

# SURVEILLANCE CAMERAS, IDENTIFICATION AND EXPERT EVIDENCE

By Tony Ward

**This article discusses the use in England and Wales of expert evidence to compare digital images derived from surveillance camera photographs with facial images of a suspect. It argues that while such evidence has serious limitations the courts are right to admit it, but they are wrong to allow juries to convict on the basis of such evidence alone. The present law carries risks that juries will be over-persuaded by superficially compelling images.**

One of the commonest forms of digital evidence in English trials comprises images, allegedly of the defendant, captured by the numerous surveillance cameras (commonly referred to as ‘CCTV’ although most systems in current use are not technically ‘closed circuit’)<sup>1</sup> keeping watch over streets, homes and business premises in the UK.<sup>2</sup> Although the majority of cameras still use analogue technology, digital cameras are gaining an increasing share of the market.<sup>3</sup> The conversion of images from analogue to digital, and the use of low resolution to store large numbers of digital images, may significantly affect the quality of the evidence.<sup>4</sup> Photographs and video footage constitute real evidence,<sup>5</sup> that is, evidence that the jury can see for itself. The interpretation of the images, and in particular the identification of the people they show, is often a far from straightforward matter; and although computers may be used to enhance, rotate and measure the images, the matching of images always

finally comes down to a matter of human judgment.<sup>6</sup>

As explained by Rose LJ in *Attorney General’s Reference (No 2 of 2002)*, there are four ways in which evidence of identity can be presented in such cases: (1) the jury can compare the image with the defendant; (2) a witness may claim to recognise the defendant; (3) a witness who has studied the images may give evidence comparing them to a photograph of the defendant; or (4) ‘a suitably qualified expert with facial mapping skills can give opinion evidence of identification based on a comparison between images from the scene, (whether expertly enhanced or not) and a reasonably contemporary photograph of the defendant’.<sup>7</sup> The term ‘facial mapping’, coined by the press rather than by practitioners, covers a variety of techniques, practiced by people from a variety of branches of medicine (including medical art) and anthropology. The main methods are morphological (the visual comparison of facial features), anthropometric or photogrammetric (measuring distances and angles between facial ‘landmarks’) and video superimposition, in which an image that has been rotated and scaled to match an image of the suspect is ‘wiped’ across the suspect’s photograph.<sup>8</sup>

That video images can be processed, displayed and stored in digital form is significant in two respects. First, methods such as video superimposition can be used to present compelling graphics in the court. This fits with

1 Royal Academy of Engineering, *Dilemmas of Privacy and Surveillance* (2007), 33, at [http://www.raeng.org.uk/news/publications/list/reports/dilemmas\\_of\\_privacy\\_and\\_surveillance\\_report.pdf](http://www.raeng.org.uk/news/publications/list/reports/dilemmas_of_privacy_and_surveillance_report.pdf).

2 Clive Norris and Gary Armstrong, *The Maximum Surveillance Society: The Rise of CCTV* (Oxford: Berg, 1999). Just how numerous these cameras are is a vexed question: see ‘FactCheck: How Many CCTV Cameras?’ Channel 4 News, 18 June 2008, at <http://www.channel4.com/news/articles/society/factcheck+how+many+cctv+cameras/2291167.html>; Tom Reeve, ‘How

Many CCTV Cameras in the UK? Only 1.85 Million Claims ACPO Lead on CCTV’ Security News Desk, March 2011, <http://www.securitynewsdesk.com/2011/03/01/how-many-cctv-cameras-in-the-uk/>.

3 Martin Courtney, ‘Public Eyes Get Smart’ (2011) 6(1) *Engineering and Technology* 38.

4 Gary Edmond, Katherine Biber, Richard Kemp and Glenn Porter, ‘Law’s Looking Glass: Expert Identification Evidence Derived from Photographic and Video Images’ (2009) 20(3) *Current Issues Criminal Justice*, 337-374, 355-6.

5 *R v Clarke* [1995] 2 Cr. App. R. 425 at 429.

6 Tim Valentine, ‘Forensic Facial Comparison’ in Anthony Heaton-Armstrong, Eric Sheppard, Gisli Gudjonsson and David Wolchover, eds., *Witness Testimony* (Oxford: Oxford University Press, 2006), 16.66.

7 [2002] EWCA Crim 2373, [2003] 1 Cr. App. R. 321 at [19].

8 Paul Bogan and Andrew Roberts, *Identification: Investigation, Trial and Scientific Evidence* (2nd edn, Bristol: Jordan 2011), Ch. 15; Valentine, ‘Forensic Facial Comparison’; Edmond and others, ‘Law’s Looking Glass’.

the approach now favoured by the Court of Appeal of presenting the jury with digital images of the subject-matter of forensic science testimony.<sup>9</sup> Such ‘show-and-tell’ evidence<sup>10</sup> may be easy for juries to understand, but it carries the danger that the reasons for making an identification may be communicated much more clearly and powerfully than the reasons for doubt. As with other uses of visual technology in court, the obvious advantages of digital images need to be set against their potential prejudicial effects, of which defence lawyers in particular may not be sufficiently aware.<sup>11</sup> Secondly, the storage of images in searchable databases<sup>12</sup> raises the question of whether somebody could be prosecuted solely on the basis of a facial resemblance discovered in this way.

According to guidance issued by the Association of Chief Police Officers and the National Police Improvement Agency in 2009, facial recognition software available to the police, though it is ‘improving incrementally’ and is useful for investigative purposes, still relies on human judgment to compare the images and does not meet the ‘evidential threshold’ for admission in court.<sup>13</sup> There is no clearly defined ‘evidential threshold’ for the admissibility of expert evidence in English law,<sup>14</sup> but the caution shown by the guidance is certainly warranted. Research on computer-aided facial identification suggests that its limitations derive not from any shortcomings of the software, but from a combination of two factors: the nature of faces, which can change significantly as a result of pose, health, expression, etc., so that even two images of the same person taken within a short time may differ more from each other than they do from some images of other people; and the lack of adequate information as to how common various combinations of facial features

are in the population.<sup>15</sup> When using surveillance camera images these factors are compounded by the often poor quality of the images,<sup>16</sup> taken from a variety of angles and distances, of people in motion and often partly concealed. Variations in camera angle and distance can very significantly affect the apparent placing of facial ‘landmarks’.<sup>17</sup> Like other forms of forensic identification that depend on expert pattern-recognition (e.g. fingerprinting),<sup>18</sup> facial identification may be susceptible to bias when experts know which face is expected to match a questioned image.<sup>19</sup>

These factors have led some commentators, most notably a group of researchers in Australia headed by Professor Gary Edmond, to be strongly critical of the willingness of the English courts to admit ‘facial mapping’ evidence.<sup>20</sup> One of the main concerns expressed by these authors is that a combination of expert testimony and the display of similar-looking images imposes a tactical burden on the defence to rebut the inference of identity. As in other areas of forensic science, defence lawyers with limited resources, knowledge and access to experts may fail to challenge effectively prosecution evidence that is in fact of doubtful validity.

The shortcomings of this particular form of evidence are by no means unique. As a major report from the National Academy Sciences concluded, ‘In most forensic science disciplines, no studies have been conducted of large populations to establish the uniqueness of marks or features. Yet, despite the lack of a statistical foundation, examiners make probabilistic claims based on their experience.’<sup>21</sup> If there is a good case for excluding facial mapping evidence or severely restricting its scope, there may well be a comparable case for excluding or restricting many other kinds of expert evidence, including such well-

9 *R v Smith* [2011] EWCA Crim 1296, [2011] 2 Cr. App. R. 16 at [61].

10 Note, ‘Confronting the New Challenges of Scientific Evidence’ (1995) 108 Harv LR 1481, 1502-5.

11 Damian Schofield and Stephen Mason, ‘Using Graphical Technology to Present Evidence’ in Stephen Mason, gen. ed., *Electronic Evidence* (2nd edn, London: LexisNexis Butterworths 2010).

12 Vasilis Mitsilegas, ‘Databases in the Area of Freedom, Security and Justice: Lessons for the Centralization of Records and their Maximum Exchange’ in Constantine Stefanou and Helen Xanthaki, eds., *Towards a European Criminal Record* (Cambridge: Cambridge University Press, 2008).

13 ACPO and NPIA, *Forensic Identification Guidance 2009*, available at <http://www.acpo.police.uk/documents/>

*crime/2009/200911CRIFIG01.pdf*.

14 Paul Roberts and Adrian Zuckerman, *Criminal Evidence* (2nd edn, Oxford: Oxford University Press 2010), 498-502.

15 Martin P. Evison and Richard W. Vorder Bruegge, ‘Problems and Prospects’ in M.P. Evison and R. W. Vorder Bruegge, eds., *Computer-Aided Forensic Facial Comparison* (Boca Raton: CRC Press, 2009).

16 G. Gerrard, G. Parkins, I. Cunningham, W. Jones, S. Hill and S. Douglas, *National CCTV Strategy* (London: ACPO/Home Office, 2007), 12.

17 For a striking illustration of this phenomenon see Glenn Porter’s photographs reproduced in Katherine Biber, ‘Visual Jurisprudence: The Dangers of Photographic Identification Evidence’ (2009) 79 *Criminal Justice Matters*, 35. See also Edmond and others, ‘Law’s Looking Glass, 353-4; Damian

Schofield, Martin Evison and Lorna Goodwin, ‘Influence of Lens Distortion and Perspective Error’ in Evison and Vorder Bruegge, eds., *Computer-Aided Forensic Facial Comparison*.

18 Itiel E. Dror and David Charlton, ‘Why Experts Make Errors’ (2006) 56(4) *Journal of Forensic Identification* 600-616.

19 Andrew Campbell-Tiech, ‘Stockwell Revisited: The Unhappy State of Facial Mapping’ [2005] 6 *Arch. News* 4.

20 Edmond and others, ‘Law’s Looking Glass’; Gary Edmond, Richard Kemp, Glenn Porter, David Hamer, Mike Burton, Katherine Biber and Mehera San Roque ‘Atkins v The Emperor: the “Cautious” use of Unreliable “Expert” Opinion’ (2010) 14(2) *E&P* 146.

21 *Strengthening Forensic Science in the United States: A Path Forward* (Washington, DC: National Academies of Science, 2009), 198-9.

established categories as fingerprints and handwriting identification.<sup>22</sup>

The difficulty with Edmond and colleagues' position, however, is that for all its shortcomings 'facial mapping' evidence can hardly be worse than the alternatives set out in *Attorney General's Reference (No 2 of 2002)*.<sup>23</sup> The risks inherent in letting the jury compare photographs for themselves, in witnesses testifying that they recognise the images, and in allowing police officers who have studied the images to interpret them for a jury, have been thoroughly explored by Ruth Costigan.<sup>24</sup> But no-one argues that evidence that may actually show a crime in progress should be inadmissible, and once a jury see such images they are bound to ask themselves whether the person they show is or is not the person in the dock. If it is difficult to argue that no form of identification of a person shown on CCTV should be admissible, then it is difficult to see why expert evidence should be excluded while lay evidence is admitted or jurors are allowed to form their own impressions. As a leading US scholar argues, if 'we discriminate against expert testimony, we force the courts to rely on alternative types of evidence, notably lay testimony such as eyewitness identifications.'<sup>25</sup>

### 'Common Knowledge'

One principle that might appear to justify a preference for non-expert over expert evidence of identification is the 'common knowledge rule', that expert evidence is inadmissible on matters that the jury could judge for itself without expert help. The rule serves to reduce the complexity of the jury's task, since it is often simpler, when one knows the relevant facts and has the necessary background knowledge, to draw an inference for oneself than to assess an expert's competence to draw inferences from the same facts. It also avoids the risk that juries will uncritically defer to experts, allowing the experts to 'usurp' crucial decisions about the interpretation of evidence.<sup>26</sup>

Roberts and Zuckerman argue that since a rigid 'common knowledge rule' would render 'facial mapping' evidence inadmissible, given that the jury can see the photographs for itself, the very fact that such evidence is admitted shows that there is no such rule, but only

a broad and flexible standard of 'helpfulness'.<sup>27</sup> In the leading case of *R v Stockwell*, however, the Court of Appeal took some pains to delineate a limited class of cases in which expert evidence would address matters beyond the competence of the jury:

'Where ... there is a clear photograph and no suggestion that the subject has changed his appearance, a jury could usually reach a conclusion without help. Where, as here ... the appellant had grown a beard shortly before his arrest, and ... the robber may have been wearing clear spectacles and a wig for disguise ... expert evidence ... can provide the jury with information and assistance they would otherwise lack ...'<sup>28</sup>

Similarly in *R v Clarke*, the Court of Appeal held that where 'real evidence' – here the photographic images – 'is not sufficiently intelligible to the jury without expert evidence, it has always been accepted that it is possible to place before the jury the opinion of an expert in order to assist them in their interpretation of the real evidence.'<sup>29</sup>

This distinction is not always strictly enforced. In *R v Nugent*,<sup>30</sup> where 'the similarities and absence of distinguishing features in the clothing referred to were obvious to the lay eye and scarcely required to be attested by expert evidence' the court nevertheless accepted that 'having the points made through evidence in chief from the mouth of an expert witness was a useful and time-saving exercise by way of presentation'. The court appeared untroubled by the dicta in *Stockwell* and *Clarke* since comparing images of clothing was 'not a facial mapping exercise'.<sup>31</sup>

The common knowledge rule has been developed mainly in relation to evidence about mental states. Since a defendant's past mental state is inaccessible to any kind of direct observation, so it is impossible to demonstrate that experts are better at identifying such states than other people.<sup>32</sup> Given that the law makes these elusive states a criterion of criminal liability, it is hard to see a fairer way of ascertaining them than to leave to the matter to the jury's 'common sense'. By contrast, it is possible to ascertain how accurate people are in identifying faces. The results are not encouraging for those who advocate

22 See Erica Beecher-Monas, *Evaluating Scientific Evidence* (Cambridge University Press, 2007) Ch. 5.

23 [2002] EWCA Crim 2373 at [19].

24 Ruth Costigan, 'Identification from CCTV: The Risk of Injustice' [2007] Crim. LR 591.

25 Edward Imwinkelried, 'Flawed Expert Testimony: Striking the Right Balance in Admissibility Standards' (2003) 18 *Criminal*

*Justice*, 28, 29.

26 Tony Ward, 'Usurping the Role of the Jury? Expert Evidence and Witness Credibility in English Criminal Trials' (2009) 13(2) *E&P* 83.

27 Paul Roberts and Adrian Zuckerman, *Criminal Evidence* (2nd edn, Oxford: Oxford University Press, 2010), 287.

28 *R v Stockwell* (1993) 97 *Cr. App. R.* 260 at 263-4.

29 *R v Clarke* [1995] 2 *Cr. App. R.* 425 at 429-30.

30 [2003] EWCA Crim 3434.

31 [2003] EWCA Crim 3434 at [50].

32 See Christopher Slobogin, *Proving the Unprovable: The Role of Law, Science and Speculation in Adjudicating Culpability and Dangerousness* (Oxford: OUP 2007).

leaving the task to juries.<sup>33</sup> Judges who assert that identifying people in photographs or videos is a task most people perform competently in everyday life<sup>34</sup> overlook the difference between the recognition of photographs of familiar people, at which research subjects perform remarkably well, and identification of strangers, at which they tend to do very badly.<sup>35</sup> Jurors, it seems, need all the help they can get in identifying unfamiliar faces. The question is whether professed experts possess skills of recognition that jurors lack.

Two recent, small-scale studies shed some light on this question. One, by Lee and others, found that mere completion of a master's course in human identification conferred no significant advantage when it came to identifying poor-quality CCTV images.<sup>36</sup> In the other, Wilkinson and Evans, two facial imaging analysts, arranged a 'blind' trial of their own ability to identify faces on CCTV compared with the performance of a group of 61 students representing the public. They were no doubt relieved to discover that they did significantly better than the 'public' group who, when the 'target' face was not among those shown to them, identified someone else more often than they responded correctly. But in both the 'target present' and the 'target absent' tests there was one face that both experts independently, but wrongly, identified as the 'target'. Evidence that two experts had independently picked the same individual from amongst several 'foils' could have been all too persuasive in a criminal trial.<sup>37</sup>

If the main test for admissibility is simply whether the expert has knowledge or skills that the jury lack, Wilkinson and Evans' findings are clearly germane at least to the admissibility of the authors' own evidence (whether the findings can be generalized to anyone else is debateable). As Edmond and colleagues point out, however, whether experts perform better than hopelessly unskilled laypeople is a different question from whether their evidence is reliable.<sup>38</sup>

## 'Ultimate issues'

Another supposed common-law restriction on expert

evidence is the 'ultimate issue rule', which prohibits the expert from 'usurping the function of the jury answering the very question which it [is] the jury's and only the jury's province to decide.'<sup>39</sup> That this rule was ever thought to apply to facial comparison evidence may be due to some careless talk by the expert witness in *R v Stockwell*, who opined that 'the photos strongly support the view that the suspect and the robber are the same man.' Whether the defendant was a robber was, of course, the 'ultimate issue', not whether he was the man in the photographs. As the court recognised, however, since it was undisputed that the photographs showed a robbery in progress, the distinction between 'ultimate' and 'non-ultimate' issues was 'a matter of form rather than substance'.<sup>40</sup> What was important was that jury must be clearly told that the decision was for them, not for any expert.

The ultimate issue rule was revived in a modified form in *R v Gray*.<sup>41</sup> Mitting J disapproved of experts' expressing 'strong support' for conclusions about identity – not because identity was formally the 'ultimate issue', but because the jury lacked an adequate basis on which to decide what weight to put on the expert's inference. Until better evidence of the validity of such inferences, such as a database of facial characteristics, was available, experts should go no further than pointing out similarities between faces, leaving juries to draw their own conclusions about their significance.<sup>42</sup>

*Gray*, like the similar decision of the New South Wales Court of Criminal Appeal in *R v Tang*,<sup>43</sup> was an unsatisfactory compromise between admission and exclusion, and the Court of Appeal's subsequent unwillingness to follow it is understandable.<sup>44</sup> It is true that the jury has no objective basis on which to assess the probative value of the expert's opinion, but it equally lacks an objective basis on which to evaluate any similarities the expert points out. The distinction between pointing out similarities and expressing an opinion that they support a finding that two images are of the same face looks like another difference of form rather than substance. In any event, the Court of Appeal in *R v Atkins* not only disapproved Mitting J's *obiter dicta* in *Gray* but also flatly denied the existence of the ultimate issue rule.<sup>45</sup>

33 Graham Davies and Sonya Thasen, 'Closed-circuit Television: How Effective an Identification Aid?' (2000) 91 *British Journal of Psychology*, 411; Josh P. Davis and Tim Valentine, 'CCTV on Trial: Matching Video Images with the Defendant in the Dock' (2009) 23 *Applied Cognitive Psychology* 482.

34 *R v Dodson and Williams* [1994] 1 WLR 971 at 979; *R v Blenkinsop* [1995] 1 Cr. App. R. 7 at 12.

35 Vicki Bruce, Zoë Henderson, Craig Newman and A. Mike Burton, 'Matching Identities of Familiar and Unfamiliar Faces Caught on

CCTV' (2001) 7(3) *Journal of Experimental Psychology: Applied*, 207-218; Costigan, 'Identification from CCTV'.

36 Woon-Jon Lee, Caroline Wilkinson, Amina Memon and Kate Houston, 'Matching Unfamiliar Faces from Poor Quality Closed-Circuit Television (CCTV) Footage: An Evaluation of the Effect of Training on Facial Identification Ability', (2009) 1(1) *AXIS*, 19.

37 Caroline Wilkinson and Raymond Evans, 'Are Facial Image Analysis Experts Any Better Than the General Public at Identifying Individuals from CCTV Images?' (2009) 49

*Science and Justice*, 191

38 Edmond and others, 'Atkins v The Emperor', 159, fn. 47.

39 *R v Theodosi* [1993] RTR 179 at 184.

40 *R v Stockwell* (1993) 97 Cr. App. R. 260 at 265.

41 [2003] EWCA Crim 1001.

42 [2003] EWCA Crim 1001 at [16].

43 [2006] NSWCCA 167.

44 *R v Gardner* [2004] EWCA Crim 1639, *R v Mitchell* [2005] EWCA Crim 731.

45 *R v Atkins* [2009] EWCA Crim 1876 at [14-18].

## Reliability

Is facial mapping reliable enough to be admitted in evidence? A formulation of the test for admissibility that is frequently quoted in the English courts comes from the South Australian case of *Bonython*: 'whether the subject matter of the opinion forms part of a body of knowledge or experience which is sufficiently organized or recognized to be accepted as a reliable body of knowledge or experience'.<sup>46</sup> If this were interpreted strictly it would be a considerable hurdle for facial mapping evidence to get over. What makes a body of knowledge 'sufficiently organized' to be 'reliable', one might think, is the existence of body of techniques and theories that have been subjected to rigorous research.<sup>47</sup> That is a far cry, however, from the cursory fashion in which the test is used in the one English Court of Appeal decision to apply it to facial mapping evidence. In *R v Ciantar*, Moses LJ simply asserted that it 'could not be suggested' that facial mapping was not a reliable body of knowledge.<sup>48</sup> The experts were 'permitted to give their evidence because they have experience, sophisticated equipment, time and skill in such identification techniques' – none of which guarantees that their techniques are any more reliable than, say, phrenology. The judge's task was merely to 'determine whether the evidence is such as to entitle the jury to consider it. Thus if there is expert evidence capable of acceptance it is not for the judge to withdraw it from the jury merely because there is other evidence which contradicts it'.<sup>49</sup>

Moses LJ's approach has at least the merit of being consistent with *R v Luttrell*, which while endorsing the *Bonython* test also held that no 'enhanced' test of reliability was required beyond the 'ordinary tests of relevance and reliability'.<sup>50</sup> The meaning of this is somewhat obscure, but for a clearer guidance we may turn to *R v Buckley*,<sup>51</sup> the leading case on the admissibility of fingerprint evidence. There, Rose LJ explained that such evidence 'is admissible as matter of law if it tends to improve the guilt of the accused', and it may so tend even if it is of limited weight because of the poor quality of the print; but prosecution evidence which is otherwise admissible may be nevertheless be excluded under the

Police and Criminal Evidence Act 1984 s. 78, on the ground that its prejudicial effect exceeds its probative value (see below).

The leading case on the admissibility of facial mapping evidence is now *Atkins v R*.<sup>52</sup> Here the Court of Appeal confirms that the criterion for admissibility is that the evidence must be 'based upon specialised experience, knowledge or study'. It acknowledges that there 'can be proper anxiety about such evidence, particularly where it is "novel"', but adds:

'The three principal remedies are (i) to have such evidence examined and, if appropriate, criticised by an expert of equal experience and skill, (ii) to subject the evidence to rigorous testing in the witness box and (iii) to ensure careful judicial exposition to the jury of the difference between factual examination/comparison or arithmetical measure on the one hand and, on the other, a subjective, but informed, judgment of the significance of the findings'.<sup>53</sup>

These remedies have obvious shortcomings. Having the evidence examined by someone with the same kind of experience and skill as the first expert begs the question of whether that kind of experience and skill yields reliable knowledge. The 'rigorous testing' of the expert evidence in the witness box depends on defence lawyers having the skill, motivation and resources to probe the weaknesses of the evidence and expose them effectively. And it is unclear whether warning the jury about the 'subjective but informed' nature of the evidence will be effective. In their US mock jury experiments, McQuiston-Surrett and Saks found that 'Whether or not the jurors were informed about the limitations of microscopic hair examination on cross-examination or by the judge had little measurable or meaningful impact on their judgments'.<sup>54</sup>

There can, however be little doubt that facial comparison evidence crosses at least the 'low threshold' for admissibility of being 'such that a jury properly warned could place some weight on it'.<sup>55</sup> Despite the limited scientific evidence for the reliability of facial mapping, it is not unreasonable for judges and juries to think that the experience of experts is likely to give them some ability to make accurate judgments. By analogy with other forms of

46 (1984) 48 SASR 45 at 47.

47 Tony Ward, 'English Law's Epistemology of Expert Testimony' (2006) 33(4) *Journal of Law and Society*, 572-595.

48 [2005] EWCA Crim 3559 at [21], citing *R v Luttrell* [2004] 2 Cr App R 520 which in turn cites the above-quoted passage from

*Bonython*.

49 [2005] EWCA Crim 3559 at [28].

50 *R v Luttrell* [2004] 2 Cr. App. R. 520 at 37.

51 [1999] All ER (D) 1521.

52 [2009] EWCA Crim 1876.

53 [2009] EWCA Crim 1876 at [27].

54 Dawn McQuiston-Surrett and Michael J.

Saks, 'Communicating Opinion Evidence in the Forensic Identification Sciences: Accuracy and Impact' (2008) 59 *Hastings Law Journal*, 1159-1189, 1169.

55 *R v Robinson* [2005] EWCA Crim 1940 at [19].

*The question, then, is not so much whether facial mapping evidence is sufficiently reliable to meet a test of bare relevance, but whether despite meeting that test it ought to be excluded on the ground that its prejudicial effect exceeds its probative value*

expertise,<sup>56</sup> the hypothesis that expert observers of facial photographs acquire an ability to perceive similarities and differences that would escape a novice seems highly plausible, though it has certainly not been adequately tested.<sup>57</sup> The question, then, is not so much whether facial mapping evidence is sufficiently reliable to meet a test of bare relevance, but whether despite meeting that test it ought to be excluded on the ground that its prejudicial effect exceeds its probative value. Hughes LJ in *Atkins* gave remarkably little consideration to s. 78, merely observing that it was not the source of the court's power to exclude unreliable evidence, although it might 'additionally be relevant in some cases'.<sup>58</sup> This is not to say that Hughes LJ was insensitive to the danger that expert evidence might be prejudicial in the sense that deference to expert authority might lead the jury to give it undue weight. He considered, however, that the way to counter the risk of prejudice was by a judicial warning rather than by excluding the evidence.

## Warnings

There is now considerable authority that jurors should be warned of the need for caution in accepting facial mapping evidence. In *R v Briddick*, where the trial judge remarked that the evidence was 'perhaps less scientific than one might have imagined', the Court of Appeal accepted that the 'judge could, and perhaps should, have given an even more stronger [sic] warning to the jury to view with caution'.<sup>59</sup> In another case dealing with the same expert, the court approved the trial judge's warning that:

'It is important that you should be cautious in your approach to evidence which claims to make an

identification to a high degree of probability. .... You cannot test his results in the way in which an examiner can test a student's examination paper in mathematics, and ... an honest witness who is mistaken can be very persuasive or can appear to be very persuasive.'<sup>60</sup>

In *Atkins* the court pointed to the general need for a warning about the scale of measures of support<sup>61</sup> (such as 'strong' or 'powerful support' for identification) commonly employed by facial comparison experts:

'the fact that a conclusion is not based upon a statistical database recording the incidence of the features compared as they appear in the population at large needs to be made crystal clear to the jury.'<sup>62</sup>

Despite its generally negative findings about the effect of warnings on research subjects playing the role of jurors (known as 'mock' jurors), the study by McQuiston-Surrett and Saks also affords some grounds for optimism. When the hair comparison expert admitted that he could only give his 'best subjective estimation' as to how common a certain type of hair was in the population, mock jurors attached significantly less weight to his evidence than when he used terms lack 'match' or 'similar in all microscopic characteristics'.<sup>63</sup> This is the very point that the warnings required by *Atkins* and other cases are intended to convey. It should also be made clear in the expert's own evidence, bearing in mind the requirement that an expert's report must 'if the expert is not able to give his opinion without qualification, state the qualification'.<sup>64</sup> If expressions like 'lends powerful support' are to be used, they should always be prefaced with a qualifications such 'based on my subjective

56 For example, the examination of X-ray photographs and satellite images: M.T.H. Chi, 'Laboratory Methods for Assessing Experts' and Novices' Knowledge' in K.A. Ericsson, N. Charness. P.J. Feltovich and R. T. Hoffman, eds., *The Cambridge Handbook of Expertise and Expert Performance* (Cambridge: Cambridge University Press, 2006).

57 Caroline Wilkinson and Raymond Evans,

'Are Facial Image Analysis Experts any Better than the General Public at Identifying Individuals from CCTV images?' (2009) 49(3) *Science & Justice* 191.

58 [2009] EWCA Crim 1876 at [9].

59 [2001] EWCA Crim 984 at [22-23].

60 *R v Gardner* [2004] EWCA Crim 1639.

61 Michael C. Bromby and Stephanie Plews, 'Guidance for Evaluating Levels of Support', *Forensic Imagery Analysis Group* (22 March

2006), at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1550752](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1550752).

62 [2009] EWCA Crim 1876 at [24].

63 Dawn McQuiston-Surrett and Michael J. Saks, 'The Testimony of Forensic Identification Science: What Expert Witnesses Say and What Factfinders Hear' (2009) 33(5) *Law & Human Behavior*, 436-453, 441.

64 *Criminal Procedure Rules 2005*, r. 33.3(g).

estimate (or perhaps better: my informed guess) of the rarity of similar features in the population ...'

### Sufficiency of evidence

To set the *Atkins* judgment in context, it is important to appreciate the strength of the circumstantial evidence implicating the defendants. A man called Carty, who died before the trial, was linked to the crime by DNA evidence and it was common ground that he was one of the perpetrators. The brothers were with Carty – who had helped Dean Atkins to abscond from an open prison – shortly before and after the crime; and Dean Atkins had shown off a distinctive ring matching the description of one of the stolen items.<sup>65</sup> It would have been an astonishing coincidence, even allowing for optical distortion and other problems, for any other robber to resemble so closely the very person to whom so much other evidence pointed. The situation is different in cases where the facial comparison evidence is the sole or main evidence against the defendant. Here the issue is whether the case ought to be left to the jury: whether facial mapping evidence meets the *Galbraith* test that the evidence 'taken at its highest' is sufficient for a reasonable jury to convict.<sup>66</sup>

It might be thought that evidence that comes with the qualifications and warnings that the Court of Appeal has found to be applicable to facial comparison evidence could seldom if ever meet that test. It might be supposed that evidence that comes, or ought to come, with all those caveats attached could never be sufficient to secure a conviction by itself. But as Tuckey LJ remarked in *R v Mitchell*, by the same logic, 'it would not be possible to convict a defendant on the identification evidence of a single witness and we all know that this often happens.'<sup>67</sup>

It may often happen, but according to the leading case of *R v Turnbull* it should happen only where the evidence is of good quality, 'as for example when the identification is made after a long period of observation, or in satisfactory conditions by a relative, a neighbour, a close friend, a workmate and the like'.<sup>68</sup> This was the Court of Appeal's somewhat diminished version of the Devlin Report's recommendation that unless there were 'exceptional circumstances' or other evidence to support the identification, the jury should be directed to acquit.<sup>69</sup>

Where identification is based on observation – however prolonged and careful – of a poor quality video, or a better quality image of a concealed or disguised face, it is surely contrary to the spirit of both Devlin and Turnbull to allow the evidence to go to the jury simply because the witness expresses a high degree of confidence in an identification. The 'trial judge's duty to withdraw the case from the jury in an identification case is wider than the general duty of a trial judge in respect of a submission of no case to answer as enunciated in *Galbraith*'.<sup>70</sup> As Lord Mustill explained in *Daley v R*, the guidance in *Galbraith* was intended to stop judges substituting their own judgment of the credibility of a witness for that of the jury, whereas in 'fleeting glimpse' identification cases, 'the case is withdrawn from the jury not because the judge considers that the witness is lying, but because the evidence even if taken to be honest has a base which is so slender that it is unreliable and therefore not sufficient to found a conviction'.<sup>71</sup> The same principle ought to lead to the withdrawal of prosecutions that depend solely, or almost solely, on untested forms of expertise.

In two cases the Court of Appeal has found that facial comparison evidence, in conjunction with other evidence, insufficient to satisfy the *Galbraith*<sup>72</sup> test for a case to answer. In *R v Buckland*,<sup>73</sup> it held that a '70 per cent sure' identification by the victim, coupled with 'strong support' for an identification by two experts and a lie told by the defendant after arrest, did not amount to a case to answer. In *R v Mulgrew*, the court held that although a police officer's evidence of having recognised the suspect on a CCTV still was by itself a sufficient basis for conviction, it had been a misdirection to tell the jury that an expert's evidence that the suspect could 'not be eliminated' on the basis of image comparison provided 'some support, albeit limited' for the officer's identification:

'it was as plain as a pikestaff that there were general similarities between the man shown in the photograph and the man which P.C. Whittaker purported to recognise. It added nothing to the recognition of the officer to say or assert whether as an expert or otherwise that the appellant could not be eliminated as a candidate.'<sup>74</sup>

65 *Atkins* [2009] EWCA Crim 1876 at [3]; Chris Summers, 'Killed for her Life Savings', BBC News, 27 February 2008, available at <http://news.bbc.co.uk/1/hi/uk/7216923.stm>.

66 *R v Galbraith* (1981) 73 Cr. App. R. 124 at 127.

67 [2005] EWCA Crim 731 at [11].

68 [1977] QB 224 at 229.

69 Lord Devlin (Chair) Report of the Departmental Committee on Evidence of Identification in Criminal Cases (1976 Cmnd 338), paras. 4.55, 4.83.

70 *R v Fergus* (1994) 98 Cr. App. R. 313.

71 [1994] 1 A.C. 117 (PC) at 129.

72 (1981) 73 Cr. App. R. 124.

73 [2007] EWCA Crim 1639.

74 [2008] EWCA Crim 1375 at [10].

*Mulgrew* is probably the only case where the Court of Appeal has underestimated the probative value of ‘facial mapping’ evidence. There must have been some chance that if the constable was mistaken, a competent expert would have noticed some difference between the two faces. A failure to eliminate the suspect was more likely if the constable was right than if he was wrong, and thus his not being eliminated did have some probative value in support of the identification.

In *R v Hookway*, the Court of Appeal relied on two aspects of the medical artist Richard Neave’s evidence in holding that his finding of ‘very powerful support’ for identification was by itself sufficient to justify conviction. One was that he had explained to the jury how he reached his conclusions – but it is difficult to see how merely understanding his methods could justify the jury in being sure of his results. The other was that Neave ‘conceded that, if a trawl were made through Manchester, it might be possible to find one or two other people of similar appearance’.<sup>75</sup> Leaving aside the fact that Neave’s ‘one or two’ could be no more than a guess, and even if it could be safely assumed that the robber was a Mancunian, the evidence at best showed that Hookway was one of a small number of possible suspects. Mike Redmayne has suggested that this objection is not convincing because the jury might reasonably assume that Mr Hookway was not plucked at random from the streets of Manchester, and this is the kind of common-sense generalisation that jurors can properly bring to bear on that evidence.<sup>76</sup> Whether juries should be free to convict on the basis of speculation about reasons for suspicion that are not supported by admissible evidence is certainly debateable, but in addition the existence of searchable databases makes it at least theoretically possible that a suspect could be identified purely on the basis of his resemblance to a video image.

While *Hookway* was apparently a case where the photographic evidence was of unusually good quality,<sup>77</sup> the same was not true of *R v Weighman*, where the expert was prepared to say only that

‘the quality of the CCTV in the garden was quite good. He found 13 points of similarity between the compared images of the offender and the appellant, and no dissimilarities. Had he of course identified

dissimilarities, then that would have allowed the appellant to be excluded. Conversely, he could find no unique identifying feature which would allow a positive identification.’<sup>78</sup>

The witness considered that these features provided ‘strong support’ for the proposition that the defendant was the man in the video, but this was only the third point on the five-point scale he adopted, from ‘no support’ to ‘extremely strong support’. The Court of Appeal found that this evidence ‘taken together with the fact that the jury were able to look at these images themselves’ was sufficient to justify conviction.<sup>79</sup> But whatever the jury could see for themselves was only what the expert could see and point out to them, and the same set of resemblances cannot legitimately be counted twice, nor can the jury’s impression of them reasonably be considered more powerful evidence than that of the expert. *Weighman* well illustrates the dangers of digital images – that they may wrongly be seen as independent and compelling confirmation of an expert’s finding; and that they could in theory, though probably not in current prosecution practice,<sup>80</sup> lead to convictions based solely on a ‘hit’ in a database of facial images.

### A way forward

The Law Commission’s report on *Expert Evidence in Criminal Trials in England and Wales* proposes a the following ‘core test’ of admissibility:

expert opinion evidence is sufficiently reliable to be admitted if—

- (a) the opinion is soundly based, and
- (b) the strength of the opinion is warranted having regard to the grounds on which it is based.<sup>81</sup>

It is apparent from the Law Commission’s comments on forensic techniques such as ‘earprint’ evidence that they envisage this test being applied in a way that would allow evidence based on methods that had been subject to little or no testing to be left to the jury provided that the ‘strength’ of the opinion went no further than was ‘warranted’. Thus the sort of evidence given in *Weighman* – that the expert’s ‘subjective opinion’ based

<sup>75</sup> *R v Hookway* (1 Feb 1999, transcript). The case is briefly reported as *R v Hookway* [1999] Crim LR 750.

<sup>76</sup> Mike Redmayne, ‘Appeals to Reason’ (2002) 65 MLR 19, 28.

<sup>77</sup> Caroline Wilkinson, personal communication.

<sup>78</sup> [2011] EWCA Crim 2826 at [7].

<sup>79</sup> [2011] EWCA Crim 2826 at [17].

<sup>80</sup> See ACPO and NPIA, *Forensic Identification Guidance 2009*, discussed above.

<sup>81</sup> Law Commission Report no. 325, *The Admissibility of Expert Evidence in Criminal*

*Proceedings in England and Wales*, para. 9.11.



on ‘extensive experience’<sup>82</sup> that there were no observable differences between two faces but nothing that would allow a positive identification – would still be admissible. If the actual decision in *Weighman* can be dismissed as an aberration – perhaps influenced by the judges’ own impression that images shared ‘characteristics which could not be described as average in any sense’<sup>83</sup> – then such evidence ought to be considered insufficient to support a conviction on its own, but capable of supporting a case based on other evidence.

Unfortunately, because of its cost implications, there is no immediate prospect of the Law Commission report being implemented.<sup>84</sup> However, the main effect of the ‘core test’, namely to render inadmissible any statement of opinion that is stronger than is warranted by the grounds on which it is based, could be achieved under the Police and Criminal Evidence Act 1984, s. 78. Such a statement clearly has a potentially prejudicial effect – that the jury will accept it at face value – and has no probative value whatever beyond that of a suitably qualified statement. Following *Buckley*, it should therefore, if adduced on behalf of the prosecution, be excluded on the ground of fairness. The decision in *Atkins* and the Criminal Procedure Rules also point to the importance of expressing evidence in terms that are suitably qualified and which also set out the ‘range of opinion

on the matters dealt with in the report’ (which should include the highly critical views of some well-qualified commentators on facial mapping).<sup>85</sup> Taken together with a rigorous application of the *Galbraith* test as interpreted in *Daley*, this would achieve much the same results as the Law Commission test. Clearly this would not go far enough for some critics of forensic science evidence, but it would ameliorate the worst dangers involved in facial comparison evidence.

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82 [2011] EWCA Crim 2826 at [7].

83 [2011] EWCA Crim 2826 at [8].

84 Andrew Rennison, *the Forensic Science Regulator*, speaking at the Symposium

on *Fingerprint Evidence*, Northumbria University, 12 June 2012.

85 *Criminal Procedure Rules 2010*, r. 33.3(1)(f) and (g).