Statistical Society's Working Group on Statistics and the Law, 2010).

other factors compensated, and reduced the likelihood of an unsafe verdict. For example:

- (a) Jurors who had scientific and mathematical education were able to guide other less knowledgeable jurors.
- (b) Lawyers and experts who met in advance of the trial collaborated to prepare a range of visual aids and exhibits to assist jurors.
- (c) The judge was pro-active in seeking clarification of the expert evidence.

The various perspectives provided by judges, lawyers, experts, and jurors reinforced the complexity and diversity of the task of jurors in evaluating expert evidence from experts who were medical practitioners. In general they expressed confidence that jurors were managing their role effectively.

More frequently than other types of expert evidence, medical evidence, and mental health evidence presented by experts, especially that on the defendant's state of mind at the time the crime in issue was committed, was rebutted by an opposing defence expert, exposing jurors to a 'battle of the experts', and conflicting expert evidence.

When jurors were confronted by conflicting expert evidence on the same topic, such as the five trials in which psychiatric witnesses gave contrasting evidence about whether the accused was mentally impaired, or the expert evidence was unclearly delivered or convoluted in its complexity, at times the effectiveness of the decision-making process by jurors was a cause for concern. In trials involving complex competing evidence, if the issues were sharply delineated and the assumptions made by the experts were clearly identified, jurors managed to evaluate the differences between the experts adequately. An important finding of the 2016 project was that a battle of experts did not inevitably lead juries to ignore the content of the evidence and resort to reliance on peripheral cues in evaluating the expert evidence.

In short, therefore, the 2016 study confirmed the complexity of the task of evaluation of expert evidence by jurors but it gave significant reason for optimism about the propensity for jurors to attempt, frequently successfully, to assess expert evidence by



reference to its substance, rather than factors such as the witness' superficial appearance as persuasive or attractive.