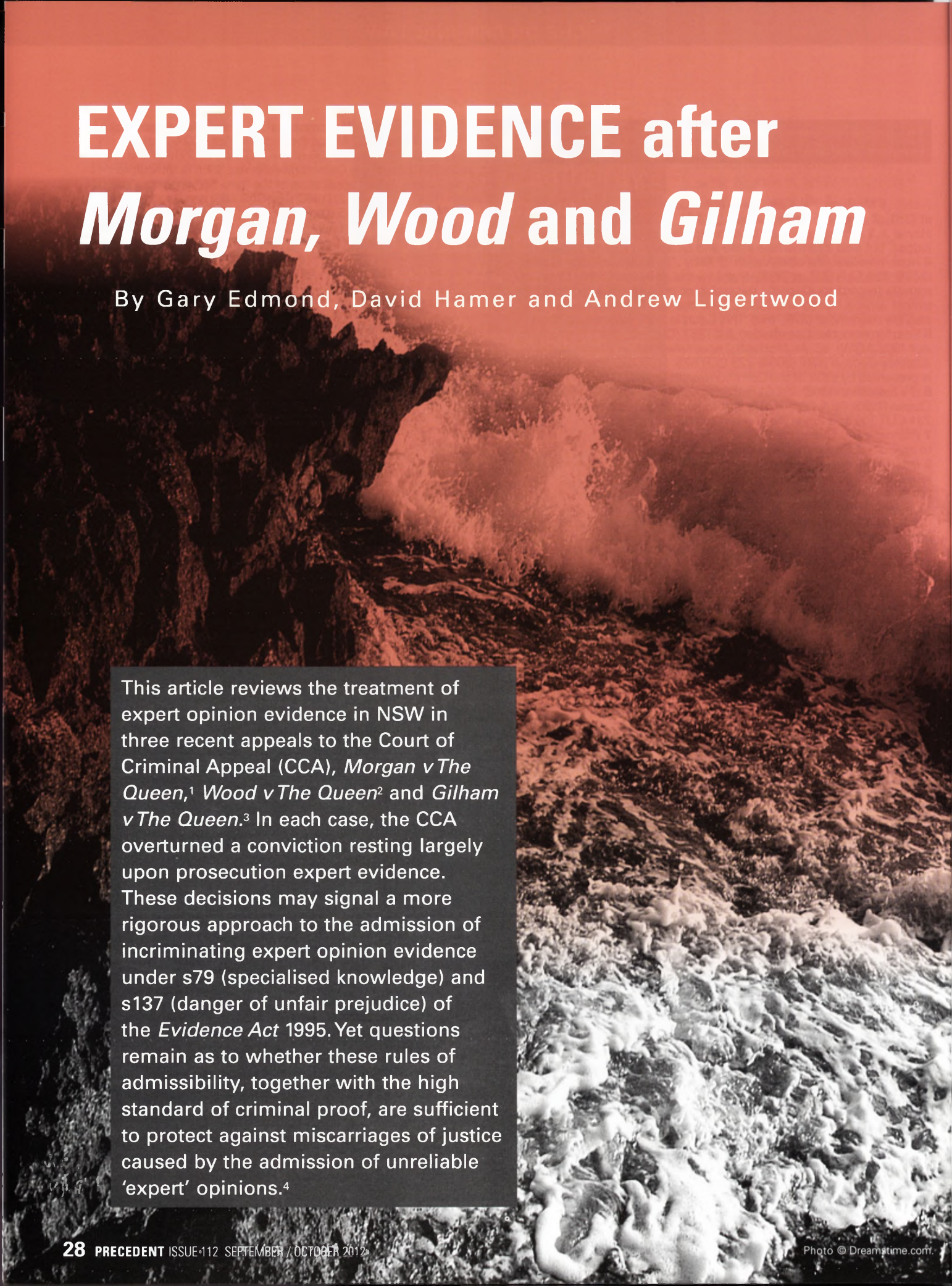
EXPERT EVIDENCE after *Morgan, Wood* and *Gilham*

By Gary Edmond, David Hamer and Andrew Ligertwood



This article reviews the treatment of expert opinion evidence in NSW in three recent appeals to the Court of Criminal Appeal (CCA), *Morgan v The Queen*,[1] *Wood v The Queen*[2] and *Gilham v The Queen*.[3] In each case, the CCA overturned a conviction resting largely upon prosecution expert evidence. These decisions may signal a more rigorous approach to the admission of incriminating expert opinion evidence under s79 (specialised knowledge) and s137 (danger of unfair prejudice) of the *Evidence Act* 1995. Yet questions remain as to whether these rules of admissibility, together with the high standard of criminal proof, are sufficient to protect against miscarriages of justice caused by the admission of unreliable 'expert' opinions.[4]

Morgan v R

Raymond Morgan was prosecuted for two robberies. The central issue was identity. The robbers were covered from head to toe with clothing and witnesses could provide nothing beyond a general description of the culprits. Morgan was implicated when, three months later, he was found in possession of a large amount of cash, lock-picking and other robbery-related equipment, and the key to the stolen getaway vehicle.

To prove that Morgan was one of the robbers, the Crown, over defence objections, was permitted to tender a certificate from an expert in anatomy, Professor Henneberg, who had compared images from CCTV of the robbery with police reference images of Morgan. This certificate described the following similarities between the persons depicted in these images: 'heavy body build… shoulders and hips are wide… a prominent abdomen… upper and lower limbs, especially in their distal segments, are not thick… head is dolichocephalic (elongated) in the horizontal plane… nose is wide and rather prominent while… face has straight profile (orthognathic)… right-handed… and carries himself straight'.[5] The certificate concluded that there was 'a high level of anatomical similarity' between the persons depicted.[6] During oral testimony, in response to a jury note and questions from the prosecutor, Henneburg was permitted to estimate the frequency of these features in the male population at large, to multiply these frequencies together, and to arrive at what he described as the 'generous' conclusion that only 1.6 per cent of the general population would possess this combination of features.[7]

On appeal it was unsuccessfully argued that this evidence exceeded the limits laid down in *R v Tang*,[8] where a facial mapper was permitted to testify to similarities although prohibited from expressing an opinion about identity based on them. Uncritically following *Tang*, the CCA noted that Henneberg had expressly denied that he was giving identification evidence, and held that his testimony went no further than asserting a high level of anatomical similarity.[9] *Tang* had also held that the expert in that case could describe *facial* characteristics, but was not qualified to isolate *bodily* characteristics more generally,[10] and counsel in *Morgan* successfully argued that Henneberg also lacked this qualification.[11] In the result, his evidence of relevant bodily similarities was not shown to be based on 'specialised knowledge' and, as evidence of opinion, did not meet this requirement for admissibility under s79(1).[12]

Hidden J, with whose decision on the merits the other members of the Court agreed, more specifically held that it was never shown how Henneberg's opinions were based on any specialised knowledge at all:

> '[140] [Professor Henneberg's] task was to make an anatomical comparison between relatively poor quality CCTV images of a person covered by clothing from head to foot with images of the appellant. Applying his specialised knowledge, Professor Henneberg claimed, he was able to detect not just a measure of similarity but "a high level of anatomical similarity" between the two persons. How he was able to do that when no part of the body of the offender in the CCTV images was exposed was, in my view, never satisfactorily explained.
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> [141] It may be that his experience enabled him to make appropriate adjustments for photographic distortion in the CCTV images. However, it is not apparent on the evidence how his undoubted anatomical expertise equipped him to take account of the clothing…
>
> [143] Professor Henneberg's evidence about his experience of the clothing industry … appears to be confined to the size and hang of garments, and their relation to "body shape and posture". … However that may be, the evidence does not convey that his experience extends to the observation of anatomical features of the head and face of a person whose head is entirely covered by a garment such as a balaclava.
>
> [144] Whatever might be made of the professor's observations of the offender's body shape through his clothing, his observations about the shape of his head and face were clearly vital to his conclusion that there was a high degree of anatomical similarity between that person and the appellant. It does not appear to me that those observations could be said to be based upon his specialised knowledge of anatomy.'

Hidden J considered that 'the jury, left to themselves, could [not] have found any significant similarities between the CCTV images and the photographs of the appellant'.[13] He >>

also concluded that Morgan's convictions were unreasonable and against the weight of evidence and that therefore it was inappropriate that the accused be retried. However, Beazley JA and Harrison J, while agreeing with Hidden J that the convictions should be set aside on account of the inadmissibility of Henneberg's opinion evidence, considered that a jury might be satisfied beyond reasonable doubt on the remaining evidence, and ordered a retrial.

Wood v R

In 2008, Gordon Wood was convicted of murdering Caroline Byrne by throwing her from a cliff at The Gap in Sydney in 1995. At trial, the central issue was whether Wood had thrown Byrne off the cliff or whether she had jumped to commit suicide. There were a number of uncertainties including the location of the launch and landing points, the length of the available run up, and whether Byrne could have jumped the required distance. Associate Professor Cross, a retired physicist with a specialisation in plasma physics, was a key prosecution witness. He helped investigators to re-appraise the body's landing position, and testified that Byrne could not have reached that position by jumping, but the accused could have thrown her there. In order to support these contentions, Cross conducted a series of filmed experiments involving persons running and jumping, and persons and punching bags being thrown into a swimming pool. Relying on this evidence, the Crown alleged that the athletic Wood had launched his girlfriend, like a spear, over the cliff top.

The admission of Cross's evidence was not seriously challenged at trial, but its value was contested in cross-examination and expert rebuttal evidence was adduced by the defence. Doubts about Cross's evidence began to emerge at trial, compounded by questions regarding the nature and degree of his involvement in the investigation and prosecution. These issues assumed significance in the appeal to the CCA.

The admissibility of Cross's evidence was not a ground of appeal.[14] Nevertheless, in delivering the leading judgment, McClellan CJ at CL suggested that Cross had been 'allowed … to express opinions outside his field of specialised knowledge'.[15] '[S]ignificant and important aspects of his evidence were concerned with biomechanics, which required an understanding of the functioning and capacity of the human body.'[16] But Cross 'has no qualifications or experience in biomechanics'.[17] This would have precluded admission under s79(1). On this point, McClellan CJ at CL drew upon remarks by Gleeson CJ in *HG v The Queen*: 'Experts who venture "opinions", (sometimes merely their own inference of fact), outside their field of specialised knowledge may invest those opinions with a spurious appearance of authority, and legitimate processes of fact-finding may be subverted.'[18]

> These cases highlight endemic weaknesses in legal practice and widespread problems with many types of forensic science and medicine. Has the CCA effectively reduced the risk of expert evidence causing further miscarriages of justice?

The CCA's primary focus was on the questionable value of Cross's experiments and whether their admission could have caused the trial to miscarry.[19] Ultimately, McClellan CJ at CL concluded that whether Byrne 'voluntarily fell or was thrown cannot be determined from the expert evidence … I am not persuaded beyond reasonable doubt that she did not take her own life.'[20]

Cross's evidence was problematic in a number of respects. Essentially, Cross claimed that it was not possible for Byrne to have run at a sufficient speed to have travelled from the launch point to the landing point, but it was possible for the accused to have thrown her there. One difficulty with these conclusions was Cross's contested assumptions regarding the location and nature of the launch point,[21] the nature of the throw,[22] and the location of the landing point.[23]

More seriously, even if his assumptions on these points were correct, Cross's experiments, particularly on the spear throw action, suffered fatal methodological limitations – the experiments were conducted in 'ideal conditions' which bore no resemblance to the 'real conditions'.[24]

> 'The tests carried out by A/Prof Cross were all conducted in daylight and in conditions where none of the participants had reason to fear for their safety… If Ms Byrne was conscious at the time she would undoubtedly have struggled to resist being thrown… All of the experts agreed that a struggling person would be more difficult to throw… [N]o effective experiments were done to ascertain whether an unconscious Ms Byrne could have been thrown the required distance.[25]
>
> The consequence is that although the experiments done by A/Prof Cross may support a conclusion that a compliant and conscious woman could have been thrown the necessary distance, his work does not allow any conclusion that the applicant could have thrown an unconscious or incapacitated woman [to the assumed landing spot].'[26]

On appeal, 'fresh evidence' raised other serious concerns regarding Cross's evidence and his behaviour more broadly. Based on Cross's own version of events, as recounted in his book, *Evidence for Murder: How Physics Convicted A Killer*,[27] and a public lecture with the same title, McClellan CJ at CL observed:

> 'A/Prof Cross took upon himself the role of investigator and became an active participant in attempting to prove that the applicant had committed murder. Rather than

> remaining impartial to the outcome and offering his independent expertise to assist the Court he formed the view from speaking with some police and Mr Byrne and from his own assessment of the circumstances that the applicant was guilty and it was his task to assist in proving his guilt.'[28]

McClellan CJ at CL concluded: 'this is not the role of an expert in a criminal trial and demonstrates active involvement in the decision to prosecute and a high level of partiality against the applicant.'[29]

McClellan CJ at CL found that Cross failed to adhere to the responsibilities of an expert witness as explained in *The Ikarian Reefer*[30] and the Code of Conduct in the Supreme Court Rules.[31] Without expressing a concluded view, McClellan CJ at CL held that an expert witness's failure to comply with the relevant obligations probably did not render the opinion inadmissible.[32] Nevertheless, it reduces the value of the evidence: '[H]is opinion on any controversial matter has minimal if any weight.'[33] Moreover, this diminished weight could lead to the exclusion of the evidence under ss135 or 137 of the *Evidence Act*.[34]

Gilham v R

In 1993, Jeffrey Gilham's parents and his older brother were stabbed to death in the family home which, during or following the stabbings, had been set on fire. The accused was home at the time and reported these events to emergency services. He claimed that his mother had called for help and when he arrived his parents were lying on the floor, dead or dying, from stab wounds, and were set alight by his brother. He said that his brother was there and confessed to having killed their parents. On the accused's version he then lost self-control, got hold of the knife and stabbed his brother.

In 1995, the prosecution originally accepted the accused's plea to the manslaughter of his brother on the basis of provocation. But more than a decade later, the accused was charged and convicted of murdering his parents. Scientific and medical evidence was central to the prosecution case.

The prosecution called a fire investigator, Munday, to present evidence of experiments regarding the rate of progress of the fire. While there was no challenge at trial to the fire investigator's experience, the admissibility of the experiments was unsuccessfully challenged on the basis that they failed to replicate the temperature and ignition point in the room, the carpet and underlay, the floorboards (which gave scope for the passage of air beneath the carpet), and the true constitution of a body (PVC pipes, for example, being used to represent legs).[35] The trial judge ruled that edited videos of the experiments could be put before the jury, together with his directions as to these shortcomings.[36] The CCA remarked that 'the jury were left to do the best they could with a range of experiments which may or may not have coincided with the events that occurred'.[37] It concluded that 'these experiments had very little, if any, probative value' and created 'a strong prejudicial effect to the accused'.[38] As a consequence, it held that the evidence should have been excluded under s137.[39]

The CCA regarded other prosecution arguments resting upon expert evidence as far more disconcerting, in particular expert evidence suggesting similarities between the stab wounds from which the jury was asked to infer that the three victims had been stabbed by the same person – necessarily the accused, given his admission that he had stabbed his brother.[40] The suggested similarities related mainly to the number of stab wounds and their location. The father, mother and brother received 27, 15 and 17 stab wounds respectively, virtually all of which were directed to the front or back of the chest. Three medical witnesses testified that, with these similarities, the stabbings formed a 'grouping' or 'pattern'.[41]

At trial, the accused argued with some success that these opinions about similarity were inadmissible under s79(1). The trial judge agreed that there was 'no field of specialised knowledge concerning the characteristics of stab wounds', and instructed the witnesses not 'to offer an opinion as to the degree of similarity between the grouped wounds'.[42] Rather, the witnesses were asked simply to describe the wounds they had observed. However, to varying degrees, several of the medical witnesses called by the Crown transgressed this ruling,[43] and in her final address to the jury the prosecutor's transgressions were flagrant. Not only did she exaggerate the observations of the expert witnesses, but she referred to 'the degree of similarity' as 'extraordinary' or 'remarkable', and suggested it was 'inconceivable that a >>

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coincidence like that could happen'.[44] She also asserted that it is 'really very, very unusual for one person to be stabbed more than ten times', describing such a high number as 'overkill'.[45]

The CCA was extremely critical of these aspects of the prosecutor's address. It was also critical of the prosecutor's failure to call Professor Cordner who, at an early point, had reported on the absence of any expertise, empirical or otherwise, that could justify the attribution of any significance to the knife wounds.[46] His own research on the matter, carried out for the accused in preparation for the appeal,[47] showed that it was not at all unusual for a homicide victim to have more than ten stab wounds. The prosecution's claim to the contrary was 'unsubstantiated and almost certainly wrong'.[48] Further, as the CCA noted:

> '[H]e concluded that the grouping of the injuries sustained by each of the deceased in the chest cavity, and their relative location to one another... placed them within the range of injuries one would expect of homicidal deaths from multiple stab wounds generally, such that similarity of the kind the Crown contended for (that is, a pattern of wounds of notable similarity) could not be accurately claimed...'[49]

The CCA held that the prosecutor's failure to call Cordner breached her obligation to 'act fairly by ensuring that the Crown case is presented with fairness to the accused',[50] an obligation requiring a prosecutor 'to have *the whole of the relevant evidence* placed intelligently before the court'.[51] Prosecution assertions that Cordner was an unreliable witness were held to be without foundation.[52] The 'more fundamental defect' in the prosecutor's decision not to call Cordner was that 'it was in part, expressly based on the fact that he held a different opinion from that advanced by the witnesses the Crown intended to call'.[53] The CCA concluded that '[t]he failure to call Professor Cordner to give evidence that in his opinion that [the pattern/similarity] analysis lacks a legitimate scientific foundation constitutes a miscarriage of justice'.[54]

On top of this, the CCA held that the prosecution evidence regarding the supposed similarity in the stab wounds was inadmissible under s79(1). The expertise of the forensic witnesses did not extend to 'the characteristics or patterns of stab wounds in multiple homicides',[55] and this deficit was not made up by their experience.[56] Even if the opinion evidence was admissible under s79(1), it ought to have been excluded by virtue of s137 as 'its probative value is outweighed by the danger of unfair prejudice'.[57] In addition to the other difficulties with this argument, the CCA said the prosecutor's approach was 'the more egregious' as there had been no effort to comply with the coincidence rule in ss98 and 101.[58] The findings on ss79(1) and 137 suggest that the probative value requirements in s98 and s101 would not have been satisfied.

The final strand of prosecution forensic evidence was provided by Dr Lawrence, the forensic pathologist who performed the autopsies. He gave evidence regarding carbon monoxide (CO) levels in the blood of the victims. He said the levels were low (or 'reasonable') for the accused's brother (6 per cent), mother (3 per cent) and father (4 per cent). He testified that 'a level of less than 10 per cent would be assumed to be that the person had died before the fire started' and the brother had 'not inhaled significant amounts of smoke'.[59] According to the Court, this was the 'most significant evidence persuasive of guilt'.[60] 'Dr Lawrence's evidence that [his brother] and his parents were already dead when the fire was lit effectively ruled out the possibility that anyone other than the applicant lit it[61] and 'excludes the applicant's account as a reasonable hypothesis consistent with his innocence'.[62]

However, 'new evidence' obtained by the accused for the appeal suggested that the brother – and the parents – were alive while the fire was burning. More specialised expert evidence explained that the normal range of CO in adults is 0.4 per cent to 1.4 per cent and that the deceased 'must of necessity have recently taken up the additional CO load from an exogenous source'.[63] The brother's levels, in particular, were consistent with him being alive for 2–4 minutes while the fire burned.[64] This evidence was unchallenged by the prosecution. On the appeal, Lawrence accepted the correctness of the new evidence. He testified: 'I don't... mostly see live people'[65] and 'conceded that he was not adequately qualified to offer an expert opinion about the significance of a level of carbon monoxide between zero and 10 per cent'.[66] Lawrence conceded that he failed to disclose his limited expertise.[67]

The new undisputed evidence on CO did not rule out the accused's guilt, but it was consistent with his version of events and inconsistent with the manner in which the prosecution had run its case.

The CCA was unanimous in upholding Gilham's appeal. The court quashed Gilham's conviction and, by a majority, ordered that a verdict of acquitted be entered.

DISCUSSION

These cases highlight endemic weaknesses in legal practice and widespread problems with many types of forensic science and medicine. In each case, the accused was convicted on the basis of expert evidence that was subsequently found to be seriously flawed. Without the forensic science and medical evidence, the prosecution case was so weakened in two cases

that acquittals were entered, and one member of the CCA thought this appropriate in the third.

How effectively has the CCA responded to these problems? What principles have been laid down in this series of recent appeals? And are these sufficient to significantly reduce the risk of expert evidence causing miscarriages of justice in the future?

Professional standards

In *Wood* and *Gilham*, the CCA placed emphasis on the obligation of the prosecutor and forensic scientist to comply with prescribed standards of conduct, and to present the prosecution case fairly and impartially. However, while these standards are undoubtedly important, without fundamental institutional reform to encourage more systematic compliance, the codes are limited as a guarantee of the quality of evidence. The court must ultimately assess the performance of the expert and the value of the evidence for itself in the circumstances of the particular case.

Section 79 and reliability

One positive aspect of these decisions is that the court showed a preparedness to approach the admissibility of expert evidence in a critical and exclusionary fashion. Various exclusionary provisions of the *Evidence Act* were employed, most centrally s79(1) (specialised knowledge), but also s137 (danger of unfair prejudice) and, in one instance, s98 (coincidence rule). This exclusionary attitude may mark a shift from the *laissez faire* tendency of some judges to admit incriminating opinion evidence and rely on the efficacy of directions and the inherent wisdom of the jury.[68] Empirical research suggests that the jury, even with strong judicial direction, is ill-equipped to make due allowance for weaknesses in expert evidence.[69]

The CCA's more critical approach to forensic science, drawing on earlier decisions, focuses on the two limbs of s79(1): whether the 'person has specialised knowledge based on the person's training, study or experience', and whether the opinion expressed 'is wholly or substantially based on that knowledge'.[70]

In this respect, these decisions do not constitute a radical break with tradition; just a more rigorous application of the terms of the *Evidence Act*. In these particular cases, the CCA managed to uncover and undo the injustice caused by the flawed forensic science and medicine, but it is unclear whether the CCA has done enough to avert the risk of similar injustices in the future. It is far from obvious that trial judges will be willing to construct s79(1) in the narrow fashion, or will have access to the kinds of supplementary evidence that enabled the CCA to question the admission and probative value of opinion evidence from highly qualified witnesses on appeal.

Consider, for example, Henneberg's body-mapping evidence in *Morgan*. The CCA expressed 'concern' over the 'lack of research into the validity, reliability and error rate of the process'.[71] However, the court then distinguished this from the issue of admissibility, which turned upon 'whether he had specialised knowledge, beyond the reach of lay people, which he brought to bear in arriving at his opinion'.[72] The court, with considerable assistance in this case from defence expert evidence, was able to perceive a disjuncture between Henneberg's opinion and his specialised anatomical knowledge. But this may be viewed as a fairly easy case, given that the perpetrator in the low-quality images was so heavily disguised. Future cases, consistent with *Morgan*, may admit body-mapping or face-mapping evidence – for example, where the perpetrator is less disguised, the image more clearly resolved, or the analyst, unlike Henneberg, uses 'technology such as computerised enhancement of the images and photographic superimposition'.[73] In such a case, >>

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an expert may be allowed to testify that there is similarity or even 'a high level of anatomical similarity', notwithstanding the absence of any empirical evidence that such techniques or assessments are reliable.

The *Gilham* appeal may also be viewed as a fairly easy case. Among other things, the CCA again had the benefit of the evidence of witnesses with greater expertise. Despite the CCA's decision in *Gilham*, it is not difficult to imagine similarly flawed prosecution evidence being admitted in future cases. A trial judge may readily be persuaded that an experienced forensic pathologist has the requisite expertise to testify as to patterns in stab wounds and carbon monoxide levels.[74] Once again, *Gilham* does not require a demonstration that the expert's opinions be reliable.

While in *Wood* McClellan CJ at CL carefully scrutinised the reliability of Cross's evidence, it should be remembered that this was not with regard to its admissibility, which was not contested at trial or on appeal. Rather, McClellan CJ at CL was determining whether the conviction was reasonable, and the degree of support Cross's evidence provided for the prosecution case.

Section 137 and reliability

While the recent CCA decisions may do little to incorporate a reliability requirement into s79(1), the NSW cases create space for such a consideration in s137. Unreliable and speculative expert opinions tend to be of low probative value, whereas the 'mantle of expertise' in which they are cloaked may lead the jury to rely on them nonetheless, creating a risk of unfair prejudice to the accused. In both *Wood* and *Gilham*, the CCA held that the evidence of prosecution experts should be excluded, in part, on the basis of its lack of reliability. In *Wood*, McClellan CJ at CL suggested that s137 may lead to exclusion where the reliability and probative value of evidence is called into question by the expert's partiality against the accused or other breaches of the expert's code of conduct.[75] In *Gilham*, it was held that the fire experiments should have been excluded because there was no evidence that the conditions of the experiments resembled that of the actual fire. On the basis of these recent decisions, there may be greater scope for a court to question the value of a body of knowledge or field of expertise under s137 than under s79.

There are, however, two problems with relying on s137 rather than s79(1). First, it shifts the burden of addressing probative value (and reliability) from the prosecution to the defence. This seems inappropriate because relative to the accused, the prosecution is a well-resourced repeat player, and the expertise that the prosecution seeks to rely on is often developed in-house – within police or other state laboratories. The accused will often lack the resources and access to test the expertise relied on by the prosecution.[76]

Secondly, for exclusion under s137 it is not enough that the evidence has low reliability and probative value. The accused must establish that the probative value is outweighed by the risk of unfair prejudice. On these three occasions, the CCA was sensitive to the 'mantle of expertise' or 'white coat' effect,[77] and the risk of fact-finding being subverted by the 'spurious appearance of authority'.[78] More commonly, however, courts have trusted that juries, with the assistance of judicial direction, will be able to appreciate any shortcomings in the expert's evidence.

More reliable expert opinions?

Morgan, *Wood* and *Gilham*, along with the High Court's recent *Dasreef Pty Ltd v Hawchar* decision, affirm that admissibility is to be determined strictly in accordance with the two limbs of s79(1).[79] This may provide scope for the reliability of the expert opinion to be considered by emphasising the obligation on the expert to explain exactly how the opinion follows from the specialised knowledge.[80] To this extent, recent decisions from the CCA and the High Court are consistent with earlier s79 jurisprudence, although they appear to signal a departure from the earlier, more accommodating approach in criminal proceedings.[81]

The demands placed on forensic science and medicine by this more stringent approach to s79(1) are not, however, particularly onerous and only indirectly focus attention on the fundamental question of whether techniques and opinions are reliable – that is, can the expert do what is claimed, how accurate are they, and how do we know? To that extent, our admissibility jurisprudence remains weak; it is open to inconsistent interpretations depending on how judges understand fields of knowledge and interpret the significance of experience. This approach perpetuates practices that are at odds with the advice of leading scientific organisations.[82] And, in this regard, Australian jurisprudence remains out of step with reforms in the United States, Canada, and the English Law Commission's recent recommendations, which direct explicit attention to reliability.[83] ■

Notes: **1** [2011] NSWCCA 257. **2** [2012] NSWCCA 21. **3** [2012] NSWCCA 131. **4** It is important to emphasise that many areas of forensic science and medicine, particularly emerging techniques, have never been evaluated; see National Research Council, *Strengthening Forensic Science in the United States: A Path Forward* (Washington, DC: National Academies Press, 2009). Even apparently sound techniques, such as latent fingerprint evidence, have been subjected to authoritative critique with insistence on the need to establish a research base, develop empirically based standards, and reform the way opinions are expressed in courts and reports. See, for example, Expert Working Group on Human Factors in Latent Print Analysis, *Latent print examination and human factors: Improving the practice through a systems approach* (Washington, DC, National Institute of Standards and Technology, National Institute of Justice, 2012); A Campbell,

The fingerprint inquiry report (Edinburgh, Scotland: APS Group Scotland, 2011). **5** Morgan at [74]. At trial, the professor used Latin terms, often spelling them for transcription and the jurors. With an Aboriginal person in the dock, he indicated that the similarities he purported to identify were common among Indigenous Australians, at [80]. **6** *Morgan* at [76], [121]. **7** *Morgan* at [108]-[109]. Henneberg's calculations departed from an agreed statement prepared with a defence scientist and were contested by the defence: at [110]-[114]. **8** [2006] NSWCCA 167, (2006) 65 NSWLR 681. **9** *Morgan* at [118], [121]. Although the use of 'high' would seem to move beyond mere description of similarities.
10 *Morgan* at [127]. Hidden J cites *Tang* where body-mapping was characterised by the Chief Justice as an area of specialised knowledge qualitatively different from facial mapping, even though the distinction between them is far from obvious. Moreover, in *Tang*, the Chief Justice drew upon the common law concept of *ad hoc expert* to facilitate admission of the expert's opinion. See G Edmond & M San Roque, 'Quasi-justice: Ad hoc expertise and identification evidence' (2009) 33 *Criminal Law Journal* 8.
11 *Morgan* at [138]-[139]. **12** G Edmond & R Kemp, 'Saving face? Body mapping down under' [2012] *Criminal Law Review* (forthcoming). **13** *Morgan* at [150]. **14** *Wood* at [48].
15 *Wood* at [467]. **16** *Wood* at [466]. **17** *Wood* at [468].
18 [1999] HCA 2; (1999) 197 CLR 414 at [44] quoted in *Wood* at [466]. **19** *Wood* at [461], [534] **20** *Wood* at [386], [387].
21 *Wood* at [492]. **22** *Wood* at [319], [320]. **23** *Wood* at [317].
24 *Wood* at [279], [488]. **25** *Wood* at [275]-[277]; see also at [476]-[488]. **26** *Wood* at [488]. **27** R Cross, *Evidence for Murder: How Physics Convicted a Killer,* UNSW Press, 2010). **28** *Wood* at [758].
29 *Wood* at [753]. **30** *National Justice Cia Naviera SA v Prudential Assurance Co Ltd (The Ikarian Reefer)* [1993] 2 Lloyd's Rep 68.
31 Schedule 7 to the *Uniform Civil Procedure Rules* 2005.
32 *Wood* at [728]. **33** *Wood* at [730], [758] **34** *Wood* at [729].
35 *Gilham* at [168]. **36** *Gilham* at [170]. **37** *Gilham* at [174].
38 Gilham at [175], [178]. **39** Gilham at [179], s137 provides that '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 accused. **40** Bizarrely, no consideration was originally given to the stab wounds as coincidence or tendency evidence and no consideration was given on appeal to evidence of tendency (s97) to kill by stabbing. **41** *Gilham* at [240]. **42** *Gilham* at [254]. The CCA, at [339]-[345], endorsed the conclusion that there was no specialised knowledge on which to base any admissible opinion about similarity. **43** For example, *Gilham* at [274] (Dr Cala).
44 *Gilham* at [298], [321], [319]: 'extraordinarily coincidental and extraordinarily similar'; [320], [323], [324] **45** *Gilham* at [322], [323].
46 Cordner provided a report to the investigating police in 1999 and appeared at an inquest in 2000. He was also called by the accused on the *voir dire* in the first trial, which ended with a hung jury, early in 2008. He was not called at the second trial, resulting in the accused's conviction, later in 2008. **47** *Gilham* at [351]-[354].
48 *Gilham* at [362]. **49** *Gilham* at [367]. **50** *Gilham* at [383]ff.
51 Rule 62 of the NSW Barristers Rules, as quoted in *Gilham* at [384]. **52** *Gilham* at [394], [396], [397]. **53** *Gilham* at [404].
54 *Gilham* at [412]. **55** *Gilham* at [487], [488], [594]. **56** *Gilham* at [541]. **57** *Gilham,* [490], [616]. **58** *Gilham* at [542]. **59** *Gilham* at [605]. **60** *Gilham* at [606], [608]. **61** *Gilham* at [620].
62 *Gilham* at [621]. **63** *Gilham* at [621]. **64** A Ligertwood and G Edmond, *Australian Evidence: A Principled Approach to the Common Law and the Uniform Acts,* 5th ed (LexisNexis, 2010) at 615-17. **65** G Edmond & M San Roque, 'The cool crucible: Forensic science evidence and the frailty of the criminal trial' (2012) 23 *Current Issues in Criminal Justice* 51. **66** For example, *HG v The Queen* [1999] HCA 2; (1999) 197 CLR 414 and *R v Tang* [2006] NSWCCA 167, (2006) 65 NSWLR 681. **67** *Morgan* at [138].
68 *Morgan* at [139]. There is nothing preventing the CCA or High Court from reading the need for reliability into the requirement of 'knowledge' in s79(1). **69** *Morgan* at [138]. **70** Compare *Gilham* at [340]. See, for example, *Velevski v The Queen* (2002) 187 ALR 233 and *R v Folbigg* [2003] NSWCCA 17. **71** *Wood* at [729]. **72** While beyond the scope of this article, these points suggest that a more permissive approach might be taken to the admissibility of defence evidence. **73** *Morgan* at [145]. **74** *HG* quoted in *Wood* [466], *Gilham* at [344], and *Dasreef* at [58] (Heydon J). **75** *Dasreef* at [32].
76 *Dasreef* at [42]. **77** For example, *R v Tang* [2006] NSWCCA 167; (2006) 65 NSWLR 681 at [137]. **78** See *Strengthening Forensic Science in the United States: A Path Forward*; Judge H Edwards, 'Solving the problems that plague the forensic science community' (2009) 50 *Jurimetrics* 5. **79** On the US, see: Federal Rules of Evidence (1975), Rule 702; *Daubert v Merrell Dow Pharmaceuticals* 509 US 579 (1993); *Kumho Tire v Carmichael* 526 US 127 (1999). On Canada, see: *R v J-LJ* [2000] 2 SCR 600; *R v Trochym* [2007] 1 SCR 239; *Re Truscott* 2007 ONCA 575 and S Goudge, *Report of the Inquiry into Pediatric Forensic Pathology in Ontario* (Toronto: Queens Printer, 2008). On England and Wales, see Law Commission, *Expert Evidence in Criminal Proceedings in England and Wales* (2011); *R v Smith* [2011] EWCA Crim 1296.

Gary Edmond *is Professor, Australian Research Council Future Fellow, and Director, Expertise, Evidence & Law Program, School of Law, The University of NSW.* *This research was supported by the ARC (FT0992041, LP100200142 and LP120100063).*
EMAIL *g.edmond@unsw.edu.au*
David Hamer *is Associate Professor, School of Law, University of Sydney.* **EMAIL** *david.hamer@sydney.edu.au*
Andrew Ligertwood *is Emeritus Fellow, School of Law, University of Adelaide.* **EMAIL** *andrew.ligertwood@adelaide.edu.au*