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Recommended Citation

Lissa Griffin, Forensic Evidence and the Court of Appeal for England and Wales, 4 Brit. J. Am. Legal Stud. 619 (2015), <http://digitalcommons.pace.edu/lawfaculty/1013/>.

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FORENSIC EVIDENCE AND THE COURT OF APPEAL FOR ENGLAND AND WALES

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ABSTRACT

The Criminal Division of the Court of Appeal has extensively analyzed the role of forensic evidence. In doing so, the court has grappled with the admissibility and reliability of a broad range of forensic evidence, from DNA and computer forensics to medical and psychological proof, to more outlying subjects like facial mapping, fiber analysis, or voice identification. The court has analyzed these subjects from two perspectives: the admissibility of such evidence in the lower courts and the admissibility of such evidence as fresh evidence on appeal. In both contexts, the court has taken a practical approach to admitting forensic proof that is deemed to be helpful and reliable. It has also given helpful guidance to practitioners dealing with these issues, and to judges who must instruct juries about how to evaluate forensic evidence. Compared to the approach of the United States courts, the Court of Appeal has indicated a greater willingness to keep pace with scientific developments and to admit forensic proof that contributes to the accuracy of criminal verdicts.

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I. INTRODUCTION

The Criminal Division of the Court of Appeal in England and Wales (“the court”) has had an extensive relationship with forensic evidence in criminal cases. Its history of grappling with many forms of forensic evidence is broad and detailed: throughout the years, the court has explored the admissibility and reliability of DNA evidence, medical evidence, and psychological evidence as well as computer forensic testimony, fingerprinting, facial mapping, and other types of forensic proof.¹

The court has addressed this kind of evidence through two vehicles: (1) by reviewing the treatment of those issues in trial courts;² and (2) by way of its power to receive fresh evidence – forensic or otherwise - on appeal.³ As to the first approach, the court has written extensively on the admissibility of forensic evidence at trial. Specifically, the court has analyzed the questions of when convictions based on forensic evidence are unsafe and what is required of the prosecution and defense when offering or contesting forensic proof at trial and on appeal. As to the second approach, the court has discussed when fresh forensic evidence should be received on appeal, and how to treat new scientific developments. In its analysis, the court has been assisted greatly by specific protocols established

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¹ See generally *R. v. Coats*, [2013] EWCA (Crim) 1472 (psychological); *R. v. Hall*, [2011] EWCA (Crim) 4 (fiber); *R. v. Smith*, [2011] EWCA (Crim) 1296, [2011] 2 Cr. App. R. 16 (fingerprint); *R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24 (medical); *R. v. Inglis*, [2010] EWCA (Crim) 2637 (psychological); *R. v. O’Shea*, [2010] EWCA (Crim) 2879 (document and computer); *R. v. Reed & Anor.*, [2009] EWCA (Crim) 2698, [2010] 1 Cr. App. R. 23 (DNA); *R. v. Atkins & Anor.*, [2009] EWCA (Crim) 1876, [2010] 1 Cr. App. R. 8 (facial mapping); *R. v. JRH*, [2005] EWCA (Crim) 1828, [2006] 1 Cr. App. R. 10 (psychological); *R. v. Kai-Whitewind*, [2005] EWCA (Crim) 1092, [2005] 2 Cr. App. R. 31 (medical); *R. v. Otoo*, No. 9906358/Y3, ¶¶ 26, 39 (C.A. Jan. 31 2005) (on file with author) (DNA); *R. v. Cannings*, [2004] EWCA (Crim) 1, [2004] 2 Cr. App. R. 7 (medical); *R. v. Shirley*, [2003] EWCA (Crim) 1976 (DNA); *R. v. O’Doherty*, [2002] NICA (Crim) B51; [2002] N.I. 263 (voice identification).

² See discussion *infra* Parts II-III.

³ The court itself has referred to seminal cases in this context such as *R. v. Jones*, [1997] 1 Cr. App. R. 86; *R. v. Kai-Whitewind*, [2005] EWCA (Crim) 1092, [2005] 2 Cr. App. R. 31; *R. v. Meachen*, [2009] EWCA (Crim) 1701; and *R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24. See discussion *infra* Parts II-III.

by the forensic science community, the Forensic Science Regulator,⁴ and by Parliament.⁵

Part II of this chapter addresses the general standards for admissibility of forensic evidence in the Court of Appeal. Part III analyzes how the general standards outlined in Part II have been applied to various types of forensic evidence, including DNA, medical evidence, psychological evidence, fingerprints, computer evidence, and other less conventional evidence such as fibers, voice, and facial mapping evidence. The chapter concludes with some general observations about the willingness to receive relevant forensic proof and the substantial guidance the court has given to practitioners seeking to introduce such proof in that court.

II. GENERAL STANDARDS

A. ADMISSIBILITY

Part 33 of the Criminal Procedure Rules provides the standard for admissibility of any kind of expert forensic evidence.⁶ The standard must be satisfied before expert testimony is received at trial or on appeal. In *R. v. Reed & Anor*,⁷ the court summarized the kinds of evidence that could be admissible under the rules as follows:

- a. Expert evidence of a scientific nature is not admissible where the scientific bases on which it is advanced is insufficiently reliable for it to be put before the jury.
- b. Even if the scientific basis is sufficiently reliable, the evidence is not admissible unless it is within the scope of evidence an expert can properly give.
- c. Unless the admissibility is challenged, the judge will receive that evidence. If objection is made, the party proffering the evidence must prove its admissibility.

Applying these standards, the court held that forensic trial proof should not have been received where its alleged scientific basis is not sufficiently reliable.⁸

⁴ The Forensic Science Regulator ensures that the United Kingdom's forensic science service providers comply with the appropriate scientific quality standards. The Forensic Science Regulator is responsible for establishing scientific quality standards and for guiding forensic science service providers to comply with those standards. *Forensic Service Regulator*, GOV.UK, <https://www.gov.uk/government/organisations/forensic-science-regulator/about> (last visited Aug. 16, 2014).

⁵ Specifically, Parliament addressed the use of forensic evidence in court through the presentment of expert witnesses. See Criminal Procedure Rules, 2013, Part 33, available at <https://www.justice.gov.uk/courts/procedure-rules/criminal/docs/2012/crim-proc-rules-2013-part-33.pdf>.

⁶ Criminal Procedure Rules, 2013, Part 33, available at <https://www.justice.gov.uk/courts/procedure-rules/criminal/docs/2012/crim-proc-rules-2013-part-33.pdf>.

⁷ [2009] EWCA (Crim) 2698, [2010] 1 Cr. App. R. 23 at ¶¶ 111-13.

⁸ *Id.* ¶114.

This can be a very multi-faceted and complex issue. In more controversial areas, the court's analysis might deal with whether the claimed scientific basis is recognized by experts in the field or whether there is even a scientific basis for the expert's conclusions (for example, shaken baby syndrome deaths,⁹ auditory analysis,¹⁰ and explosives testing.)¹¹ In more traditional forensic areas, such as DNA evidence, the court might address whether the statistical evidence is reliable; where there is no statistical evidence, the court will need to determine whether an expert's "evaluative" opinion, based on his or her experience and expertise, is sufficiently reliable to be admissible.¹²

B. FRESH EVIDENCE ON APPEAL

More often, the Court of Appeal addresses evidentiary issues that arise when fresh forensic evidence is offered on appeal.¹³ In addition to satisfying the standard for admissibility of expert forensic evidence, the fresh evidence offered on appeal must satisfy Section 23 of the Criminal Appeal Act 1968.¹⁴ That statute requires the Court of Appeal to receive fresh evidence where:

- (1) the "evidence appears to the Court to be capable of belief";
- (2) it appears to the Court that the evidence "may afford any ground for allowing the appeal";
- (3) "the evidence would have been admissible in the proceedings from which the appeal lies on an issue which is the subject of the appeal"; and
- (4) "there is a reasonable explanation for the failure to adduce the evidence in those proceedings."¹⁵

In addition to its mandatory receipt of fresh evidence, the court may use its discretion to receive new evidence when it is "expedient in the interests of justice" to do so.¹⁶ Under this standard, fresh evidence will be received when it is "new and compelling."¹⁷

⁹ R. v. Henderson, Butler and Oyediran, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24; R. v. Bacchus, [2004] EWCA (Crim) 1756.

¹⁰ R. v. O'Doherty, [2002] NICA (Crim) B51; [2002] N.I. 263.

¹¹ R. v. Assali, [2005] EWCA (Crim) 2031.

¹² See R. v. Dlugosz, [2013] EWCA (Crim) 2.

¹³ This procedural step is the equivalent of receiving newly discovered evidence in the United States courts. In the United States, however, appellate courts do not receive any evidence; if newly discovered evidence is to be considered, the proceeding must take place in the trial court in which a conviction was previously entered, and often before the same judge who presided at the earlier trial.

Criminal Appeal Act 1968, § 23, available at

<http://www.legislation.gov.uk/ukpga/1968/19/section/23#commentary-c1424586>.

¹⁵ *Id.* § 23 ¶ 2(a)-(d).

¹⁶ *Id.* § 23 ¶ 1. See, e.g., R. v. Hall, [2011] EWCA (Crim) 4; R. v. O'Shea, [2010] EWCA (Crim) 2879.

¹⁷ R. v. O'Shea, [2010] EWCA (Crim) 2879. Courts have admitted "new and compelling" evidence when the fresh evidence is sufficient to render the conviction unsafe. To determine the safety of a conviction, courts have looked at several factors, including the strength of the proof

Aside from the general questions of admissibility that arise from the Criminal Procedure Rules, Court of Appeal decisions involving fresh forensic evidence frequently examine two other questions: (1) if the issue is whether the evidence should be received, the court examines whether there is good reason why the evidence was not presented before; and (2) if the issue is whether the new evidence renders the conviction unsafe, the court examines whether the evidence is sufficiently significant to have had an impact on the verdict under the Court of Appeal's *Pendleton* standard. – i.e., whether new evidence “might reasonably have affected the decision of the trial jury to convict.”¹⁸ The first inquiry goes to the question of whether the evidence should be received, and the second question goes to whether, if it is received, the conviction should be quashed. In fact, as a practical matter, the two issues work together: the court is unlikely to find that proffered fresh evidence supports any ground for allowing the appeal if that evidence is not significant enough to render the verdict unsafe.¹⁹

In some cases, the court has directly addressed whether fresh forensic evidence should be received. Interestingly, however, these cases are the rarest. Instead, in many cases the court will receive fresh evidence *de bene esse* and proceed directly to the question of whether the evidence would render the conviction unsafe.²⁰ Accordingly, the issue of receipt is not initially addressed: if the court concludes the conviction is unsafe, it will then receive the fresh evidence.²¹ In some other cases, the issue of receipt is not addressed because the prosecution has conceded that the fresh evidence should be received and considered.²² The prosecution's argument in those cases is that the evidence, although admissible on appeal, is not significant enough to render the conviction unsafe.²³

It is clear that fresh forensic evidence will not be received if it was available at trial, regardless of whether it was used or not.²⁴ If it was used at trial and the

itself, the issues at trial, the existence or strength of other evidence supporting the verdict, and the accuracy and clarity of jury directions about how to evaluate the reliability of the evidence, whether to accept it, and how to use it. *See, e.g.*, *R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24; *R. v. O'Shea*, [2010] EWCA (Crim) 2879; *R. v. Boreman & Ors.*, [2006] EWCA (Crim) 2265; *R. v. Reed & Anor.*, [2009] EWCA (Crim) 2698; *R. v. Clark*, [2000] EWCA (Crim) 54.

¹⁸ *R. v. Pendleton*, [2000] EWCA (Crim) 45, [19].

¹⁹ *See, e.g.*, *R. v. Kai-Whitewind*, [2005] EWCA (Crim) 1092, [2005] 2 Cr. App. R. 31. This conclusion is quite similar to the situation in the United States, where courts are generally unwilling to admit so-called “newly discovered evidence.” Unless it would have had a substantial likelihood of changing the verdict.

²⁰ The court will receive fresh evidence *de bene esse* even when the fresh evidence is witness testimony from witnesses in the same expertise as the witnesses previously available. *See R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24.

²¹ *See, e.g.*, *R. v. Cannings*, [2004] EWCA (Crim) 1, [2004] 2 Cr. App. R. 7.

²² *See, e.g.*, *R. v. Pluck*, [2010] EWCA (Crim) 2936 (conceding that fresh DNA evidence ought to be received); *Hall v. R.*, [2011] EWCA (Crim) 4 (conceding that developments in fiber testing are not available).

²³ *Id.*

²⁴ *R. v. Reed & Anor.*, [2009] EWCA (Crim) 2698, [2010] 1 Cr. App. R. 23 (finding that Reed's decision not to present forensic evidence that was available at trial did not affect the question of

fresh evidence is offered later, simply to contradict the original evidence, that evidence will not be received.²⁵ Essentially, contradictory evidence offered to rebut and discredit the expert that testified at trial will not be received.²⁶ The same principle precludes relief where the defendant obtained expert reports but chose not to use them at trial.²⁷

A significant number of cases before the Court of Appeal concern the admission of fresh forensic evidence that was not available at the time of trial but that has subsequently become available due to scientific developments.²⁸ In some sense, these cases are easier for the court to resolve because they do not raise questions of whether the evidence was available at the time of trial or why the evidence was not prevented earlier. Since the Court of Appeal decides appeals under the law that exists at the time of the appeal, not the law at the time of trial,²⁹ it tends to take a relatively lenient approach to at least considering new scientific evidence even if it concludes that the conviction is not unsafe. Those cases are extremely interesting and represent the court's willingness to test old convictions by the standards of modern science.

Whether a conviction will be held to be unsafe based on a finding that trial evidence was inadmissible or based on the receipt of fresh evidence on appeal turns on several factors. The court has grappled on a case-by-case basis with the ultimate safety of a conviction and whether fresh evidence – considered *de bene esse* or received – is sufficient to render a conviction unsafe. In evaluating these cases, the court generally looks at the following factors: the experience and qualifications of the experts (i.e., the strength of the proof itself); the issues at trial, for example, whether the subject of scientific evidence was important; the existence or strength of other evidence supporting the verdict; and the accuracy and clarity of jury directions about how to evaluate the reliability of the evidence, whether to accept it, and how to use it.³⁰

admissibility). In essence, Reed waived receipt of fresh forensic evidence by choosing not to present it at trial when it was available.

²⁵ See, e.g., *R. v. Kai-Whitewind*, [2005] EWCA (Crim) 1092, [2005] 2 Cr. App. R. 31.

²⁶ As the court expressly noted, convictions will not be quashed in cases where a defendant is repeating “evidence of the same effect by some other expert.” *Id.* ¶ 97.

²⁷ *Id.*

²⁸ See, e.g., *R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24 (finding a new possible cause for the symptoms that scientists believed could only be caused by shaken baby syndrome); *R. v. Reed & Anor.*, [2003] EWCA (Crim) 1976 (addressing the development of DNA evidence).

²⁹ *R. v. Shirley*, [2003] EWCA (Crim) 1976.

³⁰ See, e.g., *R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24; *R. v. O’Shea*, [2010] EWCA (Crim) 2879; *R. v. Boreman & Ors.*, [2006] EWCA (Crim) 2265; *R. v. Reed & Anor.*, [2009] EWCA (Crim) 2698; *R. v. Clark*, [2000] EWCA (Crim) 54. Thus, for example, the court has held that clear and accurate jury directions are required when forensic evidence is presented. Clear and accurate jury directions include, if relevant, directing the jury that the science at issue is undeveloped. In addition, the jury should be told that the possibility that evidence exists which would assist the accused or exculpate him does not provide grounds for excluding relevant evidence. Rather the jury must evaluate the existing evidence properly. See *R. v. Bates*, [2006] EWCA (Crim) 1395 [¶30].

Significantly, the Court of Appeal has made very clear what it expects from counsel presenting or challenging expert evidence at trial: strict compliance with Criminal Procedure Rules Part 33.³¹ The court did so in the context of expert DNA evidence.³² In *Henderson, Butler and Oyediran v. R.*,³³ the court also set out the duties of appellate counsel in presenting new evidence.³⁴ There, it praised the efforts of counsel as follows:

All counsel we heard in these cases were able to assist due to their experience in cases such as these and to the skill with which they deployed that experience. It is no criticism of other counsel if we highlight the manner in which counsel for the prosecution, Joanna Glynn QC and Sarah Campbell, and for the defense, Mr[.] Topolski QC and Andrew Scott, in *Henderson*, prepared their appeal. The skeleton arguments were focused upon the particular medical evidence. Different features of that evidence were clearly identified and when any medical proposition was advanced, it was explained and its source clearly identified. A number of different disciplines were involved, all of which were clearly distinguished by separate files, separately colored and with the underlying evidence and literature upon which that evidence was based, identified and collated. A core literature file, prepared by Mr[.] Topolski, enabled the court to find and weigh the underlying literature upon which controversial evidence was based. The Vice-President conducted a detailed case management hearing providing timetables and giving directions as to how the evidence was to be prepared. Importantly, meetings were held between the experts so as to identify clearly those issues upon which agreement had been reached and those issues which remained a matter of debate. Without such preparation and obedience to the directions given by the Vice-President it would have been difficult properly to resolve the appeal. The example of the preparation in that case should, we suggest, be followed in future appeals.³⁵

³¹ Criminal Procedure Rules, 2013, Part 33, *available at* <https://www.justice.gov.uk/courts/procedure-rules/criminal/docs/2012/crim-proc-rules-2013-part-33.pdf>.

³² “Part 33 of the Criminal Procedure Rules ...set[s] out the procedure through which the court controls expert evidence in the developing science of DNA....Rule 33.3(1) [provides] a very important safeguard. This requires at sub-paragraphs (f) and (g) each expert to identify where there is a range of opinion on the matters dealt with in his report. In such a case, the expert must summarise the scope of opinion and give reasons for his own opinion. If the expert cannot give his opinion without qualification, he must state the qualification. Compliance with this obligation will identify for the other party an area where there is a range of opinion; it is particularly important that this rule is followed in the expert report obtained by the Crown.” *R. v. Reed & Anor.*, [2009] EWCA (Crim) 2698 [¶ 129], [2010] 1 Cr. App. R. 23 [¶ 129].

³³ [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24.

³⁴ *Id.* ¶ 5 (noting, “Since the appeal depends upon an assessment of the expert evidence, just as at trial, the preparation and marshalling of that expert evidence is of the utmost importance in achieving just resolution. The appeal requires presentation by counsel experienced and expert in the field of what is contended to be the unexplained death of or injury to a child. Such counsel need to be able to identify focussed issues upon which this court can concentrate and to identify the evidence, whether it be evidence at trial or which it is sought to call, on which resolution of those issues will depend.”).

³⁵ *Id.*

Finally, as in all of its cases, the question of remedy in forensic evidence cases is an independent issue for the Court of Appeal. Where fresh evidence renders a conviction unsafe, should there be a retrial or should the conviction simply be quashed? As in other cases, the default remedy is to quash the conviction.³⁶ However, the court also may order a retrial.³⁷

III. TYPES OF FORENSIC PROOF

A discussion of how these general principles are applied in cases addressing various types of evidence best demonstrates the court's treatment of forensic evidence. Accordingly, this chapter analyzes the Court of Appeal's approach to DNA, medical, psychological, fingerprint, and computer evidence, as well as less traditional forms of forensic evidence such as fiber, voice and facial mapping proof.

A. DNA

DNA presents the prototypical case in which the court has been asked to receive fresh evidence that was unavailable at trial because the science had not developed sufficiently at the time. In the 1980s, when DNA evidence was entirely new, the court addressed the testing process, the interpretation of testing results, the role of experts, and the directions given to juries.³⁸ Analysis continued as the science developed.³⁹ Once DNA testing became an accepted area of forensic science, new issues arose. In a case where DNA results were received in evidence at trial, samples that had not been subject to testing were later proved to be testable. Similarly, more discerning tests have been developed that contradict or add to the evidence at trial. Thus, for example, in *Shirley v. R.*,⁴⁰ the results of DNA testing on a very small piece of material, which results had not been available at trial due to the primitive development of DNA testing, were received in evidence to show that the defendant could not have committed the rape for which he had been convicted.⁴¹ Additionally, in *R. v. Otoo*,⁴² DNA evidence from a pair of trainers that could not earlier have been successfully tested proved that the defendant had not committed the charged robbery and corroborated the defendant's claim that he had been forced to trade trainers with the actual robber.

³⁶ See, e.g., *R. v. Shirley*, [2003] EWCA (Crim) 1976. See also *R. v. Henderson, Butler and Oyediran*, [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24.

³⁷ See, e.g., *R. v. Inglis*, [2010] EWCA (Crim) 2269; *R. v. Friend*, [2004] EWCA (Crim) 2661.

³⁸ See *R. v. Doheny*, [1997] 1 Cr. App. R. 369.

³⁹ *R. v. Bates*, [2006] EWCA (Crim) 1395. For a primer on the basic science of DNA testing and the history of the Court of Appeal's treatment, see *R. v. Reed & Anor.*, [2009] EWCA (Crim) 2698 [¶¶ 28-61], [2010] 1 Cr. App. R. 23 [¶¶ 28-61].

⁴⁰ [2003] EWCA (Crim) 1976.

⁴¹ *Id.* ¶ 6 ("At the time of the offence and its investigation, the state of relevant scientific knowledge and expertise did not allow effective DNA profiling from samples bearing such little material as was to hand in this case; all that could sensibly be done was to test the recovered semen for blood grouping....").

⁴² No. 9906358/Y3, ¶¶ 26, 39 (C.A. Jan. 31 2005) (on file with author).

One issue addressed by the court concerns the reliability of the various types of DNA testing. In *R. v. Reed & Anor.*,⁴³ the court summarized the history of its treatment of DNA evidence based on low template DNA testing, (LCN DNA) an older method, and received, *de bene esse*, fresh scientific evidence challenging the reliability and evidential value of such test results.⁴⁴ In that case, a challenge to the reliability of that evidence was abandoned on appeal after a more sophisticated test revealed the same results.⁴⁵ Nevertheless, the court took the opportunity to analyze the reliability of low template DNA evidence for future cases.⁴⁶ Thus, the court explained that the amount of DNA available for testing must be quantified before testing and that such evidence would henceforth be considered as reliable if 100-200 picograms of genetic material were available for testing.⁴⁷ In cases where there is a dispute about the size of the sample, the parties should present expert evidence on the subject of whether a reliable interpretation can be made “by persons who are expert in the science of DNA and supported by the latest research on the subject.”⁴⁸

The court has prescribed the jury directions that should be given where the jury is required to evaluate DNA proof.⁴⁹ In brief, where evidence of a probable match is presented and contested, the judge must explain the relevance of the alleged probability and the other evidence that gives the probability its probative value and must “draw attention to any evidence which might exculpate the defendant.”⁵⁰

A significant issue is the admissibility and treatment of expert forensic testimony about DNA where the expert’s opinion is not based on statistics but rather on experience and expertise. This situation arises, for example, where there is insufficient material for reliable testing or where the issue is not identification but method of transfer, discussed below. As discussed earlier in Part II, such “evaluative” expert evidence generally will be admissible if the court concludes the experience and expertise upon which it is based is sufficient. Given the risk that the jury will overestimate the strength of this evidence, however, the court must be careful to instruct clearly about how to evaluate the reliability of such proof.⁵¹

⁴³ [2009] EWCA (Crim) 2698, [2010] 1 Cr. App. R. 23.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.* Based on Prof. Caddy’s study and recommendations, which were accepted by the Forensic Science Regulator, the jury should be informed of any Low Template DNA profile regardless of the quantity of DNA. However, in such cases, the jury should be cautioned that the quantity of DNA is unknown, the time of DNA transfer is unknown, and that the possibility of secondary transfer here is more likely than in standard DNA profiling. Dr. Caddy further contends that DNA profile matches due to LCN DNA profiling should be reported to the jury as a match only. The source of DNA material or the activity through which it was transferred should not be mentioned. *Id.* ¶¶ 115-16.

⁴⁸ *Id.* ¶ 74(v).

⁴⁹ *Id.* ¶¶ 54-55.

⁵⁰ *Id.* ¶ 55.

⁵¹ See *supra* Part II, discussing *R. v. Dlugosz* [2013] EWCA (Crim) 2.

A related issue, therefore, addressed by the court is the reliability of expert testimony – often, again, based not on statistics here but on experience and expertise – as to the manner and time of DNA transfer – how and when did the DNA get to be where it was found? This can be a critical issue at trial. In fact, this was the main issue in *R. v. Reed & Anor.*,⁵² where the defendants, whose DNA was found in the victim’s home, had claimed they had never been there.⁵³ At trial, the prosecution’s expert testified that the most likely explanation for the defendants’ DNA on the handles broken off of two knives that were found in the house was that the defendants brought the knives there and were handling them when they broke.⁵⁴ The prosecution’s expert did not address other potential explanations for the DNA on the knife handles such as an innocent primary touching of the knives or possible secondary touching, whereby the defendants touched the hands of someone who then touched the knives. The defendants argued that the expert testimony introduced by the prosecution went well beyond that which was scientifically possible to explain, that it was not possible to scientifically opine about how the cellular material got on the knife handles, and that the expert’s testimony constituted “a direction from an expert to convict.”⁵⁵ The defense further argued that the expert’s testimony regarding secondary transfer was “unrealistic.”⁵⁶ The defense presented its own experts. One defense expert testified that “no firm view could be expressed as to the time for which an object had to be held for primary transfer to take place or the period of time that could elapse between primary and secondary transfer.”⁵⁷ Accordingly, a scientific opinion could not be made as to the method of transfer.⁵⁸ The second defense expert’s supporting testimony was dismissed since his expertise in the interpretation of DNA results was limited: “His expertise did not extend to examining the scene of a crime and relating that examination to the evaluation of the circumstances of transfer of unidentified cellular material.”⁵⁹

The court concluded, first, that an opinion as to how the DNA was placed on the material from which the DNA cellular material was taken is admissible where the quantity of DNA is above 200 picograms.⁶⁰ Second, the court explained that, although the science on transferability was incomplete and thus arguably failed to satisfy the second prong of the Criminal Procedure Rules’ test, which requires that the conclusion is within the expert’s competence, the underlying science was sufficiently reliable for a range of possibilities to be enumerated.⁶¹ However, the court noted that a range of possibilities could only be enumerated if the limitations are made clear to the jury.⁶² The expert also can give

⁵² [2009] EWCA (Crim) 2698, [2010] 1 Cr. App. R. 23.

⁵³ *Id.* ¶ 147.

⁵⁴ *Id.* ¶¶ 87-90.

⁵⁵ *Id.* ¶ 91.

⁵⁶ *Id.* ¶ 92.

⁵⁷ *Id.* ¶ 100(ii).

⁵⁸ *Id.*

⁵⁹ *Id.* ¶ 103.

⁶⁰ *Id.* ¶ 118-19.

⁶¹ *Id.* ¶ 119.

⁶² *Id.*

an evaluation of those possibilities. The known mechanisms of primary and secondary transfer, the observations at the scene, and any other facts upon which the opinion is based should be enumerated.⁶³ The court warned, however, that “care must be taken to guard against the dangers of that evaluation being tainted with the verisimilitude of scientific certainty....”⁶⁴ That was the case in *Reed*, and the expert’s opinion that it came from knives brought in by the defendants was admissible.⁶⁵ However, the court explained that the expert’s testimony that the defendants were handling the knives when the knives broke was improper because there was no reliable scientific basis to support it.⁶⁶ However, since it was not objected to and since the court concluded that it did not affect the jury’s conclusion, the appeals were dismissed.⁶⁷

The decision in *R. v. Reed & Anor.*, concluded with an outline of the appropriate pre-trial procedures to be undertaken in a case involving DNA evidence. That procedure focuses primarily on Part 33 of the Criminal Procedure Rules.⁶⁸ Rule 33.3(1) provides, in relevant part, the following:

- (1) An expert’s report must—
 - ...(f) where there is a range of opinion on the matters dealt with in the report—
 - (i) summarize the range of opinion, and
 - (ii) give reasons for his own opinion;
 - (g) if the expert is not able to give his opinion without qualification, state the qualification...⁶⁹

The court explained that Rule 33.3(1) provides an important safeguard for expert testimony involving DNA evidence,⁷⁰ particularly subparagraphs (f) and (g).⁷¹ According to the court, these subparagraphs require an expert to qualify any opinion by providing a precise explanation of the opinion, a summary of the scope of the opinion, and the reasons for the opinion.⁷²

If parties have served expert reports on one another, each expert report must be analyzed by each party.⁷³ Any disagreements with the expert report must be brought to the court’s attention.⁷⁴ If the parties have not served expert reports,

⁶³ *Id.* ¶ 120.

⁶⁴ *Id.* ¶ 121.

⁶⁵ *Id.* ¶ 122.

⁶⁶ *Id.* ¶ 127.

⁶⁷ *Id.* ¶ 123.

⁶⁸ *Id.* ¶ 129.

⁶⁹ Criminal Procedure Rules, 2013, Part 33, *available at* <https://www.justice.gov.uk/courts/procedure-rules/criminal/docs/2012/crim-proc-rules-2013-part-33.pdf>.

⁷⁰ [2009] EWCA (Crim) 2698 [¶ 129].

⁷¹ *Id.*

⁷² *Id.* ¶ 131.

⁷³ *Id.* ¶ 131(i).

⁷⁴ *Id.* ¶ 131(ii).

the prosecution and defense must take necessary steps to ensure that any disagreements with the expert report are brought to the court's attention.⁷⁵

In addition, the court referred to Rule 33.6(2), which gives the court the "power to direct experts to discuss expert issues in the proceedings and prepare a statement for the court of the matters on which they agree and disagree giving their reasons."⁷⁶ If the court does so, the experts should put forth a statement that outlines the basic science that is agreed upon and that identifies precisely what is in dispute.⁷⁷ If the expert does not meet with the court or produce this statement, the court will exercise discretion and may potentially decide to prevent the party, whose expert was supposed to produce this statement, from calling that expert to give evidence.⁷⁸ Failure to meet with the court or produce a report because the expert does not have time does not provide good cause to excuse the Rule 33.6(2) requirement.⁷⁹

B. MEDICAL EVIDENCE

The court also has frequently addressed questions of the admissibility and weight of expert medical testimony. Most often, the cases involve medical evidence offered by the prosecution to establish cause of death or to support an allegation of sexual abuse that otherwise is based only on a complainant's allegations. In such cases, the court generally focuses on the experience and special training (clinical or academic) of the witness; the materials available to the witness and on which the witness bases his or her opinion (actual samples or not); evidence - expert or otherwise - that confirms or supports that opinion; and the clarity and accuracy of the directions of the judge concerning the jury's evaluation of that evidence. The two most frequently addressed issues are cause of death in homicide cases and corroboration of allegations of sexual abuse.

i. Cause of Death

Several important aspects of the court's handling of medical evidence derive from cases involving the unexpected death of an infant, i.e., Sudden Infant Death Syndrome (SIDS) and shaken baby syndrome cases.

The first case, *R. v. Cannings*,⁸⁰ involved a battle between forensic experts who disagreed about whether the infant's death was from natural causes or from trauma.⁸¹ The Court of Appeal quashed a conviction not, as it later explained, because there was no way for the jury to reject or accept either position, but

⁷⁵ *Id.* ¶ 131(iii).

⁷⁶ *Id.* ¶ 130.

⁷⁷ *Id.* ¶ 131(v).

⁷⁸ *Id.* ¶ 131(vi).

⁷⁹ *Id.* The court notes that this procedure will "identify whether the issue in dispute raises a question of admissibility to be determined by the judge or whether the issue is one where the dispute is simply one for determination by the jury." *Id.* ¶ 132.

⁸⁰ [2004] EWCA (Crim) 1, [2004] 2 Cr. App. R. 7.

⁸¹ *Id.*

because the only support for the allegation that the mother killed the child was the coincidence of multiple, unexplained infant deaths in one family.⁸²

In *R. v. Kai-Whitewind*,⁸³ which built on language in the *Cannings* decision, the defendant argued the conviction was unsafe for three reasons: (1) there was a serious disagreement among experts about the cause of death; (2) experts had concluded that natural causes cannot be excluded as a possible cause of death; and (3) there was no additional evidence that supported the conclusion that the child was harmed.⁸⁴ The court rejected the contention that, in a case involving a single death, a disagreement among experts is sufficient to render the conviction unsafe.⁸⁵

In *Kai-Whitewind*, the court also was asked to receive extensive allegedly fresh evidence in support of the conclusion that the infant had died of natural causes. The court received this evidence *de bene esse*, but then rejected it because there was no explanation for why it had not been produced a trial⁸⁶ and because it did not add anything to the appellant's argument.⁸⁷

A major decision involving forensic medical evidence is that in *Henderson, Butler and Oyediran v. R.*,⁸⁸ the most recent set of shaken baby syndrome cases. Each case involved an infant homicide based on allegations that an unexpected infant death was caused by shaking.

⁸² *Id.* ¶ 175-79.

⁸³ [2005] EWCA (Crim) 1092, [2005] 2 Cr. App. R. 31.

⁸⁴ *Id.* ¶ 74.

⁸⁵ *Id.* ¶ 89. The *Kai-Whitewind* court's reliance on *Cannings* is misplaced. The *Cannings* court explained that where the only support for a conclusion of unaccidental death is the coincidence of other unexplained infant deaths in the family, the prosecution normally should not be brought. The basis for the ruling in *Cannings* was not that there was a disagreement among experts that the jury could not resolve, but that the only basis for the charge was coincidence. As in *Kai-Whitewind*, where only one infant death is involved, a disagreement among experts does not render the conviction unsafe.

⁸⁶ The defense sought to call five expert medical witnesses whom were not produced at trial. *Id.* ¶ 94. The court dismissed defense's request for two reasons. First, the defense was able to call these five experts at trial and no explanation was provided for why these five experts were not produced. *Id.* ¶ 95. Second, the evidence they would have produced was produced at trial by another expert. *Id.* Accordingly, the witness would not add any "fresh" evidence. *Id.* Just because an expert chosen by the defense did not give evidence during trial in a form agreeable to the defense does not allow the defense to produce additional experts after trial. *Id.* ¶ 97.

⁸⁷ During appeal, the defense sought to rely on three experts: Prof. Andrew Nicholson, Dr. Mark Rosenthal, and Dr. Brendan MacDonald. Prof. Nicholson sought to provide evidence of a single cluster of cells found on the slides containing sections of Bidzill's lungs. *Id.* ¶ 98. Prof. Nicholson's evidence was no clinical significance, did not advance appellant's case, and would afford no ground for allowing the appeal. *Id.* Dr. Rosenthal sought to consider the fact that appellant was diabetic and suffered from related health issues as a result. *Id.* ¶ 98. The court found that Dr. Rosenthal provided no relevant evidence. *Id.* Dr. Rosenthal also sought to produce evidence that the green vomit presented an unusual symptom. *Id.* ¶ 100. The court held that this evidence would afford no ground for allowing the appeal. *Id.* ¶ 102. Dr. MacDonald sought to present evidence that doubted Dr. Bonshek's diagnosis of gliosis. *Id.* ¶ 103. Again, the court found that Dr. MacDonald's evidence would not afford a ground for allowing the appeal. *Id.* ¶ 105.

⁸⁸ [2010] EWCA (Crim) 1269, [2010] 2 Cr. App. R. 24.

In the first case, *Henderson*, the prosecution's trial expert testified that the only possible cause of the infant's death was trauma by shaking.⁸⁹ The defense presented expert evidence at trial to rebut that proof.⁹⁰ After trial, a new possible cause for retinal folds and axonal damage was discovered.⁹¹ The defense expert testified that, while he could not exclude trauma as the cause of death, the retinal folds could have resulted instead from hemorrhage and edema.⁹² Accordingly, the appellant claimed that the prosecution expert's testimony was no longer reliable and that the conviction was unsafe.⁹³

The court held that this evidence did not make the conviction unsafe.⁹⁴ While the expert on appeal urged caution in diagnosis, the evidence that retinal folds are generally associated with trauma and that the prosecution expert had never seen them in the absence of trauma was sufficient to support the conviction.⁹⁵ As to the second symptom – axonal damage – the court rejected the challenge by the defense expert, who had himself modified his own views after he had learned more about the case and whose experience with the phenomenon was largely in the past.⁹⁶

A few interesting facts bear mention: the court commented that the defense expert, as a pathologist and not a clinician, could not and did not dispute the expert clinician's conclusion as to cause.⁹⁷ In addition, the defense expert – a pathologist – was from the same specialty as a defense expert consulted at trial but not called to testify.⁹⁸ Accordingly, the relative expertise of the experts and the fact that the defense had not called a pathologist initially was relevant to the court's determination of whether the conviction was unsafe. Finally, the court pointed to the trial court's correct and detailed directions on how the jury should evaluate the expert testimony as having ensured that the issue was fairly and accurately presented to the jury.⁹⁹

In the second case, *Butler*, the court was not asked to receive fresh evidence but simply to evaluate the sufficiency of the evidence at trial.¹⁰⁰ The court quashed the conviction based on evidence that the retinal hemorrhaging supporting the trial expert's diagnosis of shaking had completely resolved itself after the prosecution experts' examination and report.¹⁰¹ The court concluded that in light of that recovery, there could not have been any rational basis on which the jury

⁸⁹ *Id.* ¶ 27.

⁹⁰ *Id.* ¶ 28.

⁹¹ *Id.* ¶ 39.

⁹² *Id.* ¶¶ 29-31.

⁹³ *Id.* ¶ 11.

⁹⁴ *Id.* ¶ 83.

⁹⁵ *Id.* ¶ 42.

⁹⁶ *Id.* ¶ 63.

⁹⁷ *Id.* ¶ 42.

⁹⁸ *Id.* ¶ 29.

⁹⁹ *Id.* ¶¶ 76-79.

¹⁰⁰ *Id.* ¶ 102.

¹⁰¹ *Id.* ¶ 104, 110.

could have rejected an unknown cause.¹⁰² Here, the judge's relevant misdirections were noted.¹⁰³

The third case in *Henderson, Butler and Oyediran v. R.*, the *Oyediran* case, relied on fresh evidence that the court considered *de bene esse*.¹⁰⁴ The fresh evidence was from a biomechanical engineer in support of the defense's contention that the child had been injured in an earlier fall rather than by shaking.¹⁰⁵ The court noted that this defense had been rejected by the jury on substantial evidence and that the defense expert on appeal had conceded the uncertainty of determining causation.¹⁰⁶

Another leading and prominent case is *R. v. Clark*,¹⁰⁷ a homicide prosecution against a mother for the separate deaths of her two children.¹⁰⁸ The defendant claimed at trial that her two children died of sudden infant death syndrome (SIDS).¹⁰⁹ The prosecution's expert, Professor Sir Roy Meadows, testified that the statistical probability of one SIDS death in a family was one in 8,543; the statistical probability for two children dying of SIDS in one family, according to Professor Meadow, was one in 73 million.¹¹⁰ The jury found the mother guilty.¹¹¹

After the initial appeal, a hospital record containing one of the infant's blood tests came to light - a record the prosecution failed to disclose at trial - which established that the child had died of natural causes.¹¹² The court would have quashed the conviction on that basis alone.¹¹³ However, it took the opportunity to state that the statistical evidence should not have been received.¹¹⁴ Such evidence was grossly misleading in that it allowed the jury "without consideration of the rest of the evidence [to] be just about sure that this was a case of murder." and "grossly overstate[d] the chance of two sudden deaths within the same family from unexplained but natural causes."¹¹⁵ The court held that had the expert's testimony been the focus on the first appeal, it would have provided a distinct basis upon which to quash the conviction.¹¹⁶

Another case in which the Court of Appeal received and considered a new medical report that conflicted with the proof at trial was *R. v. Boreman & Ors.*¹¹⁷ In that case, the issue at trial had been whether the deceased died from injuries inflicted by the defendants or by a subsequent fire for which the defendants were

¹⁰² *Id.* ¶ 110.

¹⁰³ *Id.* ¶¶ 112-14.

¹⁰⁴ *Id.* ¶ 125.

¹⁰⁵ *Id.* ¶ 179.

¹⁰⁶ *Id.* ¶¶ 183-85.

¹⁰⁷ [2003] EWCA Crim 1020.

¹⁰⁸ *Id.* ¶ 1.

¹⁰⁹ *Id.* ¶ 8.

¹¹⁰ *Id.* ¶ 94-110.

¹¹¹ *Id.* ¶ 1.

¹¹² *Id.* ¶¶ 2, 111-132.

¹¹³ *Id.* ¶¶ 134-137.

¹¹⁴ *Id.* ¶ 177.

¹¹⁵ *Id.* ¶ 178.

¹¹⁶ *Id.* ¶ 179.

¹¹⁷ [2006] EWCA (Crim) 2265.

not responsible.¹¹⁸ At trial, an expert pathologist testified that the deceased's death resulted from the injuries inflicted by the defendants.¹¹⁹ On referral from the Criminal Cases Review Commission (CCRC),¹²⁰ the court received a new forensic report to the contrary.¹²¹ In addition, the expert's reputation had been discredited in other cases.¹²² Accordingly, the Court of Appeal quashed the conviction—because it found that the expert's testimony may have "tipped the balance" in favor of conviction.¹²³

ii. Corroboration of Sexual Abuse

The court has addressed issues concerning medical proof in several cases involving convictions for sex crimes.¹²⁴ In those cases, the allegation of abuse frequently rests entirely on the complainant and is denied by the defendant.¹²⁵ Medical evidence that is claimed to support the complainant's allegations becomes extremely important and the issue is whether such proof does or does not help to establish that the abuse occurred. Two such cases are *R. v. S & Ors.*¹²⁶ and *R v. Colin John C.*¹²⁷

In *R. v. S & Ors.*, the court addressed four joined cases involving convictions of child sexual abuse under then-current diagnostic criteria, which were different from the diagnostic criteria that existed at the time of trial.¹²⁸ The court relied on current standards contained in "An Evidence Based Review of the literature on Physical Signs of Child Sexual Abuse," which was published in 2008 by the Royal College of Paediatrics and Child Health.¹²⁹ The Crown did not oppose the receipt of this fresh evidence and offered fresh evidence of its own.¹³⁰

In *R. v. B*, the first case of the group of four, the defendant was charged with indecency with a child and appealed his conviction on the basis of fresh evidence. Part of the defendant's fresh evidence was a retraction of the prosecution's trial expert's findings that the physical examination of the child victim conclusively indicated "chronic anal abuse."¹³¹ Under the old standards, that would have been accurate. However, by the time of the appeal, the physical symptoms

¹¹⁸ *Id.* ¶¶ 2, 4.

¹¹⁹ *Id.* ¶ 7.

¹²⁰ The Criminal Cases Review Commission is, of course, the executive, non-departmental public body whose mandate is to review the applications of convicted defendants and to refer cases to the court of appeal for review where there is a "real possibility that the conviction, verdict, finding or sentence would not be upheld were the reference to be made." Criminal Appeal Act, 1995, c. 16 section 13(1)(a).

¹²¹ *Id.* ¶¶ 13-14.

¹²² *Id.* ¶ 9.

¹²³ *Id.* ¶¶ 34- 35.

¹²⁴ See discussion *infra*.

¹²⁵ *Id.*

¹²⁶ [2012] EWCA (Crim) 1433.

¹²⁷ [2010] EWCA Crim 1379.

¹²⁸ [2012] EWCA (Crim) 1433 [¶ 1].

¹²⁹ *Id.* ¶ 5.

¹³⁰ *Id.* ¶ 8.

¹³¹ *Id.* ¶¶ 12, 16.

noted would not have been proven “chronic anal abuse,” but only would have “supported” the diagnosis of “anal penetration.”¹³² The court found the convictions unsafe, even though other expert witness testimony was presented at trial, because of the powerful effect of the prosecution’s initial expert testimony. The prosecution’s initial expert witness provided a graphic description at trial (“I remember this child’s bottom but I cannot remember her face.”) and later rescinded it.¹³³ The court noted how persuasive this evidence would have been on the jury, but that this evidence was now invalid.¹³⁴

The second case in the group of four, *R. v. C.*, was a rape and indecent assault case – a he said/she said credibility contest that turned on whether there was physical evidence to establish the crime. At trial, the prosecution’s examining physician testified to and relied on evidence of “attenuation” of the hymen or “rubbing/tearing away” as evidence of repeated penetration and abuse.¹³⁵ As in *R. v. B.*, diagnostic standards changed after the conviction: by the time of this appeal, attenuation could only be used for diagnostic purposes where there was some record of the condition of the hymen pre-abuse allegation, which was not available in this case. Moreover, the updated diagnostic protocol described “attenuation” and “rubbing/tearing away” as “not helpful” terms¹³⁶ and did not consider the symptoms found by the prosecution’s expert to be a possible result of non-traumatic causes.¹³⁷ Significantly, the crown conceded that their trial expert’s testimony was no longer correct.¹³⁸ The fact that the expert evidence at trial was the only independent evidence supporting the claim led the conviction to be quashed.¹³⁹ Interestingly, unlike the situation in *R. v. S.*, the physical examination of the victim had been recorded, so the experts offering fresh evidence in the Court of Appeal were able to see the condition themselves.¹⁴⁰ This clearly added credibility to the fresh evidence offered.¹⁴¹

Similarly, as in *S* above, in *R. v. Colin John C.*,¹⁴² the court considered an allegation of anal rape that had been supported at trial by medical evidence concerning, *inter alia*, the condition of the victim’s anus.¹⁴³ In its summing up, the court had characterized this medical evidence as “conclusive” of sexual abuse. When fresh evidence established, as in *S*, that the physical findings had subsequently been considered by the profession to be non-specific,¹⁴⁴ the court received

¹³² *Id.* ¶ 18.

¹³³ *Id.* ¶¶ 13, 28.

¹³⁴ *Id.* ¶ 28.

¹³⁵ *Id.* ¶ 35. Interestingly, other doctors found that the hymen was normal. It is not clear why appellant did not challenge this trial proof. *Id.* ¶ 38.

¹³⁶ *Id.* ¶ 38.

¹³⁷ *Id.* ¶¶ 39-40.

¹³⁸ *Id.* ¶¶ 44-45.

¹³⁹ *Id.* ¶ 48.

¹⁴⁰ *Id.* ¶ 35.

¹⁴¹ *Id.* ¶ 38.

¹⁴² [2010] EWCA (Crim) 1379.

¹⁴³ *Id.* ¶ 7.

¹⁴⁴ *Id.* ¶ 15.

the fresh evidence and quashed the conviction.¹⁴⁵ It noted that “the complainant and the appellant were both seemingly honest young people.¹⁴⁶ When the court’s summing up made the medical evidence “for practical purposes decisive,” and fresh evidence made that “anything but plain,” the convictions were quashed.¹⁴⁷

C. PSYCHOLOGICAL EVIDENCE

The cases the court has heard involving psychological evidence fall into two categories: (1) psychological evidence involving mental capacity; and (2) psychological evidence bearing on the reliability of a defendant’s confession or of a witness’ testimony. In many cases, the nature of the psychological testimony has been controversial.¹⁴⁸

i. Mental Capacity or Loss of Self-Control

The cases involving forensic proof of mental capacity are more straightforward than the cases involving expert testimony about the reliability of another person’s statement or testimony. In several of the mental-capacity cases, despite the defense’s failure to present a diminished capacity defense at trial, the court has willingly received fresh psychiatric evidence and quashed the conviction.¹⁴⁹

For example, *Inglis v. R.*,¹⁵⁰ was one of the last cases to address the issue of provocation before that defense was abandoned in favor of the “loss of self-control,” defense.¹⁵¹ In *Inglis*, the Court of Appeal found the conviction unsafe after it received fresh psychiatric evidence that the defendant had suffered from bipolar affective disorder when he killed his wife.¹⁵² The main issue presented to the court was whether the fresh psychiatric evidence could have been presented at trial but was not.¹⁵³

Prior to trial, the defense had instructed two forensic psychiatrists.¹⁵⁴ One forensic psychiatrist opined that the defendant was not suffering from any personality disorder at the time of the killing; the other concluded that evidence of

¹⁴⁵ *Id.* ¶ 23.

¹⁴⁶ *Id.* ¶ 21.

¹⁴⁷ *Id.*

¹⁴⁸ See, e.g., *R. v. Coats*, [2013] EWCA (Crim) 1472; *R. v. JH*, [2005] EWCA (Crim) 1828, [2006] 1 Cr. App. R. 10.

¹⁴⁹ See, e.g., *R. v. Inglis*, [2010] EWCA (Crim) 2269.

¹⁵⁰ [2010] EWCA (Crim) 2269.

¹⁵¹ The provocation defense was replaced by sections 54 and 55 of the Coroners and Justice Act 2009 (the 2009 Act), which created a new partial defense to murder of “loss of control.” See also Attorney General’s Reference No 29 of 2014 [2014] EWCA (Crim) 1314.

¹⁵² The court ordered a retrial. *Id.* ¶ 4.

¹⁵³ *R. v. Inglis*, [2010] EWCA (Crim) 2269.

¹⁵⁴ *Id.* ¶ 6.

a personality disorder was equivocal.¹⁵⁵ As a result, there was no basis for a diminished responsibility defense.¹⁵⁶ Rather, the defense was provocation.¹⁵⁷ Accordingly, the court held that this was not a case “where a deliberate decision” was made not to raise the diminished responsibility issue.¹⁵⁸ Since there was “no realistic forensic basis to advance diminished responsibility,” the prosecution agreed the defendant suffered from bipolar disorder before the crime, at the time of the crime, and after the crime.¹⁵⁹ The prosecution witness, however, contended he had been in remission at the time of the crime.¹⁶⁰ In opposition, the defense produced the testimony of “one of this country’s leading experts on the disorder,”¹⁶¹ who identified specific evidence demonstrating that the defendant had been in a depressive state at the time of the crime.¹⁶² The defense also proffered evidence from a lay witness who provided a detailed account of the defendant’s condition at the time of the killing.¹⁶³ The court found the “fresh evidence is of a sufficient weight and credibility that a jury should consider it on a retrial.”¹⁶⁴

*R. v. Coats*¹⁶⁵ presented the Court of Appeal with a request to receive fresh expert testimony that the defendant had suffered from Battered Woman’s Syndrome when she imported narcotics in suitcases from Jamaica to Heathrow Airport in London.¹⁶⁶ The defendant alleged that she imported the narcotics under duress from her lover, Walters, who met her at the airport in London.¹⁶⁷ At trial, the defense had claimed that she did not know anyone was waiting for her at Heathrow, but she was convicted.¹⁶⁸ She did not appeal her conviction and attempted unsuccessfully to get leave to appeal her sentence.¹⁶⁹

Sometime later, after Walters was convicted and sentenced to life imprisonment for an unrelated murder, a relative consulted the CCRC on her behalf.¹⁷⁰ The CCRC consulted an experienced psychiatrist who concluded that the defendant had suffered from Battered Woman’s Syndrome as a result of her relationship with Walters.¹⁷¹ On appeal, the defendant claimed that her conviction was unsafe on the basis of this fresh psychological evidence because the evidence supported a defense of duress.¹⁷² The new evidence also allegedly provided a reasonable

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* ¶ 7.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.* ¶ 9.

¹⁶¹ *Id.* ¶ 10.

¹⁶² *Id.*

¹⁶³ *Id.* ¶ 11.

¹⁶⁴ *Id.* ¶ 13.

¹⁶⁵ [2013] EWCA (Crim) 1472.

¹⁶⁶ *Id.* ¶¶ 1-2.

¹⁶⁷ *Id.* ¶¶ 2, 9.

¹⁶⁸ *Id.* ¶¶ 5-6.

¹⁶⁹ *Id.* ¶¶ 6, 8.

¹⁷⁰ *Id.* ¶ 8.

¹⁷¹ *Id.*

¹⁷² *Id.* ¶ 9.

explanation for the failure to present the defense at trial.¹⁷³ The court rejected her claims and did not receive the evidence.¹⁷⁴

ii. Reliability of Witnesses

This category consists of cases in which expert testimony is offered to challenge the reliability of a statement or of testimony by someone other than the expert, e.g., a witness or a defendant who has allegedly confessed.

For example, in *R. v. Evans*,¹⁷⁵ the court accepted fresh evidence that the defendant, who had previously been unable to remember anything about the killing of his wife, remembered post-conviction what had occurred.¹⁷⁶ Significantly, the circumstances as he now was able to remember them would have supported a defense of provocation.¹⁷⁷ The Court of Appeal accepted forensic psychiatric evidence which proved that, after genuine cases of amnesia, there can be accurate and complete recovered memory.¹⁷⁸ However, the court found that the defendant's recovered memory was not genuine in the case at bar.¹⁷⁹ Accordingly, there was no support for a defense of provocation.¹⁸⁰ As to a claim of diminished responsibility, the court rejected the evidence offered by psychiatrists that would have supported a defense of diminished responsibility because that issue had been carefully examined at least twice before and a contrary conclusion was reached.¹⁸¹

A similar result was reached in *Jackson v. R.*¹⁸² There, the defendant recalled post-conviction that he had been the victim of sexual abuse as a student and adduced fresh psychiatric evidence that he had killed the victim – a pedophile – based on Post Traumatic Stress Disorder (PTSD).¹⁸³ The court expressed doubts about the claimed sexual abuse, but accepted that it had occurred for the purposes of the appeal.¹⁸⁴ It also accepted that the psychiatric understanding of PTSD had developed in the twenty years since the conviction and that the defendant may have suffered from PTSD at the time of the killing.¹⁸⁵ However, the court held it was “wholly satisfied that the fresh evidence...provides no reason for doubting the jury's conclusion that his mental responsibility for this killing was not substantially impaired.”¹⁸⁶

Another aspect of forensic psychological evidence that the court has addressed involves the ability of a child victim-witness to recall historical child

¹⁷³ *Id.*

¹⁷⁴ *Id.* ¶ 62.

¹⁷⁵ [2009] EWCA (Crim) 2243.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* ¶ 28.

¹⁷⁸ *Id.* ¶ 57.

¹⁷⁹ *Id.* ¶ 60.

¹⁸⁰ *Id.* ¶ 61.

¹⁸¹ *Id.* ¶¶ 69-71.

¹⁸² [2013] EWCA (Crim) 163.

¹⁸³ *Id.* ¶¶ 10-11.

¹⁸⁴ *Id.* ¶ 13.

¹⁸⁵ *Id.* ¶ 18.

¹⁸⁶ *Id.* ¶ 21.

abuse. In *R. v. JH*¹⁸⁷ the adult complainant alleged that she had been sexually abused by the defendant as a three year old.¹⁸⁸ On appeal, the defense produced expert evidence concerning the unreliability of such an early childhood memory based on the development of the brain and other cognitive science.¹⁸⁹ The prosecution conceded that, while this sort of expert testimony had been available at the time of trial, it certainly was not well known.¹⁹⁰ The court admitted the evidence, rejecting the claim that it usurped the jury's function in determining credibility.¹⁹¹ However, the court did "sound a note of caution," about the kind of expert evidence in the case, stating that "it will only be in the most unusual of circumstances" that such evidence will be admissible and relevant, i.e., "only in those rare cases in which the complainant provides a description of very early events which appears to contain an unrealistic amount of detail."¹⁹²

Also, in *R. v. Friend*,¹⁹³ the court relied on recent developments in the recognition and understanding of Attention Deficit and Hyperactivity Disorder (ADHD) to quash a conviction that was primarily based on the ADHD-afflicted defendant's confession.¹⁹⁴ In *R. v. Pinfold*,¹⁹⁵ the court relied on expert psychiatric evidence to conclude that the main witness against the defendants suffered from a personality disorder that made his testimony unreliable.¹⁹⁶

The court also has received expert psychological evidence on the question of the reliability of a defendant's confession. In several cases, the court has reviewed the evidence of Dr. Gisli Gudjonsson to assist it with this issue.¹⁹⁷ Dr. Gudjonsson developed a scale for measuring the suggestibility of a subject. Dr. Gudjonsson's suggestibility scale is used to determine whether a confession allegedly true and voluntarily given to police was actually a false confession given in submission to police pressure.¹⁹⁸ Dr. Gudjonsson's suggestibility scale indicates how likely a subject may be to give in to pressure to conform or to please or otherwise to submit to authority. Accordingly, Dr. Gudjonsson's testimony is often offered by the defense to show that a confession relied on as proof of guilt is false.¹⁹⁹

¹⁸⁷ [2005] EWCA (Crim) 1828, [2006] 1 Cr. App. R. 10.

¹⁸⁸ *Id.* ¶¶ 7-18.

¹⁸⁹ *Id.* ¶¶ 25-36.

¹⁹⁰ *Id.* ¶ 28.

¹⁹¹ *Id.* ¶ 26.

¹⁹² *Id.* ¶ 47.

¹⁹³ [2004] EWCA (Crim) 2661.

¹⁹⁴ *Id.*

¹⁹⁵ [2003] EWCA (Crim) 3643.

¹⁹⁶ *Id.*

¹⁹⁷ *See, e.g.*, *R. v. Brown*, [2011] EWCA (Crim) 1606; *R. v. Miah & Anor.*, [2011] EWCA (Crim) 945; *R. v. Kenyon*, [2010] EWCA (Crim) 914; *R. v. Mansha*, [2006] EWCA (Crim) 2051; *R. v. Henry*, [2005] EWCA (Crim) 1681; *R. v. Friend*, [2004] EWCA (Crim) 2661; *R. v. Foster*, [2003] EWCA (Crim) 178; *R. v. Fell*, [2001] EWCA (Crim) 696; *R. v. Pendleton*, [2000] EWCA (Crim) 45; *R. v. Friend*, [1997] EWCA (Crim) 816.

¹⁹⁸ *See, e.g.*, *R. v. Antar*, [2004] EWCA (Crim) 2708; *R. v. Steel*, [2003] EWCA (Crim) 1640.

¹⁹⁹ *See cases cited supra* note 197.

D. FINGERPRINT EVIDENCE

The court wrote extensively about the standards for presentation, admission, and sufficiency of fingerprint evidence in *R. v. Smith*.²⁰⁰ In the same case, it also described the historical evolution of current standards for fingerprint identification.²⁰¹

In *Smith*, the defendant was convicted of murdering an elderly neighbor ostensibly for financial gain.²⁰² The neighbor had been brutally murdered in her home.²⁰³ Fingerprints were found at the premises,²⁰⁴ but when the fingerprints were initially examined, the prosecution expert, Gore, determined there was “insufficient detail to be able to make a meaningful comparison.”²⁰⁵ Later, Gore identified these same fingerprints as belonging to the defendant,²⁰⁶ but he had made no notes or any explanation of either of his findings.²⁰⁷ As was required by the standards of the time, he testified to his conclusions at trial with the support of two confirming witnesses.²⁰⁸ A defense expert had been hired to testify at trial, but the defense expert was not called because her training had been in the United States rather than in England, and the court determined she would be too vulnerable.²⁰⁹ Thus, a single confirming defense witness, Bunter, testified that there was insufficient detail for identification.²¹⁰

At trial, and on appeal, the issue was whether the print was clear and detailed enough to identify it as the defendant’s print.²¹¹ The prosecution conceded that the fresh expert defense evidence, which established the prints could not be identified as the defendant’s prints because of insufficient similarities, was admissible on appeal.²¹² Gore met this evidence by claiming, for the first time, that the lack of clarity resulted from a double touch – the defendant had touched the door handle twice.²¹³

The court’s lengthy exegesis on the training of fingerprint experts, the substance of their testimony, and the manner of its presentation is what is most important about the decision because these topics go well beyond the facts of the actual case. First, the court noted with concern the fact that there is no opportunity to become fully qualified as a fingerprint expert in England and Wales except by participation in the police force training.²¹⁴ As a result, there are no

²⁰⁰ [2011] EWCA (Crim) 1296, [2011] 2 Cr. App. R. 16.

²⁰¹ *Id.*

²⁰² [2011] EWCA (Crim) 1296 [¶¶ 1-3], [2011] 2 Cr. App. R. 16 [¶¶ 1-3].

²⁰³ *Id.* ¶ 1.

²⁰⁴ *Id.* ¶ 3.

²⁰⁵ *Id.* ¶ 14.

²⁰⁶ *Id.* ¶ 15.

²⁰⁷ *Id.* ¶ 16.

²⁰⁸ *Id.* ¶ 17.

²⁰⁹ *Id.* ¶¶ 22-24, 29-32, 57-60.

²¹⁰ *Id.* ¶¶ 27, 31.

²¹¹ *Id.* ¶ 9.

²¹² *Id.* ¶¶ 6, 60.

²¹³ *Id.* ¶¶ 35, 47.

²¹⁴ *Id.* ¶ 11(iii).

truly independent experts in fingerprint examination because most experts in fingerprint examination are retired police officers: “The position is in marked contrast to other forensic science disciplines.”²¹⁵ The court’s emphasis on the absence of independent fingerprint examiner experts suggests that this might be a factor the court will consider in future fingerprint evidence cases. Second, the court noted the lack of procedure followed by the fingerprint evidence expert in this case and called for a procedure in conformity with contemporary forensic science. The court noted that “[n]o competent forensic scientist...would conduct an examination without keeping detailed notes of his examination and the reasons for his conclusion. That universal practice of other forensic scientists was not followed by the Nottinghamshire Fingerprint Bureau....The quality of the reports...provided for the trial [do not meet] the vastly improves standards expected in contemporary forensic science.”²¹⁶ The court’s consideration of the technical aspects of fingerprint evidence analysis, such as reporting one’s examinations, suggests that the court is trying to move expert witness testimony into the modern scientific world.

Moreover, the court was critical of the courtroom proceedings as neither the presentation to the jury nor that to the Court of Appeal used “modern methods of presentation.”²¹⁷ Specifically, no digital images were provided.²¹⁸ Noting that “[t]his is one of the very few cases where fingerprint evidence has been challenged at a trial since 1999, and, as far as we are aware, the first since then to come before this court on an appeal where this court has had to hear fresh evidence,”²¹⁹ the court called for action. The forensic science practices in England and Wales lag behind other forensic science areas.²²⁰ Clearly, there is “...a need for the points that have arisen...to be the subject to wider examination.”²²¹

The court held the conviction unsafe.²²² While there was circumstantial evidence pointing to the defendant’s guilt, there were substantial weaknesses in it.²²³ One weakness was that whoever killed the deceased would have been covered in blood and no blood was found at the defendant’s house or his car.²²⁴ Moreover, the timing the prosecution put forward for the defendant to have killed the deceased and cleaned himself up was unrealistically short.²²⁵ In addition, the court recognized that: (1) through no fault of the defendant, his principal fingerprint expert had not been called; (2) that the expert the defendant was able to call was not verified by another examiner; (3) the police report did not properly identify the issues for determination; and (4) the expert evidence was not prepared in a

²¹⁵ *Id.* ¶ 61(iv).

²¹⁶ *Id.* ¶ 61(v), 61(vii).

²¹⁷ *Id.* ¶ 61(iii).

²¹⁸ *Id.* ¶¶ 43, 61(viii).

²¹⁹ *Id.* ¶ 61(viii).

²²⁰ *Id.*

²²¹ *Id.* ¶ 62.

²²² *Id.* ¶ 90.

²²³ *Id.* ¶ 87.

²²⁴ *Id.* ¶ 87(ii).

²²⁵ *Id.* ¶ 87(iii).

way that the jury could have realistically attempted to determine the dispute between the experts.²²⁶

E. DOCUMENT AND COMPUTER ANALYSIS

The question of the admissibility of forensic computer analysis has also arisen in the Court of Appeal. For example, in computer crimes concerning child pornography, examination of computer records has been required to establish whether possession of child pornography was “knowing” and to trace its source. In a more traditional context, expert evidence has been received to show that police records have been falsified.

For example, in *O’Shea v. R.*,²²⁷ the defendant was convicted of incitement to distribute an indecent photograph of a child based on possession of child pornography on his computer. The conviction arose out of Operation Ore, a government operation in which several individuals in the United Kingdom were accused of accessing and downloading child pornography through a United States website called Landslide.²²⁸ When Landslide was shut down, the credit card information of these individuals was found on the Landslide computer.²²⁹ Among other things, the court was asked to receive fresh expert evidence to support the defendant’s claims that the post-trial examination of Landslide’s computer records showed he had been the victim of identity theft, that the computer records were “rife with fraud,” and that the subscriptions said to have been taken out by him were contaminated by fraud.²³⁰ According to the defendant, he had never visited the website, but the webmasters at the site had stolen his credit card details and identity to benefit from bogus credit card payments.²³¹

Interestingly, the evidence that the court received *de bene esse* was not strictly fresh. The expert had been instructed by the defense in 2005, before the trial, and he had been present at the trial.²³² For this reason, the evidence would only be accepted “in the interests of justice.”²³³ That is, the evidence would only be accepted if it truly rendered the conviction unsafe.

Given that heightened standard, the court refused to accept the evidence.²³⁴ In part, it did so based on the personal lack of credibility of the expert, who had been convicted of perjury for misrepresenting his qualifications in another matter and who falsely denied having signed a document until he was shown his signature on the document.²³⁵ More generally, however, the court held the evidence

²²⁶ *Id.* ¶ 89.

²²⁷ [2010] EWCA (Crim) 2879.

²²⁸ *Id.* ¶¶ 4-5.

²²⁹ *Id.*

²³⁰ *Id.* ¶ 6.

²³¹ *Id.* ¶ 30.

²³² *Id.* ¶ 12.

²³³ *Id.* ¶ 9.

²³⁴ *Id.* ¶ 70.

²³⁵ *Id.* ¶ 46.

did not afford any ground for allowing the appeal because the claim that the webmaster had access to appellant's data was not supported by any evidence.²³⁶

The Court of Appeal has received fresh evidence on appeal to establish that police notes have been altered.²³⁷ In most of these cases, police notes were received at trial to show that the defendant had confessed and that the confession had been entirely voluntary.²³⁸ Similarly, the court relied on forensic linguistics evidence to show that the defendant's statements allegedly made as a narrative were in fact the product of police questioning and manipulation and not a simple, voluntary narrative.²³⁹ Because the jury did not have this evidence to impeach the police testimony and because the fresh evidence might have affected the verdict, the court quashed those convictions.²⁴⁰

F. THE OUTLIERS: FACIAL MAPPING, FIBERS, AND VOICE IDENTIFICATION

One thing fiber, facial mapping, and voice identification procedures have in common is that there is no statistical basis for a finding of a match as proof of identity.²⁴¹ Instead, the conclusion of a match is based solely on the experience of the examiner. Thus, the first question for the court in these types of cases is whether such evidence is sufficiently scientific to be admissible. The second question is whether the fresh evidence, if it is received, is sufficiently powerful to render a conviction unsafe. This second question necessarily involves the court in a very detailed analysis of the qualifications of the opposing experts, their credibility, the bases for their conclusions, and any corroboration for those conclusions.

i. Fiber Evidence

The probative value of recovered fibers is a controversial subject. A good example is *Hall v. R.*,²⁴² a murder prosecution. There, the court received fiber analysis evidence.²⁴³ The prosecution presented evidence by an FSS expert that fibers found in the defendant's home and cars matched fibers found on the body and clothing of the deceased.²⁴⁴ According to the expert, the number of fibers found was unprecedented and the chance of finding a number of fibers of a particular color and type at random was extremely small.²⁴⁵ In her opinion there was "extremely strong scientific evidence" of an association between the fibers and

²³⁶ *Id.* ¶¶ 50-51.

²³⁷ *See, e.g., R. v. Bamber*, [2002] EWCA (Crim) 2912.

²³⁸ *See, e.g., R. v. Bentley*, [1998] EWCA (Crim) 2516, [2001] 1 Cr. App. R. 21; *R. v. Blackburn*, [2005] EWCA (Crim) 1349.

²³⁹ *See, e.g., R. v. Bentley*, [1998] EWCA (Crim) 2516, [2001] 1 Cr. App. R. 21.

²⁴⁰ *Id.* ¶ 81.

²⁴¹ *See generally R. v. Atkins & Anor.*, [2009] EWCA (Crim) 1876 [¶¶ 23, 29], [2010] 1 Cr. App. R. 8 [¶¶ 23, 29].

²⁴² [2011] EWCA (Crim) 4.

²⁴³ *Id.* ¶ 54.

²⁴⁴ *Id.* ¶¶ 6-9.

²⁴⁵ *Id.* ¶ 9.

the scene and the fibers found at locations associated with the defendant.²⁴⁶ The defendant did not challenge the expert's conclusions, but sought to demonstrate an innocent, secondary transfer of the fibers to his clothing.²⁴⁷ The jury found him guilty.²⁴⁸

The appellant applied to the CCRC, which contacted a fiber specialist at Contact Traces Limited.²⁴⁹ The fiber specialist reviewed the work done by the FSS expert.²⁵⁰ He concluded that a scientific technique – the production and analysis of a computer algorithm that analyzes the results of microspectrophotometry, i.e., the “first derivative of the spectral data” – should have been used and that application of that technique would have revealed subtle differences in the samples.²⁵¹ That technique was not used by the FSS expert.²⁵² The prosecution conceded that the application of the first derivative was not reasonably available at the time of trial and that the application would have been relevant and admissible at trial. Accordingly, the prosecution-retained two experts to evaluate the defense expert's work.²⁵³ The prosecution experts also conceded that there were variations in the samples, but they concluded that these variations did not make the samples distinguishable.²⁵⁴ In addition, they were of the opinion that the differences had been “exacerbated” by the first derivative.²⁵⁵ A third expert, hired to review the work of both experts, agreed that there were differences, but disagreed that they were “sufficient on their own to exclude an association.”²⁵⁶ The third expert concluded that the scientific evidence “provided ‘moderately strong support’ for [a finding of association].”²⁵⁷ According to the third expert, the different opinions of the two experts were based on the differences in their approaches.²⁵⁸

²⁴⁶ *Id.*

²⁴⁷ *Id.* ¶ 11.

²⁴⁸ *Id.* ¶ 1.

²⁴⁹ *Id.* ¶ 12.

²⁵⁰ *Id.*

²⁵¹ *Id.* “Both in his witness statements and in his evidence Mr Coyle has expressed his opinion based upon the conventional analysis of fibers recovered. In this respect his evidence does not qualify for admission under section 23(2) of the 1968 Act since it was available at the time of trial. It is arguable that it is not now open to the appellant to seek to improve upon the expert evidence available to him at trial simply by relying upon evidence which treads old ground. Mr Mansfield accepts this. Nevertheless, the description by each of the witnesses of his microscopic examination of fibers has been a necessary prelude to the application of the first derivative to the analysis of fibers and we have received that evidence. Furthermore, submits Mr Mansfield, if the fresh evidence does provide a ground of appeal we are entitled to and should have regard to all the circumstances when considering whether the verdict returned was safe. We shall return to this subject later in our judgment.” *Id.* ¶ 14.

²⁵² *Id.* ¶ 12.

²⁵³ *Id.* ¶¶ 13, 21, 26.

²⁵⁴ *Id.* ¶¶ 28, 30.

²⁵⁵ *Id.* ¶ 30.

²⁵⁶ *Id.* ¶ 39.

²⁵⁷ *Id.*

²⁵⁸ *Id.* ¶ 40. Both previous experts, Coyle and Palmer, conducted tests to determine whether the two separate fiber populations – one from Boydlands and one from Snowcroft – had a common

The court found the evidence offered by all of the new experts capable of belief.²⁵⁹ However, based on its own viewing of the raw data and first derivative data, it accepted the third expert's conclusion that the first derivative had exacerbated differences that were not sufficient to distinguish the two samples.²⁶⁰ Nevertheless, it observed that the evidence before the jury had been much stronger than would now be given, and that the FSS expert gave "an incomplete picture of the variety of fibers to be seen in each population."²⁶¹ The court held it was in the interests of justice to receive the fresh evidence even though "the conventional examination of fibers could have been but was not challenged at trial."²⁶² The court concluded that, even though the fiber evidence was incomplete and identification of green polyester fibers was wrong, "the scientific support for the assertion that the appellant was the source of the fibers found at the crime scene [was] compelling"²⁶³ and upheld the conviction as safe.²⁶⁴

ii. Facial Mapping Evidence

Facial mapping is one of those less respected forensic subjects that relies on an expert's experience rather than on statistics. A good example of the problems surrounding such proof is *Atkins & Anor. v. R.*²⁶⁵ There, the court considered the admissibility of a facial mapping expert's opinion that there was a match

source. *Id.* ¶ 20. Each obtained different microscopic results because of their different approaches. *Id.* ¶ 40. Coyle reexamined selected fibers from Mrs. Albert's body and clothing. *Id.* ¶ 21. Based on his visual observations of the fibers, Coyle determined that there were many black flock fibers that differed in thickness and in their levels of delustrant particles. *Id.* Coyle then selected additional fibers for microscopic analysis. *Id.* Coyle made microscopic comparisons of fibers located at Boydlands and Snowcroft under white, blue, and UV light conditions. *Id.* ¶ 23. Under the white light, Coyle saw subtle differences in the fibers morphology. *Id.* Under the blue light, Coyle observed differences in "shading": the Boydlands fibers exhibited a red tint while the Snowcroft fibers exhibited a blue tint. *Id.* In total, Mr. Coyle produced 106 MSP spectra – 78 from Boydlands and 28 from Snowcroft. *Id.* ¶ 24. Ultimately, the MSP and first derivative spectra analysis resulted in subtle differences. *Id.* Accordingly, Coyle concluded that the fibers did not have a common source. *Id.* Palmer, on the other hand, examined not only the range of absorbance values between the fibers, but also the range of variation in absorbance values along the length of each fiber in each population. *Id.* ¶ 27. Palmer tested a total of 60 fibers from Boydlands and 30 from Snowcroft. *Id.* ¶ 27. Palmer viewed each fiber with and without magnification. *Id.* ¶ 28. This examination led Palmer to conclude that, while there was a variation in the color, morphology, and delustrant concentration in each fiber population, "the range and degree of this variation is congruent between each population." *Id.* Additionally, when Palmer examined the fibers through MSP, he found the fibers varied in length. *Id.* ¶ 30. However, Palmer also found that fibers in the Boydlands population fell within the range of intra-fiber variation as those fibers in the Snowcroft population. *Id.* ¶¶ 30-31.

²⁵⁹ *Id.* ¶ 54.

²⁶⁰ *Id.* ¶ 50.

²⁶¹ *Id.* ¶ 53.

²⁶² *Id.* ¶ 54.

²⁶³ *Id.* ¶ 67.

²⁶⁴ *Id.*

²⁶⁵ [2009] EWCA (Crim) 1876, [2010] 1 Cr. App. R. 8.

between a photograph and the defendant's face.²⁶⁶ As with fiber analysis, this forensic method does not rely on a statistical basis for comparison, but is based simply on that expert's experience.²⁶⁷ The court upheld the admissibility of the facial mapping evidence.²⁶⁸ Without receiving such testimony, observed the court, the jury would have no means of evaluating the raw materials presented to it.²⁶⁹ But the court also emphasized that the jury must be told that the opinion is not based on statistics.²⁷⁰

The court reached a different conclusion in *R v. Bacchus*,²⁷¹ although the decision had little to do with the scientific basis for facial mapping comparisons.²⁷² There, the prosecution had attempted to rely at trial on the comparison of CCTV footage of a robbery with CCTV footage of other robberies at which, it was accepted, the defendant had been present.²⁷³ Subsequent to the trial, however, the prosecution concluded that its witness was unreliable and ceased to instruct the witness.²⁷⁴ Accordingly, the prosecution conceded the conviction was no longer safe, and it was quashed.²⁷⁵

iii. Voice Identification Evidence

The court has also addressed the admissibility of voice identification evidence. Again, this evidence is not statistically based, but relies on the experience and expertise of the comparing expert.

In *R. v. O'Doherty*,²⁷⁶ the court set forth the requirements for admissibility of voice identification evidence. In that case, which arose in Northern Ireland, the defendant had been convicted in 1997 of burglary and causing grievous bodily harm with intent, based, in part, on the identification of his voice as the male caller to ambulance control.²⁷⁷ At trial, *inter alia*, an expert testified that it was "highly probable that the applicant was the male caller to ambulance control."²⁷⁸ The expert's conclusion had been based solely on auditory phonetic analysis and did not include a more detailed acoustic analysis of the tapes.²⁷⁹

On appeal, the court accepted fresh evidence from two new experts who used both auditory phonetic analysis and quantitative acoustic analysis of the tapes.²⁸⁰ The trial expert also testified.²⁸¹ The defense expert compared the voices

²⁶⁶ *Id.*

²⁶⁷ *Id.*

²⁶⁸ *Id.* ¶¶ 23, 31.

²⁶⁹ *Id.* ¶ 23.

²⁷⁰ *Id.* ¶¶ 23, 29.

²⁷¹ [2004] EWCA (Crim) 1756.

²⁷² *Id.*

²⁷³ *Id.* ¶ 3.

²⁷⁴ *Id.* ¶ 5.

²⁷⁵ *Id.* ¶ 6.

²⁷⁶ [2002] NICA (Crim) B51; [2002] N.I. 263.

²⁷⁷ *Id.* at 1.

²⁷⁸ *Id.* at 2.

²⁷⁹ *Id.* at 12-13.

²⁸⁰ *Id.* at 3-4, 11.

²⁸¹ *Id.* at 11.

on a 999 tape to the defendant's voice and concluded that the defendant's voice was incompatible with the voice on the tape.²⁸² Fresh evidence from the prosecution's expert concluded that it was "rather more likely than not" (on a scale from 0 to -5 and 0 to +5) but not as high as "probable," that it was the defendant's voice.²⁸³ As the court explained, "the difference between him and [the defense expert] was one of interpretation rather than fact. There were no population statistics against which auditory or acoustic analysis can be tested."²⁸⁴

The court received the fresh evidence and quashed the conviction.²⁸⁵ In doing so, it held that evidence of voice identification, based on the testimony of a phonetician who carried out auditory analysis only, would no longer be admissible.²⁸⁶ The court also held that voice identification would not be admissible absent auditory analysis and quantitative acoustical analysis.²⁸⁷ Both experts acknowledged that the necessity of both tests had become, over time, the majority view among experts.²⁸⁸ According to the court, "Time has moved on."²⁸⁹ The court quashed the conviction because it concluded that, in light of that testimony, it could not conclude that the conviction was safe.

The court did carve out three exceptions to the requirement of both auditory and acoustic analysis: (1) where the issue is which voices of a known group of voices spoke which words; (2) where there are rare characteristics that render a speaker identifiable; or (3) the issue is the accent or dialect of the speaker.²⁹⁰

The court also held that the jury could be allowed to listen to the voice identification tapes in a case in which they heard the defendant testify, but that they should be specifically directed concerning the dangers of relying on their own "untrained ears" and the differences in conditions between the tape they are listening to and the defendant's in-court testimony.²⁹¹

IV. CONCLUSION

The Court of Appeal has grappled extensively with the role of forensic evidence in the criminal process. It has repeatedly, and in great detail, analyzed the reliability of many forms of forensic evidence and the impact of forensic evidence on a criminal jury. At the same time, it has been most willing, at least conditionally, to receive fresh evidence on appeal at least for the purpose of evaluating newly available forensic evidence and accounting for legitimate advances in the sciences. The Court has given substantial guidance to practitioners seeking to admit or contest forensic evidence and has made a real attempt to ensure that forensic evidence that enters the justice system is reliable.

²⁸² *Id.* at 3.

²⁸³ *Id.* at 11.

²⁸⁴ *Id.* at 12.

²⁸⁵ *Id.* at 28.

²⁸⁶ *Id.* at 17.

²⁸⁷ *Id.*

²⁸⁸ *Id.* at 17-18.

²⁸⁹ *Id.* at 17.

²⁹⁰ *Id.* at 18.

²⁹¹ *Id.* at 27.