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Expert Evidence in Criminal Proceedings in England and Wales



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The Law Commission

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EXPERT EVIDENCE IN CRIMINAL PROCEEDINGS IN ENGLAND AND WALES

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THE LAW COMMISSION

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To the Right Honourable Kenneth Clarke QC, MP, Lord Chancellor and Secretary of State for Justice

PART 1
INTRODUCTION

BACKGROUND TO THIS PROJECT

1.1 This report follows the publication of our recent consultation paper, *The Admissibility of Expert Evidence in Criminal Proceedings in England and Wales*[1] and makes recommendations in the light of the comments we received on the provisional proposals made in that paper. We now set out and explain our recommendations for reforming the law relating to expert evidence in criminal proceedings. We also provide a draft Criminal Evidence (Experts) Bill which, if enacted, would give effect to our principal recommendations.

1.2 Our decision to address the law on expert evidence was prompted by a call for reform from the House of Commons' Science and Technology Committee.[2] We shared the Committee's concern that expert opinion evidence was being admitted in criminal proceedings too readily, with insufficient scrutiny.

1.3 In our consultation paper, we provided some examples of wrongful convictions in cases involving unreliable expert opinion evidence adduced by the prosecution. We believe that if the relevant provisions of our draft Bill had been in force at the time of those proceedings, the problems we identified in those cases, which we summarise below, would almost certainly not have occurred. We explain why in Part 8.

1.4 In the case of *Dallagher,*[3] D's conviction for murder was based on unreliable expert opinion evidence relating to the comparison of an ear-print made by D with a latent ear-print found on a window. At D's trial, one of the experts opined that he was "absolutely convinced" that D had left the latent print, and a second prosecution expert was willing to countenance only a "remote possibility" that the latent print had been left by someone else. Notwithstanding the strength of these opinions, DNA evidence taken from the latent print subsequently established that it had not been left by D, demonstrating the unreliable nature of the evidence used to secure his conviction.[4]

[1] Law Commission Consultation Paper No 190 (2009). References in this report to a "consultation paper" are references to this paper.

[2] Consultation Paper No 190, paras 3.15 to 3.17.

[3] [2002] EWCA Crim 1903, [2005] 1 Cr App R 12.

[4] D's conviction was quashed (and a retrial ordered) before the DNA evidence became available; see *The Guardian*, 23 January 2004.

1.5 In *Clark*,[5] an expert paediatrician gave unreliable opinion evidence. This expert, who was not a statistician, had formulated his opinion on the assumption that there were no genetic or environmental factors affecting the likelihood of naturally occurring cot deaths,[6] opining that there was only a one in 73 million chance of two such deaths in the same family. The Court of Appeal took the view that the figure grossly misrepresented the chance of two sudden deaths within a family from unexplained but natural causes, and added that if the issue of the statistical evidence had been fully argued it would probably have provided a distinct basis upon which to allow C's appeal.[7] The court also noted that the way the expert had presented his evidence could have had a major impact on the jury's deliberations.

1.6 In *Cannings,*[8] C's convictions for the murder of her two infant sons had been based on the dogmatic expert view (that is, a view based on a hypothesis which had not been sufficiently scrutinised or supported by empirical research)[9] that the mere fact of two or more unexplained infant deaths in the same family meant that murder had been committed. The Court of Appeal quashed C's convictions. Fresh evidence suggested that multiple cot deaths in the same family could have an underlying genetic cause; and a report relating to the largest follow-up study of cot-death families concluded that "the occurrence of a second unexpected infant death within a family is … usually from natural causes".[10]

1.7 Until the judgment of the Court of Appeal in *Harris and others*,[11] the prosecution had been allowed to rely on a hypothesis that a non-accidental head injury to a young child could confidently be inferred from nothing more than the presence of a particular triad of intra-cranial injuries. The prosecution had in effect been able to rely on nothing more than expert opinion evidence based on the triad to secure convictions for very serious offences against the person, including murder.[12] This was the case even though the diagnosis of a violent assault was predicated on empirical research which has been criticised as comprising only a small, poor-quality database.[13] In other words, the hypothesis underpinning the diagnosis had

5 [2003] EWCA Crim 1020, [2003] 2 FCR 447 (second appeal).

6 Or Sudden Infant Death Syndrome ("SIDS").

7 [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [178] to [180]. The appeal was allowed for unrelated reasons; see *Clark* [2003] EWCA Crim 1020 at [164] and Consultation Paper No 190, para 2.16. It is noteworthy that the report containing the data the expert relied on was accompanied by explanatory text which warned that the data did "not take account of possible familial incidence of factors other than those included".

8 [2004] EWCA Crim 1, [2004] 1 WLR 2607.

9 [2004] EWCA Crim 1, [2004] 1 WLR 2607 at [18] to [20].

10 [2004] EWCA Crim 1, [2004] 1 WLR 2607 at [141].

11 [2005] EWCA Crim 1980, [2006] 1 Cr App R 5.

12 See Editorial, *British Medical Journal* 29 July 2010 (issue 2771): "For 40 years, mainstream medical experts who give evidence in court have largely agreed that shaken baby syndrome can be unambiguously diagnosed by a triad of symptoms at post-mortem … . Murder convictions are often secured on the basis of these alone, even in the absence of other signs of abuse … ."

13 See M Donohoe, "Evidence-based Medicine and Shaken Baby Syndrome" (2003) 24 *American Journal of Forensic Medicine and Pathology* 239, 241. See also D Tuerkheimer, "The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts" (2009) 87 *Washington University Law Review* 1, 12 to 14 and 17 to 18.

been insufficiently scrutinised or supported by empirical research to justify the strong opinion evidence founded on it.

1.8 In our consultation paper we explained that the common law approach to the admissibility of expert opinion evidence is one of *laissez-faire*, with such evidence being admitted without sufficient regard to whether or not it is sufficiently reliable to be considered by a jury. We concluded that this is unsatisfactory and proposed that the common law approach should be replaced by a new admissibility test set out in primary legislation.

1.9 We expressed particular concern about expert opinion evidence which is presented as scientific. We explained that, for evidence of this sort, there is a danger that juries will abdicate their duty to ascertain and weigh the facts and simply accept the experts' own opinion evidence, particularly if the evidence is complex and difficult for a non-specialist to understand and evaluate.[14]

1.10 However, our proposals were not limited to scientific or purportedly scientific evidence. We also addressed other types of expert evidence: non-scientific expert evidence such as the opinion evidence of lip-readers and forensic accountants.

1.11 The provisional conclusion we reached in our consultation paper was that special rules are required for assessing the reliability of expert evidence as a factor bearing on admissibility, and that opinion evidence with insufficient indicia of reliability (that is, pointers to reliability) ought not to be admitted in criminal proceedings.[15] This is still our view.

1.12 We also believe, as we explain in Part 7, that there should be further disclosure obligations in relation to all expert evidence, whether the evidence is relied on by the prosecution or by the defence.

WHY SPECIAL RULES FOR EXPERT EVIDENCE?

1.13 There are several reasons why we believe special rules on admissibility and disclosure are needed for expert evidence in criminal proceedings.

1.14 First of all, expert witnesses are quite different from other witnesses (conventional witnesses of fact). Expert witnesses stand in the very privileged position of being able to provide the jury with *opinion* evidence on matters within their area of expertise and outside most jurors' knowledge and experience.[16]

[14] Concerns regarding the reliability of expert opinion evidence primarily relate to cases tried before a judge and jury in the Crown Court. We should stress at the outset, however, that similar problems may arise in other criminal proceedings, and our use of the term "jury" should be taken to encompass lay magistrates and professional judges who sit as the fact-finding tribunal in magistrates' courts (or in the Crown Court on appeal against a conviction in a magistrates' court).

[15] We say "special rules" because, as a general rule, factors bearing on the reliability of evidence go to weight rather than admissibility.

[16] Experts will occasionally provide evidence of fact, such as how a particular piece of machinery works, but they are usually called to provide an opinion based on their special knowledge and experience. Non-expert witnesses are prohibited from providing opinion evidence save for the concession which permits any witness to present his or her oral evidence of what he or she perceived in a natural way.

Moreover, following the demise of the so-called "ultimate issue rule", expert witnesses can even provide opinion evidence on the disputed issues the jury has been empanelled to resolve.[17]

1.15 A related point, touched on already, is that a jury, comprised as it is of lay persons, may not be properly equipped in terms of education or experience to be able to address the reliability of technical or complex expert opinion evidence, particularly evidence of a scientific nature.[18] This being the case, there is a real danger that juries may simply defer to the opinion of the specialist who has been called to provide expert evidence, or that juries may focus on perceived pointers to reliability (such as the expert's demeanour or professional status).[19]

1.16 As the UK Register of Expert Witnesses accepted in their response to our consultation paper, because expert evidence, or much of it, is heavily based in opinion, special rules are required to ensure that it "is to inform rather than mislead, particularly in criminal trials dominated by expert evidence". Similarly, the General Medical Council said: "it is because juries and other lay tribunals tend to afford a special status to [scientific medical] evidence that a robust assessment of its admissibility prior to trial is critical". The Criminal Bar Association noted in its response to our consultation paper that, "rightly or wrongly, [expert evidence] is often 'trusted' like no other category of evidence".[20]

1.17 Secondly, as explained above, a number of recent criminal cases suggest that expert opinion evidence of doubtful reliability is being proffered for admission, and placed before the jury, too readily. This follows from the current *laissez-faire* approach to admissibility.[21] It has even been suggested that there may be a "culture of acceptance" on the part of some trial judges, particularly in relation to evidence of a scientific nature.[22]

1.18 The Criminal Bar Association, agreeing with the proposals in our consultation paper, commented "that the current treatment of expert evidence in criminal proceedings has contributed to a significant number of miscarriages of justice, risks continuing to do so, and requires urgent reform". And, in line with a point we

[17] The "ultimate issue rule" was the common law rule which prevented experts from giving an opinion on the disputed facts in issue.

[18] In his response to our consultation paper, Lord Justice Aikens noted the increasing technicality of expert evidence, scientific or otherwise, the length of time needed to present it to the jury and the difficulty for the jury in being able to cope with some expert evidence or being able to assess it rationally.

[19] Consultation Paper No 190, paras 2.3 to 2.11 and 2.28.

[20] Similarly, the London Criminal Court Solicitors' Association accepted that expert evidence "has an effect on the fact-finding tribunal … like no other type of evidence"; and the Association of Forensic Science Providers accepted that scientific expert evidence can have a disproportionate effect on juries.

[21] See Consultation Paper No 190, Part 3. See also para 2.16 below.

[22] Andrew Campbell-Tiech QC, told us that, in his experience, "there is a culture of acceptance [of expert medical evidence] that needs to change. We need judges whose approach is one of engaged enquiry". Similarly, the Criminal Cases Review Commission, commenting on the proposals in our consultation paper, opined that judges "need to guard against complacency" and "ensure that they are prepared to question and probe" assertions made by expert witnesses which may sound impressive at face value. The General Medical Council argued that trial judges should have a more proactive role in scrutinising and assessing expert medical evidence.

made in our consultation paper,[23] Associate Professor William O'Brian (University of Warwick) commented that "virtually all of the areas of 'forensic science', with the exception of DNA evidence, have quite dubious scientific pedigrees".[24]

1.19 In a similar vein, Judge Andrew Gilbart QC, the Honorary Recorder of Manchester, told us that he is often struck by "how poor some suggested scientific evidence is in criminal trials", adding that he is also frequently struck by "how ill equipped advocates are to challenge it when they have no experts of their own to advise them".

1.20 Cross-examination, the adduction of contrary expert evidence and judicial guidance at the end of the trial are currently assumed to provide sufficient safeguards in relation to expert evidence, by revealing to the jury factors adversely affecting reliability and weight.[25] However, as we explained in our consultation paper, and repeat below, it is doubtful whether these are valid assumptions.[26] A more credible assumption, at least in relation to complex scientific or technical fields, is that juries will often defer to the expert providing the opinion. If such an expert's opinion evidence is unreliable, the dangers associated with deference are obvious, particularly if the opinion forms a critical link in the prosecution's case.

1.21 Thirdly, even if we are willing to assume that lay triers of fact are sufficiently well-informed to be able to address the reliability of technical or complex expert opinion evidence, there is a basis for believing that, where expert evidence of questionable reliability is admitted, it is not effectively challenged in cross-examination.[27] Confirmation on this point was provided by the UK Register of Expert Witnesses, who told us that there was a sense among the respondents to its own internal consultation that cross-examining advocates tend not to probe, test or challenge the underlying basis of an expert's opinion evidence but instead adopt the simpler approach of trying to undermine the expert's credibility.[28] Of course, an advocate may cross-examine as to credit in this way for sound tactical reasons; but it may be that advocates do not feel confident or equipped to challenge the material underpinning expert opinion evidence. Either way, juries may be provided with insufficient evidence to be able to come to a proper assessment of the reliability of such evidence. To put it another way, while cross-examination can be an effective forensic tool in the right hands for challenging many types of evidence, it would appear to be an insufficient safeguard, at least generally speaking, for expert opinion evidence adduced under a *laissez-faire* approach to admissibility.

[23] Consultation Paper No 190, para 2.26.

[24] In addition, in the specific context of summary proceedings where they act as prosecutors, the RSPCA criticised what they saw as a lax approach to the screening of defence experts, referring to bias, the selective interpretation of scientific evidence and experts acting outside their areas of specialisation.

[25] Consultation Paper No 190, paras 3.12 to 3.14. Mr Justice Treacy, Presiding Judge of the Midland Circuit, agreed with our view that the current practice "tends towards letting the trial process sort the matter out".

[26] Consultation Paper No 190, para 2.9.

[27] Consultation Paper No 190, para 2.9.

[28] The Association of Forensic Science Providers also felt that "cross-examination is not necessarily an effective tool" for challenging scientific expert evidence.

1.22 A fourth reason for special rules for experts and their evidence is that all experts owe an overriding duty to provide the court with impartial evidence within their area of expertise.[29] We acknowledge, of course, that all witnesses are under a duty to provide truthful evidence; but only experts are under an explicit overriding obligation set out in rules of court. Expert witnesses therefore owe a unique, elevated duty to the court, with a concomitant duty to ensure that they do not mislead the court, regardless of the impact this may have on the party for whom they have been called. There is, therefore, a further principled justification for special rules for experts and, in particular, for requiring that all experts, regardless of their client, disclose matters which may have a bearing on the reliability of their evidence.

1.23 In this context it is pertinent to note a comment provided to us by Bruce Houlder QC, Director of Service Prosecutions:

> My own practitioner's experience … is that some charlatans or certainly biased and even incompetent experts still exist in the field of science and also in forensic accountancy. The decisions of the Court of Appeal that have underlined the independent role of the expert, and where their prime duty lies, have not always been heeded, and a "market" still exists for opinions that assist the cause of the paymaster, and insufficiently scrutinise the value of the evidence that points away from the conclusions contended for at trial.[30]

1.24 In short, given the special nature of expert opinion evidence, the likelihood that the current safeguards associated with the trial process are insufficient, and the risk that juries may simply defer to ostensibly reputable experts and accept their opinion evidence at face value, it is difficult to disagree with the view of the Criminal Bar Association that it "must be in the interests of justice to ensure that only expert evidence which has been properly scrutinised and has confirmed validity goes before the jury".

1.25 Lord Justice Leveson made a similar point in a recent speech for the Forensic Science Society and King's College, London:[31]

> It is, in my opinion, perfectly clear that expert evidence of doubtful reliability may be admitted too freely with insufficient explanation of the basis for reaching specific conclusions, be challenged too weakly by the opposing advocate and be accepted too readily by the judge or jury at the end of the trial. In that regard, therefore, the law of England and Wales is not satisfactory and reform is undoubtedly required.

1.26 We also endorse the following comment provided by Lord Justice Aikens in his response to our consultation paper:

[29] Criminal Procedure Rules 2010, r 33.2(1) and (2), following *Harris* [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 at [271] and *Bowman* [2006] EWCA Crim 417, [2006] 2 Cr App R 3 at [176].

[30] See also Consultation Paper No 190, para 1.16 and fn 20.

[31] 16 November 2010, available at www.judiciary.gov.uk/media/speeches/2010/speech-lj-leveson-expert-evidence-16112010 (last visited 3 February 2011).

> There has to be some check to ensure that the "expert evidence" is truly a discipline based on proper principles of research and evaluation, whether the subject is a scientific one, or an area … such as accountancy.

1.27 But a check of this sort can only be part of a broader solution to the problems associated with expert opinion evidence. As we intimated above, there must be greater scrutiny of expert evidence at the admissibility stage more generally, and the parties and judiciary should be provided with the information they need to challenge and assess the trustworthiness of such evidence (and the individuals called to provide it) before it is placed before a jury in a criminal trial. It is for this reason that we recommend in Part 7 a strengthened disclosure regime with respect to expert witnesses and their evidence.

1.28 We should also repeat here the important point we made in our consultation paper that a more enquiring approach to expert evidence in the criminal courts should encourage higher standards amongst expert witnesses and the wider expert communities.[32] This should result in expert evidence of higher quality being tendered for admission in all criminal proceedings and therefore reduce the risk that unreliable evidence will be placed before juries.

1.29 In its response to the provisional proposals in our consultation paper, the Criminal Cases Review Commission agreed that a new statutory test of the type we proposed would bring a number of benefits, two of which were that:

(1) the parties seeking to adduce expert evidence would have the statutory criteria in mind from the outset, encouraging a more considered approach and so bringing a measure of quality control; and

(2) quality control would be encouraged amongst experts themselves as they would need to prepare their opinions in the knowledge that they would be scrutinised with reference to a statutory test.[33]

1.30 What we have said above should not, however, be taken as a suggestion that only poor quality expert evidence is currently being admitted in criminal trials. As Gary Pugh (Director of Forensic Services for the Metropolitan Police) argued in his response to our consultation paper, there will often be organisational structures in place that go some way towards ensuring that reliable expert evidence is tendered for admission. He felt that this ought to be more clearly recognised.[34]

[32] Consultation Paper No 190, paras 6.14 to 6.16.

[33] Some individual consultees (eg Dr Keith JB Rix) also noted that putting experts on notice as to what would be expected of them would result in higher standards.

[34] A similar point was made by some other consultees. For example: Professor Wesley Vernon, a podiatrist with a particular interest in forensic identification, said that the standards and processes of the institution within which the work has been undertaken is an important factor; the UK Accreditation Service suggested that "judges should take account of the increased confidence that can be derived from the fact that an expert works within the context of an accredited organisation, which is regularly assessed by an independent, impartial national accreditation body"; and Skills for Justice argued that that "the ongoing assessment of competence in the workplace of the expert witness" is an important criterion for determining reliability.

OUR PROVISIONAL PROPOSALS

1.31 In our consultation paper we set out a number of proposals for reform along with some questions seeking views on related matters.

1.32 Our central proposal was that there should be a new reliability-based admissibility test for expert opinion evidence which would need to be applied in relation to most expert opinion evidence tendered for admission in criminal proceedings. We proposed that there should be a rule along the following lines:[35]

> (1) The opinion evidence of an expert witness is admissible only if the court is satisfied that it is sufficiently reliable to be admitted.
>
> (2) The opinion evidence of an expert witness is sufficiently reliable to be admitted if:–
>
> > (a) the evidence is predicated on sound principles, techniques and assumptions;[36]
> >
> > (b) those principles, techniques and assumptions have been properly applied to the facts of the case; and
> >
> > (c) the evidence is supported by [that is, logically in keeping with] those principles, techniques and assumptions as applied to the facts of the case.

1.33 In tandem with this new rule, we also proposed that the trial judge should have a number of guidelines to assist him or her in the determination of evidentiary reliability, with one set of guidelines for scientific (or purportedly scientific) evidence,[37] and a separate set of guidelines for experience-based, non-scientific expertise.[38] We explained that the party proffering the expert evidence would bear the onus of demonstrating its reliability.[39] We also suggested, however, that it would be open to the court to take "judicial notice" of some assumptions or well-established theories about which there was no meaningful dispute.[40]

1.34 We also suggested that the new reliability test should be incorporated into a broader test governing the admissibility of expert evidence generally, including the separate common law requirements relating to assistance, expertise and impartiality.[41]

1.35 In addition, we asked our consultees to consider whether the trial judge should, in exceptional cases, have the power to call upon the services of an independent

[35] Consultation Paper No 190, paras 6.10 and 6.78.

[36] That is, principles, techniques and assumptions which are not only well founded, but also appropriate for the type of evidence in question.

[37] Consultation Paper No 190, paras 6.26 and 6.79.

[38] Consultation Paper No 190, paras 6.35 and 6.80.

[39] Consultation Paper No 190, paras 6.57 and 6.81.

[40] The doctrine of judicial notice allows certain facts to be regarded as proved if the facts are so well known or accepted that it would be pointless to adduce evidence to establish them.

[41] Consultation Paper No 190, paras 1.2, 1.3 and 1.8 with para 6.82.

expert to help him or her apply the reliability test to particularly complex evidence.[42]

A SUMMARY OF OUR RECOMMENDATIONS

1.36 We explain later in this report that there was broad consensus amongst our consultees that there should be a special statutory admissibility test for expert opinion evidence along the lines we proposed.

1.37 There was also broad support for our view that the party seeking to rely on the evidence should bear the burden of demonstrating its reliability, even if that party is the accused, and for our view that the reliability test should be incorporated into a broader admissibility test. This broader test would encompass the current common law requirements relating to assistance, expertise and impartiality.

1.38 In this report we therefore take forward our central proposal regarding a new reliability test for expert opinion evidence. We also recommend that this reliability test should be incorporated into a broader test in primary legislation encompassing all aspects of the current common law admissibility test, albeit with some refinements.

1.39 As we explain in Part 3, however, we now believe that it would be better if the courts did not have to rely on the doctrine of judicial notice as the justification for not applying the test (in relation to underlying matters which are not case-specific).[43] It will be seen, therefore, that we recommend a further requirement which would have the effect of ensuring that the reliability test will be applied only if it appears to the court that the evidence might be insufficiently reliable to be admitted.

1.40 We also now believe that it would be better to have a single list of guidelines (or factors) to help trial judges in their application of the new test, rather than the two sets of guidelines we provisionally proposed in the consultation paper.

1.41 In addition, for the principled reasons to which we have already alluded, but also to ensure that our proposed scheme would function effectively in practice, we make recommendations on pre-trial disclosure and court-appointed experts and recommend some amendments to the Criminal Procedure Rules 2010.

1.42 However, in line with what we said in our consultation paper, these recommendations are unlikely to provide a panacea.[44] It is imperative that there be a broader context of change in tandem with the reforms we recommend, with safeguards and appropriate regulatory schemes designed to ensure minimum standards (particularly for forensic scientific evidence) and a more critical approach on the part of some judges to the evidence placed before them.

[42] Consultation Paper No 190, paras 6.67 and 6.83.

[43] See paras 3.65 to 3.78.

[44] Consultation Paper No 190, paras 1.13 to 1.20.

1.43 It is also important that appropriate training on how to determine evidentiary reliability, particularly in relation to evidence of a scientific nature, should be undertaken by all judges and lawyers involved in criminal proceedings.[45]

ACKNOWLEDGEMENTS

1.44 Our consultation paper was published on 7 April 2009 and our consultation period ran until 7 July 2009. We also set up an on-line forum for the duration of our consultation period. We would like to offer our thanks to all the individuals and bodies, listed in Appendix D, who provided comments on our provisional proposals, doubly so for the individuals and bodies who commented on an earlier draft of our report or on certain aspects of our draft Bill. We also wish to express our thanks to the various officials within Government departments who engaged with us during the consultation process and beyond.

1.45 Following the end of our consultation period, and during the formulation of the policy which informs our present recommendations, we sought the views of, and exchanged ideas with, other individuals who are also listed in Appendix D. These individuals were either members of our working party for the project or persons whose practical experience provided us with crucial information on the workability of our proposals. We are extremely grateful to all these individuals, for their time and their invaluable assistance.

THE STRUCTURE OF THIS REPORT

1.46 In Part 2 we summarise the current law on the admissibility of expert evidence in criminal proceedings.

1.47 In Part 3 we explain and analyse our consultees' comments on the central proposal in our consultation paper that there should be a new reliability test for expert opinion evidence in criminal proceedings and on the guidelines we proposed for judges when applying the test. We also explain consultees' views on our suggestion that the current common law admissibility requirements relating to assistance, expertise and impartiality are satisfactory and ought to be codified alongside our proposed reliability test.

1.48 In Part 3 we also introduce our recommendations:

(1) that there should be a new test in primary legislation which would prevent the admission of expert opinion evidence which is not sufficiently reliable to be admitted;

(2) that the legislation should permit the trial judge to presume evidentiary reliability (as a matter bearing on admissibility) if there is no appearance of unreliability;

[45] Training should also be provided to prospective lawyers, newly-qualified lawyers and experienced practitioners. Ideally, law students would in due course receive instruction on scientific methodology and statistics as part of their undergraduate courses, and the CPD requirements for practising solicitors and barristers who undertake work in criminal law would be amended to require attendance at approved lectures covering the same areas (in the context of criminal proceedings). The Criminal Bar Association has told us that relevant training is an area which it could be proactive in addressing and which could perhaps be incorporated into its seminars and lectures.

(3) that the legislation should set out the factors the court should take into consideration when applying the reliability test; and

(4) that the legislation should be a new statutory code for the admissibility of expert evidence in criminal proceedings generally, supplanting the various common law admissibility limbs.

1.49 Appendix A is our draft Criminal Evidence (Experts) Bill which, if taken forward, would become this primary legislation. The admissibility test in our Bill would apply only to those parts of a criminal process in England and Wales to which the strict rules of evidence apply (including criminal trials and "*Newton* hearings").[46] However, because this test, including the new reliability limb, is founded on universal principles, the Government may in due course wish to consider extending its application to hearings involving risk assessments for sentencing, to service courts (for the armed forces) and to other proceedings, particularly family proceedings involving serious allegations and disputed medical evidence.[47]

1.50 In Part 4 we set out and explain the provisions of our draft Bill which, save for some relatively minor refinements, would restate the common law admissibility tests relating to assistance, expertise and impartiality.

1.51 In Part 5 we set out and explain the limb in our new admissibility test for determining whether expert opinion evidence is sufficiently reliable to be admitted and the factors which the judge should take into consideration when addressing this issue. We also set out and explain our recommendations, first, that there should be a power which would permit the trial judge to presume evidentiary reliability in most cases where expert evidence is tendered for admission and, secondly, that the factors relevant to the determination of evidentiary reliability should be set out alongside the admissibility test. We also make reference to the provisions in our draft Bill which, if implemented, would give effect to these recommendations.

1.52 In Part 6 we recommend a new statutory power which, in exceptional circumstances, would allow a trial judge to call upon a further expert witness – one who has been independently screened for expertise and impartiality – to provide the judge with additional expert assistance when applying the reliability test.

1.53 In Part 7 we set out a number of further recommendations, principally relating to pre-trial disclosure and expert reports.

1.54 In Part 8 we examine how our statutory test would work in practice, measured against the cases we described in Part 2 of our consultation paper and in paragraphs 1.4 to 1.7 above. We also consider a hypothetical case involving disputed defence expert evidence.

[46] A *Newton* hearing is a trial to determine the facts if D pleads guilty, where there is a dispute as to the facts relevant to sentencing.

[47] Medical expert evidence is routinely admitted in family cases at the behest of local authorities to prove on the balance of probabilities a non-accidental injury. For a useful guide to issues relating to expert evidence in family proceedings, see Lord Justice Wall, *A Handbook for Expert Witnesses in Children Act Cases* (2nd ed 2007).

1.55 Part 9 provides a summary of our recommendations.

1.56 Appendix A is our draft Criminal Evidence (Experts) Bill and explanatory note.

1.57 Appendix B sets out Part 33 of the Criminal Procedure Rules 2010.

1.58 Appendix C is our impact assessment.

1.59 Appendix D lists the individuals and bodies who responded to our consultation paper, the individuals on our working group for this project and the individuals whom we consulted on specific proposals after the consultation period.

PART 2
THE CURRENT LAW

THE COMMON LAW ADMISSIBILITY TEST

2.1 Four requirements relating to the admissibility of expert evidence in criminal proceedings have developed at common law, principally with reference to expert opinion evidence.

2.2 In this Part we first provide a summary of these requirements ("assistance", "relevant expertise", "impartiality" and "evidentiary reliability") and then set out our view on whether they apply, and whether they should apply, to expert evidence of fact.

Assistance

2.3 According to the leading case of *Turner*,[1] an expert's opinion:

> is admissible to furnish the court with ... information which is likely to be outside the experience and knowledge of a judge or jury. If on the proven facts a judge or jury can form their own conclusions without help, then the opinion of an expert is unnecessary.[2]

2.4 In other words, for expert opinion evidence to be admissible it must be able to provide the court with information which is likely to be outside a judge or jury's knowledge and experience, but it must also be evidence which gives the court the help it needs in forming its conclusions.

2.5 The Court of Appeal's judgment suggests that an expert's evidence is inadmissible if it is "unnecessary". It should be noted, however, that to be admissible an expert's evidence is "necessary" only in the limited sense that it has to provide helpful information which is likely to be outside a judge or jury's knowledge and experience.[3]

Relevant expertise

2.6 The individual claiming expertise must be an expert in the relevant field. This was described in the South Australian case of *Bonython*[4] as a requirement that the individual "has acquired by study or experience sufficient knowledge of the subject to render his [or her] opinion of value",[5] a description which has found favour in England and Wales.[6]

1 [1975] QB 834.

2 [1975] QB 834, 841.

3 See *Mohan* [1994] 2 SCR 9, 10f (Canadian Supreme Court).

4 [1984] 38 SASR 45.

5 [1984] 38 SASR 45, 47.

6 *Stubbs* [2006] EWCA Crim 2312, [2006] All ER (D) 133; *Leo Sawrij v North Cumbria Magistrates' Court* [2009] EWHC 2823 (Admin), [2010] 1 Cr App R 22.

2.7 Generally speaking, it is the expertise itself which determines whether this admissibility requirement is satisfied, not the route by which the expert came to have it.[7] A recent judicial comment suggests, moreover, that the threshold for demonstrating expertise is quite low.[8] Against those points, however, it should be noted: first, that the threshold cannot (we suggest) be any lower than a requirement of proof on the balance of probabilities; secondly, that amateurs are not qualified to give some types of expert evidence;[9] and, thirdly, that explicit guidelines for determining expertise are now being formulated for certain scientific fields.[10]

Impartiality

2.8 The expert must be able to provide impartial, objective evidence on the matters within his or her field of expertise. In the civil case of *Field v Leeds City Council*,[11] Lord Woolf, the Master of the Rolls, said that for an expert to be "qualified to give evidence as an expert" he or she must be able to provide an objective, unbiased opinion on the matters to which his or her evidence relates.[12] More recently, in the case of *Toth v Jarman*,[13] the Court of Appeal (Civil Division) recognised that an expert witness "should provide independent assistance to the court by way of objective unbiased opinion"[14] and that where an expert witness "has a material or significant conflict of interest, the court is likely to decline to act on his [or her] evidence, or indeed to give permission for his [or her] evidence to be adduced".[15]

2.9 This common law admissibility requirement has been reinforced for criminal proceedings by an explicit provision in secondary legislation. Rule 33.2 of the Criminal Procedure Rules 2010 provides that an expert has an overriding duty to give opinion evidence which is objective and unbiased.

2.10 It has been held in civil proceedings that an expert's evidence is inadmissible if it might appear to a reasonable person that the expert could be biased in favour of the party who has called him or her to testify,[16] although this was thought to be the wrong test in *R (Factortame Ltd) v Secretary of State for Transport, Local*

7 See, eg, *Silverlock* [1894] 2 QB 766.

8 See *R (Doughty) v Ely Magistrates' Court* [2008] EWHC 522 (Admin) at [24]: "Whether the claimant is a good expert or not is neither here nor there. The quality of his report is neither here nor there. … These matters are not a sufficient basis for having ruled the claimant to be simply not competent to give expert evidence at all."

9 See *Robb* (1991) 93 Cr App R 161, 164, where Bingham LJ said that the opinion evidence of an amateur psychologist would be inadmissible.

10 See *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [207] and [208] (medical experts) and *Weller* [2010] EWCA Crim 1085 at [49] (experts on DNA).

11 [2000] 1 EGLR 54.

12 Above, at [15] and [16]. Waller LJ simply referred to the need to demonstrate that the expert is aware of what his Lordship called the expert's "primary duty to the court".

13 [2006] EWCA Civ 1028, [2006] 4 All ER 1276.

14 [2006] EWCA Civ 1028, [2006] 4 All ER 1276 at [100], citing *Polivitte Ltd v Commercial Union Assurance Co Plc* (1987) 1 Lloyd's Rep 379, 386.

15 [2006] EWCA Civ 1028, [2006] 4 All ER 1276 at [102].

16 *Liverpool Roman Catholic Archdiocesan Trustees Inc v Goldberg (No 3)* [2001] 1 WLR 2337.

Government and the Regions (No 8)[17] and in *Morgan v Hinton Organics (Wessex) Ltd*.[18]

2.11 Whatever the position in civil proceedings, it is now clear that apparent bias does not render an expert's evidence inadmissible in criminal proceedings.[19]

Evidentiary reliability

2.12 The expert's opinion evidence must in other respects satisfy a threshold of acceptable reliability.[20] The existence of a further common law admissibility requirement of some sort can be discerned from the cases where the Court of Appeal (Criminal Division) has:

(1) held that the field of expertise must at least be "sufficiently well-established to pass the ordinary tests of relevance and reliability;"[21]

(2) cited the admissibility test for expert opinion evidence in *Bonython*[22] which has a reliability component, albeit one which has never been properly analysed in England and Wales;[23] and

(3) suggested a particular type of reliability test.[24]

2.13 In *Bonython*[29] this admissibility requirement was described as being "whether the subject matter of the [expert's] 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".[30] In our consultation paper we took the view that, if this aspect of the *Bonython* test is part of the law of England and

17 [2002] EWCA Civ 932, [2003] QB 381 at [70].

18 [2009] EWCA Civ 107 at [67] and [68].

19 *Stubbs* [2006] EWCA Crim 2312, [2006] All ER (D) 133; *Leo Sawrij v North Cumbria Magistrates' Court* [2009] EWHC 2823 (Admin), [2010] 1 Cr App R 22.

20 See Consultation Paper No 190, para 3.1.

21 *Dallagher* [2002] EWCA Crim 1903, [2003] 1 Cr App R 12 at [29]; *Luttrell* [2004] EWCA Crim 1344, [2004] 2 Cr App R 31 at [37]; see also *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [111] and *Broughton* [2010] EWCA Crim 549 at [32].

22 [1984] 38 SASR 45.

23 The reliability limb of the *Bonython* test is set out in para 2.13 below. In his recent speech for the Forensic Science Society and King's College, London (16 November 2010), Lord Justice Leveson suggested that this limb could not yet be said to represent the current state of the law in England and Wales. It should be noted, however, that in *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [111] the Court of Appeal indicated that it is part of the law; and in *Broughton* [2010] EWCA Crim 549 at [32] the Court of Appeal expressly stated that it is part of the law which a criminal court "must consider".

24 *Gilfoyle (No 2)* [2001] 2 Cr App R 5 at [25].

29 [1984] 38 SASR 45.

30 [1984] 38 SASR 45, 47.

Wales, the question is whether the body of knowledge or experience is accepted as reliable by the courts rather than by a relevant community of experts.

2.14 Following the publication of our consultation paper, the existence of a common law reliability test was confirmed by the Court of Appeal in *Reed*,[31] at least for "expert evidence of a scientific nature"; but it is to be noted that the court did not demur from the established position that there is no enhanced reliability test for such evidence.[32]

2.15 The existence of a common law reliability test for evidence of a scientific nature was also recently recognised in *Weller*,[33] where the Court of Appeal referred to the trial judge's function "in determining whether there is a sufficiently reliable scientific basis for [scientific] expert evidence to be given".[34]

2.16 In our consultation paper[35] we took the view that this reliability requirement in the common law admissibility test was insufficiently robust, reflecting a generally *laissez-faire* approach to the admissibility of expert evidence in England and Wales.[36] As mentioned above, the Court of Appeal has held that this requirement is satisfied if the field of expertise is "sufficiently well-established to pass the ordinary tests of relevance and reliability".[37]

The relationship between the four admissibility tests

2.17 The first limb of the common law admissibility test ("the *Turner* test") ensures that expert evidence is admitted only when it has sufficient probative value, in the sense that the evidence is likely to help the court resolve a disputed issue. The purpose of the other limbs is to ensure that such expert evidence is admitted in criminal proceedings only when it satisfies a minimum threshold of general reliability, what might be called "reliability in the round".

[31] [2009] EWCA Crim 2698, [2010] 1 Cr App R 23.

[32] The Court of Appeal held at [111] that while "expert evidence of a scientific nature is not admissible where the scientific basis on which it is advanced is insufficiently reliable for it to be put before the jury" there is "no enhanced test of admissibility for such evidence". The court did not explain how the trial judge is to determine whether the scientific basis of an expert's evidence is or is not sufficiently reliable to be admissible, save for mentioning the "enhanced test for admissibility used in the United States as set out in the decision of the US Supreme Court in *Daubert v Merrell Dow Pharmaceuticals* 509 US 579". See also *Broughton* [2010] EWCA Crim 549 at [32].

[33] [2010] EWCA Crim 1085.

[34] [2010] EWCA Crim 1085 at [48]. See also *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [206] where the court noted that *Reed* "is concerned with DNA evidence but the observations of the court in relation to the admissibility of expert evidence apply with equal force to cases concerning baby shaking". The same point was made in *T* [2010] EWCA Crim 2439 at [70]: "the principles for the admissibility of expert evidence were summarised recently in *Reed & Reed* at paragraphs 111 to 112: the court will consider whether there is a sufficiently reliable scientific basis for the evidence to be admitted … ."

[35] Consultation Paper No 190, para 3.14.

[36] For recent confirmation, see *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [206]: "We shall say no more about admissibility since the unsatisfactory state of the law has been the subject of the Law Commission Consultation Paper No 190 … and is likely to lead to changes in the current approach of *laissez-faire* … ."

[37] Paragraph 2.12(1).

2.18 The fourth limb (evidentiary reliability) was the principal issue in our consultation paper and, equally, it is the principal issue in this report. It is concerned with the reliability of opinion evidence provided by an impartial, properly-qualified expert. It is therefore the reliability requirement which addresses, or at least ought to address, matters underpinning the expert's opinion, such as the soundness of his or her field of expertise and methodology and the validity of any assumptions relied on. Where we refer in this report to the common law reliability test, or to a new reliability test to replace it, we are referring to this specific aspect of "reliability in the round".

OPINION EVIDENCE AND EVIDENCE OF FACT

2.19 The case law on expert evidence focuses almost exclusively on expert opinion evidence, the reason being that expert witnesses are usually called to provide such evidence.[38] It is important to understand, however, that expert witnesses may be called to give expert evidence of fact. For example, an expert may be called to give an explanation of how an unusual piece of machinery operates, or evidence of a reading provided by an instrument or a symptom which was observed when a patient was examined.

2.20 If such factual evidence is proffered for admission, logic demands that the first three limbs of the common law test be applied in the same way that these limbs apply to expert opinion evidence. The witness giving expert evidence of fact should be able to do so only if the court is likely to need such assistance, the witness is an expert in the relevant field and the witness will provide impartial, objective evidence (that is, a sufficiently complete account as opposed to a partial picture distorted by bias).

2.21 So, although there is authority – the case of *Meads*[39] – to suggest that expert evidence of fact is not covered by the common law rules summarised above, we prefer the view in *Phipson on Evidence*[40] that it would have been preferable to treat the evidence in that case "as expert evidence [governed by the common law test], where the level of expertise required was of a very low order".[41]

2.22 It will be seen, therefore, that our recommendation in Part 4 that the first three limbs of the common law test should be codified does not distinguish between expert evidence of fact and expert evidence of opinion.

2.23 We appreciate, however, that it would be very difficult to see how the fourth limb of the common law admissibility test, or any new test for determining evidentiary reliability, could be meaningfully applied to expert evidence of fact. Accordingly, it will be seen in Part 3 that our proposed statutory alternative to the fourth common law requirement would apply only to expert opinion evidence.

[38] See para 1.16 above.

[39] [1996] *Criminal Law Review* 519 (a case involving a reconstruction).

[40] (17th ed 2010) para 33-19.

[41] We note that in *Meads* [1996] *Criminal Law Review* 519 no authority was cited beyond a comment that the South Australian case of *Bonython* [1984] 38 SASR 45 refers solely to expert opinion evidence.

PART 3
CONSULTATION

INTRODUCTION

3.1 In this Part we summarise the responses we received from our consultees on:

(1) the principal proposal in our consultation paper that there should be a new reliability test in primary legislation for expert opinion evidence;

(2) the proposal in our consultation paper that the burden of demonstrating reliability should be borne by the party seeking to adduce the evidence; and

(3) the suggestion we made in our consultation paper that this legislation should also codify the other limbs of the common law admissibility test for expert evidence.

3.2 In the light of our consultees' comments, we then introduce our recommendations for these issues, which we explain more fully in Part 4 and Part 5.

EVIDENTIARY RELIABILITY

Our provisional proposal

3.3 The view we expressed in our consultation paper was that the courts have adopted a policy of *laissez-faire* to the admissibility of expert opinion evidence in criminal proceedings. So, although there is at present a rudimentary common law reliability test for such evidence, its practical effect is largely illusory.[1] Moreover, trial judges have been given little assistance on how to assess reliability in practice.

3.4 Criminal courts in England and Wales therefore only rarely rule expert opinion evidence inadmissible on the ground of evidentiary unreliability.[2] The courts tend to allow expert evidence to be admitted on the assumption that its reliability will be effectively challenged during the trial by cross-examination or by the adduction of contrary expert evidence by another party, or both. However, as we stated in our consultation paper,[3] and explained again in Part 1 of this report, cross-examination would seem to be an insufficient safeguard against unreliability for expert opinion evidence adduced under a *laissez-faire* approach to admissibility.

3.5 The central proposal in our consultation paper, therefore, was that there should be a new, more stringent reliability test for expert opinion evidence in criminal

[1] For the common law position, see paras 2.12 to 2.16 above.

[2] That is to say, the courts freely admit expert opinion evidence if the other limbs of the common law admissibility test described in Part 2 are satisfied.

[3] Consultation Paper No 190, paras 2.8 to 2.28.

proceedings.[4] This new test would replace the fourth limb of the common law admissibility test we described in Part 2.[5]

3.6 We proposed that there should be a new admissibility requirement along the following lines:[6]

(1) The opinion evidence of an expert witness is admissible only if the court is satisfied that it is sufficiently reliable to be admitted.

(2) The opinion evidence of an expert witness is sufficiently reliable to be admitted if:–

(a) the evidence is predicated on sound principles, techniques and assumptions;[7]

(b) those principles, techniques and assumptions have been properly applied to the facts of the case; and

(c) the evidence is supported by [that is, logically in keeping with] those principles, techniques and assumptions as applied to the facts of the case.

3.7 Limb (a) of this test would require the courts to assess the soundness of the principles and methodology underpinning the expert witnesses' opinion evidence. If sound, limb (b) would require the judge to consider whether the general conclusions drawn from the methodology had been properly applied to the facts of the case by the expert.[8]

3.8 Limb (c) would require the judge to focus specifically on the expert witness's reasoning, to ensure that the expert's final conclusions (including the strength of any opinion he or she might wish to give) were logically in keeping with the proper application of the general conclusions drawn from the underlying methodology to the facts of the case.[9]

3.9 We also proposed that this admissibility test should provide, in line with the general position for the admission of evidence in criminal proceedings, and

[4] We took the view that it would be possible to take "judicial notice" of the reliability of some aspects of scientific expert evidence, a point on which a number of our consultees agreed. We accept, however, that because there may be two or more views on many aspects of scientific understanding, particularly for novel or nascent fields, it will often be difficult to use the doctrine in the context of scientific opinion evidence. On this point generally, see: C Onstott, "Judicial Notice and the Law's 'Scientific' Search for Truth" (2007) 40 *Akron Law Review* 465.

[5] Paragraphs 2.12 to 2.16 above.

[6] Consultation Paper No 190, paras 6.10 and 6.78.

[7] That is, principles, techniques and assumptions which are not only well founded, but also appropriate for the type of evidence in question.

[8] Consultation Paper No 190, paras 6.38 to 6.40.

[9] Consultation Paper No 190, paras 6.41 to 6.43. For a recent example of this point being addressed at common law, see *Weller* [2010] EWCA Crim 1085 (consideration of the underlying science relating to the transfer of DNA and the question whether the expert called by the prosecution should have been permitted to provide an evaluative opinion on the likely provenance of DNA found on the accused's fingernails).

indeed civil proceedings, that the party tendering the opinion evidence for admission should bear the onus of demonstrating to the court that it is sufficiently reliable to be admitted.[10]

3.10 In tandem with our central proposal that there should be a new statutory requirement of evidentiary reliability, we also proposed that the trial judge should have a number of guidelines to help him or her determine whether or not the test was satisfied, with one set of guidelines for scientific (or purportedly scientific) evidence,[11] and another set of guidelines for experience-based, non-scientific expertise.[12] We suggested that guidelines of this sort could be incorporated into legislation.

3.11 There was very broad (but not universal) support for a new reliability test for expert opinion evidence along the lines proposed in our consultation paper, as we explain in the following paragraphs.

Comments on our provisional proposal

3.12 We received considerable support for our proposed reliability test from individuals and bodies with a particular interest in the workings of the criminal justice system. Nevertheless, some of this support was couched with reservations regarding the possibility of increased complexity, costs and delays; and some of our consultees suggested slight revisions to our proposal.

3.13 Conversely, some of our consultees suggested that the case for reform was more compelling than we had made out in our consultation paper, or that more radical reform was needed than the measures we had proposed.[13] An alternative approach has also recently been suggested in an academic legal journal.[14]

[10] We did not propose any particular standard of proof because the question would not be whether a particular past or present fact is established, but whether there are sufficient indicia of reliability to justify the admission of the evidence. See Consultation Paper No 190, paras 6.57 to 6.61.

[11] Consultation Paper No 190, paras 6.26 and 6.79.

[12] Consultation Paper No 190, paras 6.35 and 6.80.

[13] One suggestion was that there should be specially trained judges sitting without a jury for trials involving complex expert evidence. A similar proposal was suggested by the Science and Technology Committee of the House of Commons in *Forensic Science on Trial – Report of the House of Commons Science and Technology Committee* (2004-05) HC 96-I. The then Government's response to that proposal was that the Criminal Justice Bill (2002–2003) originally included provision for the prosecution to apply, on the grounds of length or complexity, for a trial on indictment to take place without a jury, but it was amended by Parliament to apply only to fraud cases. The Government added that it had "no plans to seek to extend the ambit of this provision" (*Forensic Science on Trial: Government Response to the Committee's Seventh Report of Session 2004-05* (2005-06) HC 427, p 16).

[14] J Hartshorne and J Miola, "Expert evidence: difficulties and solutions in prosecutions for infant harm" (2010) 30 *Legal Studies* 279, 293 to 294, suggesting that there should be a panel of three Lord Justices of Appeal who would screen "new theories and techniques" for reliability before they could be relied on in a criminal trial. Leaving aside the problematic question of costs and delays, we have difficulty with this proposal because, first, it is predicated on the assumption that an underlying hypothesis or technique can always be divorced from the expert opinion evidence founded on it and, secondly, it does not protect against the fact that unreliable expert opinion evidence may be founded on a hypothesis or technique which is not "new" (see Consultation Paper No 190, paras 2.26 and 4.35).

3.14 Amongst the various bodies expressing their support for our central proposal were: the Rose Committee of the Senior Judiciary, the Council of HM Circuit Judges,[15] the Bar Law Reform Committee, the Criminal Bar Association, the Law Society, the Crown Prosecution Service, the Justices' Clerks' Society and the Criminal Cases Review Commission.

3.15 In their written response, the Better Trials Unit of (what was then) the Office of Criminal Justice Reform said they were broadly supportive of our proposal, save that they were concerned about the possibility of disruptions to the trial process and additional costs. In a similar vein, the judges of the Central Criminal Court (whom we met) and the Rose Committee of the Senior Judiciary (who provided a written response) emphasised the importance of flexibility so that the reliability test would not have to be applied unnecessarily. The RSPCA made a similar point.[16]

3.16 We also received positive responses from the General Medical Council, the British Medical Association, the Police Superintendents' Association, the Legal Services Commission, the Association of Forensic Science Providers, Forensic Access Ltd, the Forensic Institute, the Expert Witness Institute, the Forensic Science Society, the Society of Expert Witnesses, the Academy of Experts,[17] the Royal Statistical Society, the UK Register of Expert Witnesses, the Royal College of Psychiatrists,[18] the Royal College of Paediatrics and Child Health, the UK Forensic Speech Science Community and the British Association for Shooting and Conservation.

3.17 Individual consultees who expressed their support for our proposal included: members of the judiciary (Lord Justice Aikens,[19] Mr Justice Treacy,[20] Judge Andrew Gilbart QC[21]); senior practitioners (Bruce Houlder QC,[22] Andrew Campbell-Tiech QC), the Forensic Science Regulator,[23] various scientists and a number of academic lawyers (albeit some expressing reservations regarding detail).[24]

[15] Albeit preferring the test to be in procedural rules.

[16] By contrast, some of our academic consultees counselled against giving the judiciary a discretion or power to disapply the test; see para 3.70 below.

[17] Albeit with some reservations.

[18] Support "in principle".

[19] His support was qualified, however, with a suggestion that we should propose something more radical.

[20] Presiding Judge of the Midland Circuit.

[21] The Hon Recorder of Manchester.

[22] Director of Service Prosecutions.

[23] The Forensic Science Regulator did, however, stress the need for precedents to ensure that the same questions would not be addressed again and again in subsequent trials.

[24] For example: Professor Paul Roberts (University of Nottingham) argued in favour of simplicity and felt that the reliability test should apply to evidence of fact as well as to opinion evidence; and Professor Pierre Margot (University of Lausanne) emphasised the need for the forensic scientists who interpret evidence to be present at the place where the evidence is found, to direct the investigations and have a full appreciation of the relevant context.

3.18 There were, however, some organisations and individuals who provided only lukewarm or equivocal support for our proposal or who opposed any such reform measure.

3.19 The UK Accreditation Service supported our proposal, but felt that trial judges should also take into account the "increased confidence that can be derived from the fact that an expert works within the context of an accredited organisation". The same point was made by Gary Pugh (Director of Forensic Services at the Metropolitan Police) who felt that the focus should be on the importance of "organisational structures" when assessing whether or not expert opinion evidence was reliable. In a similar vein, LGC Forensics agreed that the reliability of expert evidence should be properly tested before it reached court, but were not convinced that our proposal offered the most efficient or cost-effective way of addressing the problem. They suggested that there should be a greater appreciation of "current and developing arrangements for validating and accrediting forensic science and scientists, and particularly the work of the Forensic [Science] Regulator". And although the Centre for Criminal and Civil Evidence and Procedure (at Northumbria University) accepted that there was a "clear need" for a reliability test of the sort we proposed, they suggested in conclusion that a more cost-effective approach to the problems associated with expert evidence would be to insist on better training and greater accreditation.

3.20 Practical objections were raised by the Forensic Science Service. The FSS did not support our proposal because of the possibility of repeated challenges against evidence and, in their view, the difficulty of providing the judiciary "with sufficient scientific knowledge" for judges to be able properly to assess the reliability of forensic scientific evidence.[25] Similarly, the British Psychological Society, while accepting the value of our proposals in principle, doubted whether it would be practicable for judges to acquire sufficient knowledge to make informed rulings on the reliability of expert opinion evidence.[26] The Academy of Experts argued that, instead of creating new legislation, the existing common law admissibility rules should be more effectively enforced.

3.21 Adam Wilson (Sheffield Hallam University) told us that we had provided insufficient evidence of the workability of our proposals.[27] We should therefore pause here to explain: first, that we devote much of Part 5, and all of Part 8, to a discussion of the practical application of our recommendations; and, secondly, that following an internal consultation on our provisional proposals by the UK Register of Expert Witnesses, their respondents' view was that the scheme we proposed would work.

3.22 Finally, the Medical Defence Union accepted the need for high-quality expert evidence, but argued that there were no "hard data" to justify the reforms we

[25] They also felt that we had paid insufficient regard to the "Forensic Science Regulator's standards and validation framework in providing assurance that processes and techniques are fit for purpose".

[26] On the question whether judges should be able to call upon further expert assistance when assessing evidentiary reliability, see Part 6.

[27] He instead proposed that there should be a "working party, with cross-discipline membership" which could analyse forensic scientific disciplines to determine both admissibility and codes of practice.

proposed; and Dr Déirdre Dwyer (Oxford University) felt that there should be no special admissibility rules for expert evidence over and above the rules for evidence generally.[28]

3.23 Nevertheless, notwithstanding the arguments raised against what we said in our consultation paper, which we have summarised above, it is fair to say that our central proposal received broad support from our consultees including, significantly, the bodies listed in paragraphs 3.14 to 3.16 above. Some consultees said that our decision to get to grips with this area of the law was "most welcome,"[29] "particularly valuable"[30] and "long overdue".[31]

3.24 Lord Justice Aikens expressed the view that "the way expert evidence is dealt with in jury trials is one of the system's weaker links"; the Criminal Bar Association opined that the "current treatment of expert evidence in criminal proceedings has contributed to a significant number of miscarriages of justice, risks continuing to do so, and requires urgent reform"; and the Bar Law Reform Committee felt that the common law approach to expert evidence was "deeply unsatisfactory".

3.25 The General Medical Council felt that "together with statutory guidelines, the [proposed] test would tighten the criteria for and clarify the powers of the court, thereby reducing the risk of unreliable evidence being placed before a jury". Mr Justice Treacy opined, in line with comments we made in our consultation paper,[32] that our proposed test would "introduce a welcome additional spur to the judiciary, practitioners and experts in their scrutiny of expert evidence".

3.26 Importantly, several of the consultees who opposed our proposed reform measure nevertheless accepted that it was right in principle. Their opposition was based on perceived practical difficulties.

3.27 There were very few comments or questions on the specific limbs of our proposed reliability test (paragraph 3.6(2) above). One consultee asked whether limb (a) would compel the judge to choose between competing views. On this point the answer is that it would not. In particular, expert opinion evidence based on a reliable foundation of sound scientific methodology would not be rendered inadmissible just because the relevant data could equally be explained by a plausible alternative hypothesis.

3.28 If two plausible hypotheses are properly applied to the facts of the case, and each expert witness's opinion is logically in keeping with his or her preferred hypothesis as applied to the facts, it would be permissible for these experts to give their alternative opinions. The determination of the accused's guilt or innocence would depend on all the admissible evidence and on the burden and standard of proof for criminal proceedings: the prosecution must prove the accused's guilt beyond any reasonable doubt.

[28] We do not agree with Dr Dwyer's objection, for the reasons given in Part 1.

[29] Andrew Campbell-Tiech QC.

[30] The Criminal Cases Review Commission.

[31] The Bar Law Reform Committee.

[32] Consultation Paper No 190, paras 6.12 to 6.16.

3.29 Nevertheless, the fact that there are plausible alternative hypotheses would limit the nature of any opinion evidence given for the prosecution. Most obviously, assuming the case to be one where an opinion of the following sort might be properly advanced, a prosecution expert witness relying on one of two alternative hypotheses would not be able to opine that a particular item of evidence of itself provides certain proof of an aspect of the prosecution case. If the same item of evidence could be explained in a way which is consistent with the accused's innocence by the application of the alternative (defence) hypothesis, such a strong opinion would be inadmissible.

3.30 We considered limb (c) to be an important aspect of our proposed test even though it would encroach on matters which have traditionally been left to the jury. Our view was – and remains – that a particular expert opinion (including the strength of that opinion) should be considered by the jury in criminal proceedings only if it is sufficiently reliable to be placed before a jury, bearing in mind that the safeguards provided by the trial process may be insufficient for such evidence.[33] Furthermore, the parties and their experts would have this limb at the forefront of their minds when preparing for the trial. They would expect to have to justify their opinion evidence and would therefore ensure that the opinion evidence they proffer for admission is likely to stand up to judicial scrutiny.

3.31 One of our academic consultees[34] suggested, rightly in our view, that limb (b) would need to be broadened to accommodate what North American commentators usually call "social framework evidence" but is perhaps best described as "background expert evidence". Expert opinion evidence is occasionally given in criminal proceedings on background matters.[35] We accept that any new admissibility test would need to be broad enough to encompass such evidence insofar as it is otherwise admissible.

3.32 The feedback our consultees provided on the provisional reliability test described in our consultation paper may be summarised as follows:

(1) we received considerable support for the test from individual consultees and the principal bodies concerned with criminal justice in England and Wales;

(2) our consultees generally felt that a statutory test of the sort we proposed would encourage a more considered approach to expert evidence and so bring a measure of quality control to criminal proceedings (although, understandably, concerns were also raised about possible cost and time implications);

[33] See paras 1.20 and 1.21 above.

[34] Professor Mike Redmayne (London School of Economics), the author of *Expert Evidence and Criminal Justice* (2001).

[35] See, for example, *S(VJ)* [2006] EWCA Crim 2389. In that case an expert on autism was permitted to give evidence that a person of the complainant's age, with the complainant's autistic condition, would find it difficult to create and maintain a false allegation.

(3) despite the broad support for our proposed test, a number of consultees wondered whether our proposed approach would have excluded the unreliable expert opinion evidence we referred to in our consultation paper;[36] and some consultees were understandably concerned about the possibility of an investigation being conducted whenever expert opinion evidence is proffered for admission;[37]

(4) some bodies connected with forensic science favoured a more 'grass roots' approach, with better quality control in forensic laboratories (rather than new admissibility rules in the criminal courts).

3.33 On the last point, this was the approach recommended by the United States National Research Council of the National Academies in their 2009 report, *Strengthening Forensic Science in the United States: A Path Forward*. The fundamental difference between the position in the USA and that in England and Wales, however, is that rule 702 of the US Federal Rules of Evidence already sets out a reliability test for expert evidence. Indeed we drew on rule 702 when formulating the equivalent test we proposed in our consultation paper.

3.34 Our view is that there should be a new admissibility test for expert opinion evidence alongside better quality control in forensic scientific laboratories. We would encourage and endorse all reasonable measures designed to enhance the reliability of expert opinion evidence in criminal proceedings; and we believe that a new statutory admissibility test with an explicit reliability limb would act as a further incentive to expert communities. Expert opinion evidence would then be properly assessed for reliability at an early stage in the proceedings and be tendered for admission only when it is likely to withstand judicial scrutiny.

Our recommendation on the reliability test

3.35 Given the broadly positive responses to what we said in our consultation paper, particularly the support provided by the bodies listed in paragraphs 3.14 to 3.16 above, we believe that our provisional proposal should be taken forward into legislation, albeit with some refinements.

3.36 **We therefore recommend that there should be a statutory admissibility test which would provide that an expert's opinion evidence is admissible in criminal proceedings only if it is sufficiently reliable to be admitted.[38]**

3.37 In line with our provisional proposal, we focus exclusively on expert *opinion* evidence for this test. We have adopted this approach for three reasons:

(1) if the expert evidence would ordinarily be classified as "factual" (for example, an explanation of how an unfamiliar piece of machinery operates) it is unlikely there will be any issue as to evidentiary reliability;

[36] Consultation Paper No 190, paras 2.14 to 2.24. We endeavour to address this question in Part 8.

[37] Some consultees did not support our proposal for this reason.

[38] That is, sufficiently reliable to be taken into consideration by the fact-finding tribunal.

(2) there is unlikely to be any dispute as to whether expert evidence is evidence of fact or evidence of opinion in the sort of case where the reliability of an expert's evidence is being challenged;[39] and

(3) it is far easier to formulate a generally-applicable reliability test and complementary guidelines if we limit the application of the test to opinion evidence.

3.38 However, on the basis that there may be borderline areas, where an expert purports to be presenting evidence of unfamiliar fact but the evidence ought properly to be regarded as opinion evidence, and the reliability of that evidence is being challenged, we believe it would be prudent to include a provision requiring that the evidence be treated as opinion evidence if there is any doubt on the matter.[40]

3.39 **We therefore recommend a rule which would provide, for the reliability test, that if there is any doubt on the matter expert evidence presented as evidence of fact should be treated as expert opinion evidence.**

Guidance for the judiciary

3.40 In our consultation paper we provisionally proposed that, in addition to a new statutory test for determining the reliability, and therefore the admissibility, of expert opinion evidence in criminal proceedings, there should be guidelines to help trial judges apply the test in practice.[41] We proposed that there should be two sets of guidelines, one set for expert evidence of a scientific nature – that is, scientific or purportedly scientific evidence – and a separate set for experience-based expert evidence.

3.41 Our first set of guidelines listed the indicia of reliability traditionally associated with sound scientific methodology, that is, the type of methodology demonstrating the classic hallmarks of valid science, including properly conducted experiments and observations, the revision of hypotheses in the light of new data, publication and peer-review.[42] We proposed that our second set of guidelines should be used for other types of expert opinion evidence: the non-scientific, experience-based evidence for which there were likely to be fewer objective indicia of reliability.[43] We added, however, that for the areas of professional but non-scientific expertise, where there are well-accepted practices and methodologies (for example, the field of accountancy) the court would be able to admit the

[39] The very fact that experts disagree would of course suggest that the evidence should be treated as opinion evidence.

[40] Dr Glyn Walters (a retired consultant chemical pathologist) told us that "conjecture is an important feature of diagnostic medicine … but all too often pathologists present what are speculative ideas as though they are established fact". Possible fact / opinion borderline areas mentioned by consultees are blood groupings (Bar Law Reform Committee) and lie-detector evidence (Professor Paul Roberts).

[41] Consultation Paper No 190, paras 6.21 to 6.37.

[42] Consultation Paper No 190, para 6.26.

[43] Consultation Paper No 190, para 6.35.

evidence if the expert had followed accepted practices and provided a sufficient explanation of what he or she had done.[44]

3.42 The guidelines we published in our consultation paper also included factors unrelated to methodology which might nevertheless have a bearing on the reliability of the expert's opinion evidence in the round, that is, factors relating to the credibility of the witness as a provider of expert opinion evidence.[45] The two sets of guidelines we proposed shared a number of features in common.

3.43 There was very broad support for guidelines of the sort we proposed – in tandem with appropriate training[46] – to help the judiciary apply our proposed reliability test.

3.44 However, although some consultees expressly favoured separate guidelines for scientific and non-scientific expert evidence, and many did not criticise this aspect of our proposals, a significant number of consultees either queried or opposed our dichotomy. The opposition to separate guidelines was largely based on the need to avoid what was thought to be unnecessary complexity and the desirability of reducing the potential for arguments in court.

3.45 Some consultees envisaged disputes about the nature of some expert opinion evidence on the ground that there is no clear line separating scientific and non-scientific evidence. One consultee, Mr Justice Treacy, told us that he could foresee our guidelines "leading to argument as to which category some witnesses fall into"; Professor Paul Roberts (University of Nottingham) opined that the distinction we had drawn between scientific and experience-based evidence was the sort of taxonomic issue the courts should avoid; and Associate Professor Andrew Roberts (University of Warwick) suggested that:

> definitional problems that are likely to beset attempts to categorise expert evidence could be avoided by providing a consolidated list of criteria and leaving trial judges to apply those that are relevant to evaluation of the evidence in the case.[47]

3.46 A number of consultees made the important point that forensic scientific evidence – the types of scientific evidence proffered for admission in criminal trials – usually involves a scientific underpinning *and* an experience-based interpretive

[44] Consultation Paper No 190, para 6.37. The Rose Committee of the Senior Judiciary endorsed this comment.

[45] The guidelines therefore included factors relevant to impartiality and expertise.

[46] We emphasised the importance of proper training for lawyers and the judiciary; see Consultation Paper No 190, paras 1.15(3) and 6.72 to 6.74.

[47] A Roberts, "Rejecting general acceptance, confounding the gate-keeper: the Law Commission and expert evidence" [2009] *Criminal Law Review* 551, 561.

element.[48] The UK Forensic Speech Science Community provided a useful explanation of this overlap from their perspective. They said the following:

> We consider there to be a continuum between experience-based evidence and narrowly scientific evidence. … For example, in our own field certain methods for analysing speech samples derive from the physics of sound and are clearly very much at the narrowly scientific end of the continuum. However, the conclusion one arrives at does not arise algorithmically or automatically from applying these methods. Rather, it relies on experience and bringing to bear knowledge of the likely effects of factors such as the speaking situation … , the range of variation encountered in a particular dialect, the speaking style used, the state of the speaker and the recording characteristics (eg direct conversation or telephone).
>
> In view of this, it must be recognised that evidence arising from the analysis of speech samples will, inevitably, involve both narrow scientific and experience-based elements. [Similarly], a forensic pathologist in carrying out an autopsy will draw on scientific principles and tests derived from such fields as histology, physiology and biochemistry in attempting to determine cause of death. But ultimately the outcome of the autopsy will involve interpretation of the results of these specific tests, and this judgment will be crucially dependent on the experience of the pathologist.

3.47 A similar point was made by several other consultees in relation to disciplines such as fingerprint and ear-print analysis.[49] It is difficult to disagree with these objections to our original dichotomy.[50]

3.48 Bearing in mind the generally positive support for our proposal that there should be guidelines to assist the judiciary, and given the well-founded criticisms of our original dichotomy, we now believe that the evidentiary reliability limb of our new admissibility test should be read with supplementary guidelines or factors, in line with our original proposal, but that there should be just one set of generic factors.

3.49 The trial judge would select from these factors as appropriate, depending on the type of expert opinion evidence being proffered for admission. We therefore

[48] According to Professor Paul Roberts, forensic sciences are "typically disciplinary hybrids applied to practical problem-solving" bearing the hallmarks or classical sciences but also incorporating other matters. For a recent example, relating to evidence of fibre analysis, see *Hall* [2011] EWCA Crim 4 at [48]: "the judgement whether two or more textile fibres of similar dimensions and similarly dyed are distinguishable is, first and foremost, a matter for the experienced and expert examiner. There is no measurement which, by itself, is capable of making that judgement."

[49] For example, the UK Register of Expert Witnesses, the Bar Law Reform Committee, the Forensic Science Service and the Forensic Institute.

[50] Interestingly, however, the UK Register of Expert Witnesses told us, following their internal consultation on our proposals, that our two sets of guidelines had drawn broad support and that the division we had proposed as between scientific and non-scientific evidence would not give rise to problems in practice.

endorse a point made (tacitly) by Andrew Roberts[51] that if we are to expect trained judges to be able to apply our reliability test to the wide range of disciplines and fields on which expert evidence may be given, we should also trust the judges to be able to select for themselves, from a single body of factors, what is relevant to this exercise.

3.50 This approach also brings with it the advantage of enhanced flexibility. A recurring theme in the responses we received, particularly from the judiciary, was that any guidelines we recommend should not be too prescriptive. The Rose Committee of the Senior Judiciary pointed out that "in certain circumstances, some of the identified factors may not be applicable and flexibility may be required". Similarly, Lord Justice Aikens commented that the trial judge's "flexibility to deal with unexpected areas and situations must be preserved".

3.51 To be fair, the guidelines we proposed in our consultation paper contained a great deal of flexibility: they permitted the trial judge to take into account other factors not specifically listed;[52] and the guidelines for experience-based evidence directed that the judge should not take into consideration any inapplicable factors.[53] Nevertheless we agree with the comments set out in the preceding paragraph.

3.52 If we are to have a single set of generic factors, it follows that some of them may not be relevant in a particular case. Accordingly, the judge should be directed to take into account only what is relevant; and, equally, in line with the position we proposed in our consultation paper, the judge should be able to take into account relevant matters which are not expressly set out.[54] This approach accords with the position for other aspects of the law of criminal evidence.[55] It also reflects the view of Mr Justice Treacy, who suggested that there should be a single body of guidelines from which the judge would select relevant factors but which would also permit the judge to consider other relevant factors.

3.53 Before leaving this area we also need to address one further suggestion made by some of our consultees, no doubt prompted by what we said in paragraph 6.74 of our consultation paper.[56] Their suggestion was that there should be an authoritative compendium of different guidelines for the various scientific disciplines and that these should be published in a format which could be easily updated.

[51] A Roberts, "Rejecting general acceptance, confounding the gate-keeper: the Law Commission and expert evidence" [2009] *Criminal Law Review* 551, 561.

[52] Consultation Paper No 190, paras 6.26(1) and 6.35(1).

[53] Consultation Paper No 190, para 6.35(1).

[54] For example, accreditation or organisational structures, if such factors are considered to be relevant to the evidentiary reliability of the expert's opinion evidence in the particular case.

[55] It is not uncommon for the judge to be directed by primary legislation to take into account what he or she considers to be relevant in the factual context of the case; see, for example, s 30(3)(d) of the Criminal Justice Act 1988 and ss 100(3), 114(2) and 116(4)(d) of the Criminal Justice Act 2003.

[56] We opined that the Judicial Studies Board might wish to work with relevant professional bodies with a view to producing for Crown Court judges a practical guide for assessing expert evidence in criminal proceedings, perhaps using parts of the US Federal Judicial Center's *Reference Manual on Scientific Evidence* as a framework.

3.54 The most enthusiastic proponent of this idea was Professor Paul Roberts, who felt that a better way of reforming the law on expert evidence would be to have:

> generic criteria of validity specified in primary legislation, reinforced by detailed, non-statutory guidance in judicial bench books … and associated training programmes, which can easily be modified in the light of experience and updated to keep pace with ongoing scientific and technical innovations.[57]

3.55 Similarly, the British Psychological Society told us that they favoured specific guidelines for psychologists who give expert opinion evidence. They explained that if psychologists give evidence about a particular individual, they have to exercise their clinical skill, first, in the choice of which technique should be used to assess a particular factor and, secondly, in the interpretation of the results. The Society stressed that "any clinical opinion should not simply be supported by the literature, but also be based upon current practice and knowledge" which means taking into consideration the "choices and interpretations which would reasonably be made by the majority of experts working in the speciality at that moment in time". They also suggested that if a psychologist is called to provide more general background information on a topic, the choice of technique or approach and the interpretation of results may be the major issues at stake, rather than the basic soundness of the experimental design.[58]

3.56 We accept that there is a sound argument for providing trial judges with detailed, up-to-date information and guidance on the various types of complex expert evidence, particularly scientific evidence, which may be proffered for admission in criminal proceedings. It would clearly make sense if the judiciary had access to the specific matters which have a bearing on the evidentiary reliability of expert opinions derived from fields such as psychology, psychiatry and statistics (to take some obvious examples). Nevertheless, this must remain a long-term goal; and in any event a bench book of the type suggested by Professor Roberts would provide only a partial replacement for a list of generic factors. We say this for two reasons.

3.57 First, we have discussed the matter with the Judicial Studies Board (JSB) – the independent body responsible for training the judiciary and for publishing the Crown Court Bench Book[59] – and have been told by their Director of Studies[60] that they are unlikely in the near future to have the resources to be able to liaise

[57] Dr Keith JB Rix (a consultant forensic psychiatrist) and Adam Wilson also offered proposals along these lines. Mr Wilson proposed that there should be a "working party, with cross-discipline membership" which could analyse forensic scientific disciplines to determine both admissibility and codes of good practice; and he expressed the hope "that, if the Commission's proposals are implemented, recourse is not simply made to these guidelines but, rather, specialist bodies continue to review forensic testimony and propose improvements and good practice".

[58] The Society therefore suggested that psychology might be an area where a court-appointed expert would be able to provide the trial judge with useful assistance in determining reliability, on the ground that "unaided, judges may be hard pressed to make informed decisions on such matters". We set out our recommendations for court-appointed experts in Part 6.

[59] *Directing the Jury* (March 2010).

[60] Judge John Phillips.

with relevant professional bodies to produce a compendium of specific non-statutory guidelines. It is true that the JSB have recently been consulted in relation to a project which will provide judges and practitioners with information on the field of statistics, but this has been funded by a specific grant and we are told that separate funding for other fields of expertise is extremely unlikely to be forthcoming.[61]

3.58 Secondly, even if an authoritative compendium of different guidelines could eventually be formulated by the JSB or another body in association with the various professional bodies, it is highly unlikely that judges would ever have the benefit of specific guidelines for all the various types of expertise which come before them.

3.59 We therefore believe that a list of generic factors offers the only practicable advance in the short to medium term, and possibly the only advance in the long term for some fields of expertise. However, on the basis that specific factors may eventually be produced and approved for various fields of expertise, we have included a provision in our draft Bill directing the trial judge to consider such factors if they have been published for the type of evidence in question.[62]

3.60 The only remaining issue addressed by some of our consultees was whether the guidelines we originally proposed should be set out in legislation or in a code of practice. There were mixed views on this. The Rose Committee of the Senior Judiciary said: "Yes. Guidelines contained in statute would be helpful as long as they remain guidelines rather than a mandatory scheme"; the Bar Law Reform Committee could "see great benefit in a catalogue of guidelines being set down in statute"; and the Better Trials Unit of (what was then) the Office of Criminal Justice Reform expressed the view that generic guidelines could be set out in primary legislation and that it would be unusual to set out such matters in secondary legislation. However, some consultees, including judges, suggested that the guidelines should be included in secondary legislation or in a code of practice to ensure flexibility and rapid revision where necessary.[63]

3.61 On this point we have come to the firm conclusion the generic factors should be set out in the primary legislation which contains the new admissibility test, so we have included them in a Schedule to our draft Bill. The factors are generic, and so would need to be amended only very rarely, if ever; the list is relatively short; by including them in the Bill they can be read alongside the reliability test; and we believe they deserve to be set out in the Bill.

[61] The project is being run by the Royal Statistical Society's Working Group on Statistics and Law, chaired by Professor Colin Aitken, with the support of the Nuffield Foundation. The Working Group has recently published its Practitioner Guide No 1: *Fundamentals of Probability and Statistical Evidence in Criminal Proceedings*.

[62] Clause 4(3)(b).

[63] These consultees included Bruce Houlder QC (Director of Service Prosecutions) and HM Council of Circuit Judges. One consultee, Dr Cedric Gilson (University of Westminster), suggested that the guidelines should simply be provided in the form of training.

3.62 **We therefore recommend that trial judges[64] should be provided with a single list of generic factors to help them apply the reliability test and that these factors should be set out in the primary legislation containing the test.**

3.63 **We recommend that the trial judge should be directed to take into consideration the factors which are relevant to the expert opinion evidence under consideration and any other factors he or she considers to be relevant.**

3.64 We set out and explain the generic factors we recommend in Part 5.

A limited power to disapply the reliability test

3.65 In our consultation paper we suggested that it would not be necessary to question assumptions or well-established theories about which there was no meaningful dispute. Our view was that the trial judge would be able to take judicial notice of such matters (for example, the validity of the scientific knowledge underpinning expert opinion evidence on DNA and the extreme unlikelihood that two persons will ever have the same fingerprints).[65] A further limitation was provided by our decision to restrict our proposed test to expert opinion evidence, so it would not need to be applied in relation to expert evidence of fact.

3.66 Nevertheless, the senior judiciary (and some other consultees) suggested that there would need to be a further restriction, that is, a degree of flexibility which would allow the judge to disapply the test in cases where it was potentially applicable, judicial notice could not be taken and it would be counter-productive to apply the test.

3.67 The Council of HM Circuit Judges agreed with the concept of a new reliability test, and believed our proposed test to be sound, but they felt that it should be refined so as not to require the issue to be addressed in every case where expert opinion evidence is tendered. This need for flexibility was particularly emphasised by the judges of the Central Criminal Court.

[64] We explain in Part 5 that, if evidentiary reliability has to be investigated in a magistrates' court, the matter should ordinarily be addressed by a District Judge (Magistrates' Courts).

[65] Even identical twins have different fingerprints. It therefore seems that fingerprints are generated by a combination of genetic and environmental factors in the womb, meaning that it is extremely unlikely that two individuals will share a complete fingerprint. However, this does not mean that an individual will always be correctly identified from a crime-scene print, given the greater possibility that two individuals will share part of a print and, more importantly, the difficulty of discerning whether or not a partial or smudged crime-scene print matches a print taken from the accused in controlled circumstances. Judicial notice has been taken of the uniqueness and permanence of fingerprints in the United States of America (see, for example, *USA v Plaza* (7 January 2002) Cr No. 98-362-10 and *USA v Plaza (No 2)* (13 March 2002) Cr No. 98-362-10 (USDC, ED Pa)). In *United States* v *Mitchell* (2004) 365 F3d 215, however, the United States Court of Appeals (Third Circuit) took the view that it is not possible to take judicial notice of such facts under the Federal Rules of Evidence because, for the purposes of the test in the Rules, it could not be said that they were "not subject to reasonable dispute" (as the defence had challenged the assumptions). Nevertheless, the court also recognised that the prosecution had presented overwhelming evidence that fingerprints *are* unique and permanent, so the point is perhaps of academic interest only.

3.68 Likewise, the Rose Committee of the Senior Judiciary agreed with our proposals and endorsed them save that they felt there should be a statutory power for the court, of its own motion, or following a successful application by one of the parties, to require the party proffering the evidence to demonstrate that the test was satisfied, so that in other situations it would not be necessary to apply the test. This would be a desirable restriction, the judges said, because "it would be burdensome and unnecessary to require the parties to show that an admissibility threshold has been met in … every case".

3.69 A number of other consultees expressed similar concerns about the delay and complexity our proposed test might bring if it had to be applied routinely. The Better Trials Unit of (what was then) the Office of Criminal Justice Reform said that while they were "broadly supportive" of our proposal, they were concerned about the possibility of delays and disruptions to the trial process and unsure whether the application of the doctrine of judicial notice would be sufficient safeguard against routine challenges.[66] The Bar Law Reform Committee feared that, notwithstanding our assurances to the contrary, the language of our test suggested an admissibility investigation in every case, which they felt would be undesirable. The Forensic Science Regulator expressed concern that the criminal justice system might "be flooded with applications to exclude evidence and may be disadvantaged". Similarly, the RSPCA felt that there should be mechanisms to prevent meritless challenges.

3.70 However, some of our academic consultees with a particular interest in expert evidence expressed concern that the judiciary might even be able to rely on the doctrine of judicial notice in relation to fields of forensic science. Dr Tony Ward (University of Hull) felt that reliance on judicial notice would raise "the danger that some forms of forensic expertise will continue to be relied upon because they have always been relied upon". He said, in relation to forensic scientific evidence: "Insisting that all fields of expertise must establish their validity would provide [experts with] a salutary incentive to ensure that their scientific houses were in order." Similarly, Associate Professor William O'Brian (University of Warwick) suggested, first, that we "should be robust in drafting [our Bill] to prevent … evasion by [the] courts" and, secondly, that we should "disavow [our] suggestion that the courts should take judicial notice of the validity of some techniques".[67]

3.71 The comments in the previous paragraph are not without merit. We certainly agree that an important policy objective underpinning the statutory measures we recommend must be the encouragement of better practices, with standards being raised and expert opinion evidence being tendered for admission only when it is likely to withstand judicial scrutiny.

3.72 However, we also believe that if we are to recommend a legislative solution to the problems associated with expert opinion evidence in criminal proceedings it must be a proportionate response. In other words, we agree with the judiciary and other consultees that the trial judge should not have to investigate the reliability of the evidentiary foundation of an expert's opinion evidence unless it is appropriate

[66] The Better Trial Unit's response was qualified with the caveat that it may not represent the ultimate view of the Government.

[67] In addition, Professor Mike Redmayne (London School of Economics) suggested that judges should be required to apply our proposed reliability test seriously.

to do so. We also accept that the doctrine of judicial notice may be an insufficient basis for disapplying our proposed test. Much reliable expert opinion evidence is tendered for admission in the criminal courts every day, and it would clearly not serve the interests of justice to have evidence about which there are no concerns routinely assessed against our reliability test with the consequence that criminal trials generally become longer and more costly.

3.73 In short, we believe that a balance needs to be struck as between what may be desirable in principle and what is in fact practicable and cost-effective.

3.74 In this context it is worth reflecting on what the Court of Appeal said in *Jisl*:[68]

> The funding for courts and judges, for prosecuting and the vast majority of defence lawyers is dependent on public money, for which there are many competing demands. Time itself is a resource. Every day unnecessarily used, while the trial meanders sluggishly to its eventual conclusion, represents another day's stressful waiting for the remaining witnesses and the jurors in that particular trial, and no less important, continuing and increasing tension and worry for another defendant or defendants, some of whom are remanded in custody, and the witnesses in trials which are waiting their turn to be listed.

3.75 It follows that there is unlikely to be any appetite for a new reliability test, whether in the Government, in Parliament or amongst the judiciary, if it is thought that substantial costs and unwarranted delays would be generated as a result.

3.76 A proportionate legislative response cannot, however, mean recommending a scheme which would provide only an ostensible barrier to the admission of unreliable expert opinion evidence in criminal proceedings.

3.77 **We therefore make the following recommendation:**

(1) criminal courts should have a limited power to disapply the reliability test so that it does not have to be applied routinely and unnecessarily;

(2) but, equally, the power to disapply must not be such that the reliability test becomes only a nominal barrier to the adduction of unreliable expert opinion evidence.

3.78 We explain this recommendation more fully in Part 5.

The onus of persuasion

3.79 In our consultation paper we did not propose any standard of proof for the issue of evidentiary reliability, but we did propose that the party wishing to adduce the evidence should have to show that it is sufficiently reliable to be admitted. We took the view that the reliability of much expert opinion evidence may not be capable of being proved in the way that it is possible to prove a past fact or that an event occurred.[69] We therefore suggested that the general question should be

[68] [2004] EWCA Crim 696 at [114].

[69] A point with which the Council of HM Circuit Judges agreed.

whether there are sufficient indicia of reliability to justify the admission of the expert opinion evidence before a jury.[70]

3.80 There was very broad consensus amongst our consultees, often very firmly expressed, that the burden of establishing reliability should lie with the party tendering the evidence.

3.81 However, some consultees expressed concern about the possibility of the burden shifting to the accused to prove his or her innocence in a case dominated by disputed medical evidence, or the difficulty the defence would face in having to demonstrate reliability given its limited resources. The judges of the Central Criminal Court felt that there might need to be some flexibility for trial judges when considering the admissibility of defence evidence.

3.82 Professor Paul Roberts queried whether it was right as a matter of principle to expect the accused to establish the reliability of his or her expert opinion evidence in the way we suggested. He said that

> it should not be assumed, without argument, that the appropriate validity threshold for accepting prosecution evidence … will necessarily be the same threshold test of validity that should be applied to potentially exculpatory evidence tendered by the defence

3.83 Professor Roberts added that it

> might be possible to construct a principled argument, rooted in the presumption of innocence, for affording the methodological credentials of expert evidence tendered by the accused a somewhat more generous benefit of the doubt.

3.84 Indeed, Professor Roberts went so far as to suggest that defence expert evidence with "validity … demonstrated to a 0.49 level of probability"[71] should nevertheless be admissible as it could prevent the prosecution from proving its case beyond reasonable doubt.

3.85 It is of course quite right that the prosecution must prove the accused's guilt beyond reasonable doubt, and the admissibility of expert opinion evidence must always be viewed against this fundamental requirement. Other important contextual points are that, as a general rule, the accused is entitled to adduce any admissible evidence which might place in the jury's collective mind a reasonable doubt as to his or her guilt, and that the prosecution must establish a "prima facie case" before the accused has to present any evidence in support of his or her defence.[72]

[70] Consultation Paper No 190, paras 6.53 to 6.63.

[71] That is, evidence which is probably invalid, assuming of course that it would ever be possible to assess validity in this precise way.

[72] That is to say, by the close of the prosecution case there must be sufficient evidence of D's guilt for a reasonable jury, properly directed, to be able to conclude beyond reasonable doubt that D is guilty.

3.86 However, we believe that the presumption of innocence, crucially important though it is, does not give the accused the right to adduce unreliable expert evidence in order to mislead the jury or distract the jury from reliable evidence which points to his or her guilt. A number of cases suggest that unreliable defence evidence having little probative value and (amongst other things) the potential to cloud the issues and mislead the jury can be excluded at common law on the ground that it is "irrelevant" and therefore inadmissible.[73] In a similar vein, Parliament has in recent years enacted legislation to prevent the accused from being able to put logically relevant but misleading or distracting evidence before the jury.[74] And Crown Court trial judges are now beginning to provide juries with directions designed to counterbalance defence suggestions which are unsupported by empirical research and therefore unreliable and potentially misleading.[75]

3.87 We explained in Part 1 why expert opinion evidence is a special type of evidence which deserves special treatment, and our reasons apply equally to defence evidence. In particular, expert opinion evidence of a scientific nature, whether tendered for admission by the prosecution or the defence, should always be founded on the principles of good science. The Court of Appeal recently acknowledged as much in *Reed*,[76] following the publication of our consultation paper, where it held that "expert evidence of a scientific nature is not admissible where the scientific basis on which it is advanced is insufficiently reliable for it to be put before the jury".[77]

3.88 **We therefore recommend for our proposed reliability test that, where the test is applied, the party wishing to adduce the expert opinion evidence should bear the burden of demonstrating that it is sufficiently reliable to be admitted.**

3.89 The party wishing to adduce the expert opinion evidence would therefore need to provide the necessary evidence and arguments to support a submission that the opinion evidence the expert wishes to give is sufficiently reliable to be taken into consideration by a jury.

[73] Consultation Paper No 190, Appendix A.

[74] See, for example: s 100 of the Criminal Justice Act 2003 (limits on the admissibility of the extraneous misconduct of prosecution and defence witnesses other than the accused); s 126 of the Criminal Justice Act 2003 (a discretion to exclude admissible hearsay tendered by the defence or the prosecution); and s 41 of the Youth Justice and Criminal Evidence Act 1999 (limits on the admissibility of the extraneous sexual behaviour of complainants in sexual offence cases).

[75] See *MM* [2007] EWCA Crim 1558, [2007] All ER (D) 196 (Jun) and *D(JA)* [2008] EWCA Crim 2557, [2009] *Criminal Law Review* 591 (directions on possible reasons why sexual offence complainants do not immediately complain about the alleged assaults, to counterbalance the defence suggestion that a delayed complaint is evidence of a false allegation). See also the recent observations in *Miller* [2010] EWCA Crim 1578, [2010] All ER (D) 170 (Jul) and the guidance provided in Chapter 17 of the Judicial Studies Board's Crown Court Bench Book, *Directing the Jury* (March 2010).

[76] [2009] EWCA Crim 2698, [2010] 1 Cr App R 23.

[77] [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [111]. However, in line with the traditional *laissez-faire* approach to admissibility which has developed at common law, the court added that there is "no enhanced test of admissibility" for evidence of a scientific nature.

3.90 We are confident that the application of this recommendation to defence expert opinion evidence would not place the accused in the position of having to prove his or her innocence.

3.91 It is for the prosecution to prove the accused's guilt beyond reasonable doubt on the basis of the admissible evidence presented in the trial. Save for the exceptional situation where the accused has to prove a specific defence, the accused bears nothing more than a tactical burden to place in the jury's collective mind a reasonable doubt as to his or her guilt. Under our recommendations, it would be for the prosecution to demonstrate the reliability of its expert opinion evidence (when required to do so) because such evidence would be supporting an affirmative proposition relating to the accused's guilt.

3.92 To take an example drawn from *Harris and others*,[78] if the basis of the prosecution case is that D murdered his or her child on account of the presence of certain intra-cranial injuries, it would be for the experts called by the prosecution to demonstrate that their opinion evidence, including the strength of their conclusions, is fully justified. They would have to establish the soundness of their hypothesis that such injuries demonstrate a non-accidental injury (as opposed to an accidental or congenital cause) to the extent necessitated by the strength of their opinions. If the prosecution has no other evidence of D's guilt, save for what the prosecution experts regard as D's implausible exculpatory explanation, the prosecution's experts would need to show that their hypothesis has been established through empirical research to the extent necessary to justify their opinion that they are sure that the child's death resulted from a non-accidental injury.[79] Moreover, the jury would need to be sure – satisfied beyond reasonable doubt – that the prosecution experts' opinion in this respect is correct.

3.93 However, if a defence expert has simply been called to draw attention to possible problems with the prosecution expert witness's methodology, data, inferences, assumptions, reasoning and so on, and if the defence expert is not putting forward an alternative proposition (other than the claim that the prosecution expert is wrong), so he or she is not relying on any hypothesis or empirical research (and so forth) of his or her own, then the reliability test would be inapplicable to that expert's evidence. The defence will always be able to call impartial expert witnesses to reveal flaws in the methodology and reasoning of prosecution expert evidence.

3.94 An analogy can be drawn with the type of case where the defence advocate, acting on the guidance of an expert or undisclosed expert report, probes the

[78] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5, para 1.7 above.

[79] There would need to be properly conducted research to establish a sound correlation between the intra-cranial injuries and a non-accidental cause (from independent evidence) and the absence of such injuries where there have been accidents or congenital conditions. The stronger the expert's opinion, the greater would need to be the data consistent with it.

evidence of a prosecution expert witness during cross-examination.[80] The defence advocate may not be positing any suggestion of his or her own, but will be seeking to challenge and undermine the opinion evidence of the prosecution expert by revealing flaws in reasoning, research methods or the inferences drawn from data.[81]

3.95 In this context, it is worth setting out what the Court of Appeal recently said in *Henderson and others*:[82]

> We must recognise the limits of medical science and in particular that there may be events, deaths or symptoms which are unexplained and unforeseen. Further, any conclusion must acknowledge the importance of the burden of proof in the context of cases such as these.[83] It is not for the defence to provide any explanation; the mere fact that it is unable to do so is not of itself a sound basis for concluding that the prosecution's evidence is correct.

3.96 But if an expert called by the defence is not limiting his or her evidence to pointing out weaknesses or inaccuracies in the prosecution expert witnesses' evidence, and relies on his or her own hypothesis or database, or provides an explicit or tacit opinion based on a different interpretive model from that relied on by the prosecution experts, then our test would apply, potentially, in relation to those aspects of the defence evidence.[84] In such cases, the obligation on the defence under rule 33.4(1) of the Criminal Procedure Rules 2010 should mean that the prosecution and trial judge are aware of the defence's expert evidence before the trial, and, if necessary, the question of its reliability would be addressed at a pre-trial hearing, as we explain in Part 5.

3.97 Although the defence can be expected to disclose its expert opinion evidence before the trial – if only because deliberate non-disclosure for tactical reasons could lead to the evidence being excluded under rule 33.4(2) of the 2010 Rules[85] – it is possible that a defence expert called simply to reveal flaws in prosecution expert evidence might wish to develop his or her evidence during the trial and go beyond giving expert evidence of fact. We recognise that it might be difficult for

[80] Rule 33.4(1) of the Criminal Procedure Rules 2010 provides that the parties must serve their expert evidence (as expert reports) on the other parties and the court "as soon as practicable". However, by virtue of r 33.4(2), the defence may use an expert's report, without disclosing it, as the basis for cross-examining prosecution expert witnesses; but if a defence submission of "no case to answer" fails, and the defence would then like to adduce its expert evidence to counter the prosecution evidence, the defence will be able to do so only if the trial judge gives his or her permission (assuming the prosecution does not agree that the evidence should be admitted). The trial judge's power under r 33.4(2) to prevent the defence from relying on undisclosed expert evidence should not be overlooked; see *Ensor* [2009] EWCA Crim 2519, [2010] 1 Cr App R 18.

[81] One of our consultees, a forensic accountant, told us that in cases where he had not had to disclose his report (presumably because he was not called to testify) it was used during cross-examination and "destroyed the prosecution case".

[82] [2010] EWCA Crim 1269 at [44], [2010] 2 Cr App R 24.

[83] Non-accidental head injury allegations.

[84] We say "potentially" because the judge would have the power to disapply the test; see paras 3.65 to 3.78 above and paras 5.42 to 5.61 below.

[85] See *Ensor* [2009] EWCA Crim 2519, [2010] 1 Cr App R 18.

such an expert to limit his or her evidence solely to factual matters. Where a defence expert wishes to provide a previously undisclosed opinion in the course of his or her testimony, and there has been no deliberate ploy to ambush the prosecution, the question whether the opinion evidence should be assessed for evidentiary reliability during the trial would depend on factors such as the nature of the opinion evidence, whether or not the prosecution wishes to challenge the evidence and the strength of the prosecution case. In the situation just described, it is unlikely that the defence expert would be positing an opinion of the sort which would need to be assessed for evidentiary reliability, so it is likely that the judge would disapply the reliability test and allow the trial to proceed. We do not foresee trials being routinely disrupted by prosecution challenges to such opinion evidence, and where a challenge is made we would expect the trial judge to adopt a sensible, proportionate response to the problem and so avoid unnecessary disruptions to the trial process. In the situation described, the judge might simply allow the prosecution experts to be recalled to comment on the undisclosed opinion evidence.

3.98 As intimated above, the type of situation our recommendations are designed to address is where a defence expert puts forward an alternative, affirmative proposition which is central to the accused's defence – for example, that a child's death resulted from scurvy or a particular congenital condition rather than a non-accidental injury. For such evidence, the court may require the reliability test to be satisfied in respect of the expert's underlying hypothesis to the extent necessitated by the strength of that expert's opinion evidence. As explained already, where expert evidence of this sort is relied on by the defence it will almost always be disclosed in advance of the trial, and this would permit a pre-trial assessment of evidentiary reliability.

3.99 The qualification in the last paragraph – that the reliability test would need to be satisfied to the extent necessitated by the strength of the defence expert's opinion – is important, and explains why the accused would never have to prove his or her innocence in the type of case which turns on disputed medical or other scientific evidence. Given the obligation on the prosecution to prove the accused's guilt beyond reasonable doubt, the defence expert would merely need to show that his or her alternative explanation for the child's death is a *reasonable* (that is, a realistic, sound) alternative, either on the basis of the empirical research relied on by the prosecution experts or on separate research. We expect it will often be the former, with the parties' respective experts suggesting that different inferences can legitimately be drawn from the same data.

3.100 If the prosecution has called impartial expert witnesses relying on research findings published in reputable scientific journals, those experts would be aware of, and would have taken into consideration, the research data supporting and the research data undermining their opinion evidence. The defence is likely to rely on the same data and research findings, and possibly on other published data, but suggest a different interpretation from that advanced by the prosecution experts. It is possible, however, that the defence experts would have conducted or relied on other research which has not been published in a reputable journal or been peer-reviewed in some other manner and which is not known to the prosecution witnesses; but this may well give rise to legitimate concerns about the reliability of the defence experts' data and findings.

3.101 Either way, the accused would merely have to persuade the jury that there is a realistic, sound alternative to the proposition advanced by the prosecution experts. The defence would *not* have to prove to the judge or to the jury that the inference it asks the jury to accept is established on the balance of probabilities, but (if the reliability test is applied) the defence *would* have to demonstrate to the judge that that inference is a legitimate one to draw before it could be placed before the jury. The defence expert would have to show that it is an inference based on sound scientific principles and data obtained from properly conducted scientific research.

3.102 As the Forensic Science Service suggested in relation to scientific evidence – though the same principles apply equally to other expert opinion evidence – regardless of which party is seeking to adduce the evidence, an expert's evaluative opinion should always demonstrate "balance, logic, transparency and robustness".

3.103 But it should always be borne in mind that a scientific hypothesis may ultimately be shown to be wrong, for scientific understanding is constantly evolving and developing, as the Court of Appeal recently acknowledged:

> Conclusions of … experts … necessarily involve a process of induction, that is inferring conclusions from given facts based on other knowledge and experience. But particular caution is needed where the scientific knowledge of the process or processes involved is or may be incomplete. As knowledge increases, today's orthodoxy may become tomorrow's outdated learning. Special caution is also needed where expert opinion evidence is not just relied upon as additional material to support a prosecution but is fundamental to it.[86]

3.104 The fact that a defence scientific expert's opinion may be incorrect, or that it is based on a hypothesis supported by only a small minority of scientists in the field, should not render the opinion inadmissible if it is based on the application of sound scientific principles. In scientific disciplines there will often be two or more competing but legitimate hypotheses which are supported, or not discredited, by the results of properly conducted research. Following further research, a minority view may subsequently become the generally accepted position, and what was once orthodoxy may subsequently come to be regarded as outdated learning.

3.105 Because a defence scientific expert's opinion should always be founded on sound scientific principles, we are not persuaded by the argument, rooted in the presumption of innocence, for affording the methodological credentials of expert evidence tendered by the accused a somewhat more generous benefit of the doubt. Under our proposals, in a case which turns on conflicting expert medical (scientific) evidence, the defence experts would be expected to demonstrate that

[86] *Holdsworth* [2008] EWCA Crim 971 at [57]. A similar point was made in civil proceedings in *Re U (A Child), Re B (A Child)* [2004] EWCA Civ 567, [2005] Fam 134 at [23]. See also *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [1]: "Where the prosecution is able, by advancing an array of experts, to identify a non-accidental injury and the defence can identify no alternative cause, it is tempting to conclude that the prosecution has proved its case. Such a temptation must be resisted. In this, as in so many fields of medicine, the evidence may be insufficient to exclude, beyond reasonable doubt, an unknown cause."

their opinion evidence is a legitimate, scientifically valid conclusion, based on sound principles and properly conducted research.

3.106 To put it another way, and with reference to the "hard case" example provided by Professor Roberts, defence expert opinion evidence based on a methodological foundation with "validity … demonstrated to a 0.49 level of probability"[87] should not be admissible and it would not be admissible under our proposed test, assuming of course that it would ever be possible to quantify validity – or rather invalidity – with such mathematical precision. This is because an expert opinion based on a methodological foundation which is more likely to be invalid than valid would not be sufficiently reliable to be admitted.

3.107 The unlikelihood that such precise invalidity could ever be demonstrated means that Professor Roberts' "0.49 level of probability" situation is unlikely ever to arise in practice. In reality, the trial judge facing a case of indeterminable, borderline validity would err in favour of the accused and address the admissibility of the expert's opinion evidence on the assumption that its foundation is valid. Nevertheless, Professor Roberts' example is an important one and we are grateful to him for raising it. It allows us to reaffirm our view that defence expert opinion evidence based on a methodological foundation which is as likely to be invalid as valid should not be admitted. If there were to be no requirement of underlying validity established above the 0.50 level of probability, and the accused were to be entitled to adduce expert opinion evidence founded on invalid methodology, it would be open to the accused to adduce all sorts of "junk science" in support of his or her defence.

3.108 To give a practical example, if D is charged with the murder of his or her child on account of the presence of a triad of injuries associated with shaken baby syndrome in tandem with other circumstantial evidence of non-accidental injury, it would be quite wrong if D's experts were to be permitted to adduce evidence of a discredited hypothesis that the triad of injuries could arise from non-traumatic natural causes.[88] As we said in our consultation paper, "the defence should not be able to divert the jury's attention from reliable prosecution evidence by being allowed to adduce inherently unreliable expert evidence which might give rise to an unwarranted (as opposed to a reasonable) doubt as to the guilt of the accused".[89]

3.109 It bears repeating, however, that this does not mean that the defence would be prevented from relying on an expert opinion held by only a small number of experts in the field. Insofar as such theoretical matters can ever be meaningfully quantified, defence expert opinion evidence based on a foundation with validity demonstrated to a "0.51 level of probability" should be admissible – even if the inference to be drawn from the underlying research data consistent with D's defence is one which very few other experts in the field would support and so is generally thought to be incorrect. It is the minimum requirement of 51 per cent standard of scientific validity which would allow the jury properly to be able to infer that there is a reasonable doubt as to D's guilt, and D should not be denied

[87] Paragraph 3.84 above.

[88] See paras 8.31 to 8.41 below.

[89] Consultation Paper No 190, para 6.63.

the opportunity of placing that opinion evidence before the jury just because only a small minority of experts in the field would support the drawing of that inference.[90]

3.110 The opinion of a scientific expert would be admissible for the defence even if it would place in the jury's collective mind only a small possibility that D is not guilty, so long as it is a reasonable possibility. But for that possibility to be a reasonable possibility (generating a reasonable doubt as to D's being guilty) it would need to be founded on a hypothesis which is consistent with the available observational data; and, if it is founded on new experimental data, the underlying research should have been properly conducted and scrutinised in accordance with the principles of sound scientific methodology. Again, an expert opinion of a scientific nature should be admissible for the accused in criminal proceedings if it was reached by the application of valid scientific methodology and reasoning, even if the opinion is generally thought to be wrong.

3.111 To summarise, if the accused wishes to rely on expert opinion evidence amounting to an affirmative proposition predicated on a particular scientific hypothesis to show there is a reasonable doubt as to his or her guilt, it would be for the defence to demonstrate (in effect, to prove on the balance of probabilities) that the opinion is underpinned by a foundation of valid scientific methodology or, in the words of clause 4(1)(a) of our draft Bill, to show that the opinion is "soundly based".[91] An expert opinion will not be "soundly based" if it is underpinned by methodology which is no more likely to be valid than invalid. However, the question whether or not the expert's *opinion* evidence is sufficiently reliable to be admissible is not so much a fact which is capable of being proved to a particular standard and, under our proposed test, it would not need to be proved to any standard, whether the party tendering it for admission is the prosecution or the defence. Determining the evidentiary reliability of an expert's opinion is more like a judgment call based on all the available evidence.[92]

3.112 Lord Justice Leveson appeared to make this point in his speech to the 2009 Bond Solon Expert Witness Conference,[93] when he said:

> a court examining expert evidence is more like an English tutor considering an essay, rather than the maths tutor looking for the right numbers.

[90] One of the reasons why we do not support an admissibility test based on scientific consensus – a so-called *Frye* test – is because such a test could prevent the adduction of scientifically sound opinion evidence supported by only a minority of scientists in the field. See Consultation Paper No 190, para 4.31.

[91] Although a defence proposition giving rise to a reasonable doubt as to the accused's guilt should (we suggest) simply require underlying soundness to be established on the balance of probabilities, the position for prosecution evidence is less straightforward. As explained in para 3.92 above, the prosecution experts would need to establish the soundness of their underlying material (including any hypothesis relied on) to the extent required by the strength of their expert opinions.

[92] For the view that there should be explicit standards of proof for the reliability of expert evidence in criminal proceedings – see J Hartshorne and J Miola, "Expert evidence: difficulties and solutions in prosecutions for infant harm" (2010) 30 *Legal Studies* 279, 294 to 296.

[93] 6 November 2009, http://www.judiciary.gov.uk/media/speeches/2009/speech-wall-lj-06112009 (last visited 3 February 2011).

3.113 So, although we believe the same reliability test (and guiding factors) should apply whether the expert opinion evidence is tendered for admission by the prosecution or defence, and although it would be for the party calling the expert witness to demonstrate that the witness's opinion evidence is sufficiently reliable to be admitted, it does not follow that the defence would have to prove to the judge on the balance of probabilities that its expert opinion evidence is correct. The criteria for assessing evidentiary reliability would always be the same, but the strength of the expert's opinion evidence, together with the burden and standard of proof to be applied by the jury (or other fact-finding tribunal) in a criminal trial, would determine the foundation of knowledge and research data needed to demonstrate that that opinion evidence is sufficiently reliable to be admitted.

3.114 To illustrate this, consider again a trial where the prosecution's case is that D murdered a young child (V) by shaking but there is no evidence of D's guilt other than (1) D's being alone with V at the time when V suffered the fatal injury and (2) the opinion of a scientific expert that V's fatal injury was non-accidental.

3.115 In such a case, in order for the prosecution to secure a conviction for murder, the expert called by the prosecution would have to give evidence that he or she was sure that the injury was non-accidental (that is, caused by shaking) and the jury would have to be sure that his or her opinion evidence was correct. There would therefore need to be an extremely cogent (and broad) evidential foundation supporting the hypothesis underpinning the prosecution expert's opinion, with nothing in that large database to suggest that the hypothesis might be incorrect. So, in the absence of a sufficiently broad, corroborative foundation of research data, the expert's opinion would be inadmissible on the ground of insufficient reliability.[94]

3.116 But if in a similar type of case there was other cogent evidence of D's guilt (for example, evidence that D had previously committed acts of violence against V or that D had tacitly admitted his or her culpability to E) the prosecution might be able to rely on weaker expert opinion evidence (for example, an opinion that V's condition was unlikely to have resulted from an accident or congenital condition, although an accident or congenital condition could not be ruled out). An opinion of this sort would of course need to be based on sound scientific principles, but the empirical research underpinning it would not need to be as extensive as that supporting an opinion of the type described in the previous paragraph.

3.117 The evidential foundation supporting the shaken-infant hypothesis underpinning the expert's opinion in the second type of case would not need to be as cogent as that in the first type of case. But in each case, in determining whether the expert opinion evidence was sufficiently reliable to be admitted, the criteria relating to scientific validity applied by the trial judge would be the same. That is to say, for scientific opinion evidence, the underlying evidence supporting the hypothesis and the chain of reasoning underpinning the opinion would always need to be scientifically valid; but the required extent to which there has been scientific research and the required extent of the corroborative data supporting a

[94] In this example, if the prosecution expert was not giving evidence in terms of being sure that an accident could be ruled out, but only making accident unlikely, then while his or her opinion could be admissible, there would be no case for D to answer (given the absence of any other evidence of D's guilt).

hypothesis will depend on the nature and strength of the opinion and the extent to which it is qualified.[95]

3.118 Ear-print comparisons relied on by the prosecution provide another helpful example. In *Dallagher*[96] a prosecution expert on ear-prints testified that, following a comparison of control ear-prints provided by D and latent ear-prints lifted from a window, he was "sure" and "absolutely convinced" that D left the latent prints. In our consultation paper we suggested that this opinion evidence was insufficiently reliable to be admissible.[97]

3.119 The reason for our view was that there was an insufficient body of research data to support the assumption as to the uniqueness of ear shapes or, if uniqueness is accepted, the assumption that ears leave unique prints, assumptions which underpinned the strength of this expert's opinion.[98]

3.120 In addition, the expert's opinion relied heavily on subjective factors, that is, experience rather than objectively verifiable measuring techniques.[99]

3.121 But in another case, a weak opinion based on ear-prints may well be sufficiently reliable to be admitted (under our proposed test), if the prosecution relies on the

[95] Associate Professor William O'Brian said in his response to our consultation paper that an expert's evidence might be insufficiently reliable to found a conviction but be sufficiently reliable to establish a reasonable doubt as to D's guilt; and Dr Tony Ward also provided a comment broadly consistent with our analysis. In addition, the General Medical Council said in relation to medical evidence that "the more significant the evidence is to the issues in a case, the greater the scrutiny of its admissibility should be".

[96] [2002] EWCA Crim 1903, [2003] 1 Cr App R 12.

[97] Consultation Paper No 190, paras 2.14 and 2.15.

[98] The Court of Appeal noted (at [9]) that the expert "had simply become interested in ear print identification and read what was available on the topic. He had built up a portfolio of about 600 photographs and 300 ear prints and from his experience and what he had read he was satisfied that no two ear prints are alike in every particular." It was also noted that the prosecution experts agreed that "it would be very useful if further research was done to see whether it were possible for prints from two separate ears to be produced showing apparent similarities". On appeal, D relied on fresh expert evidence to the effect that there "is no empirical research, and no peer review to support the conclusion that robust decisions can be founded on comparisons which in turn are critically dependent on the examiner's judgment in circumstances where there are no criteria for testing that judgment" (at [11]).

[99] Unfortunately the Court of Appeal did not consider the strength of the prosecution witness's opinion when addressing admissibility. Adopting the traditional *laissez-faire* approach to admissibility, whereby expert evidence is admissible if "it is sufficiently well-established to pass the ordinary tests of relevance and reliability", the court held that the expert opinion evidence of ear-print analysts is admissible, and then went on to consider (at [30]) whether the jury had been "properly equipped to assess the weight to be attached" to the prosecution experts' conclusions, given that the witnesses had accepted in evidence that their opinions were based on assumptions "supported by relatively limited information" (at [34]).

expert's opinion merely to provide additional support for other cogent evidence of the accused's guilt.[100]

3.122 So, if a prosecution expert's opinion is that the latent print from the crime scene and the control print taken from the accused show consistencies and no inconsistencies, the expert could opine that this is the case (assuming that the *Turner* test is satisfied and there is no other reason for excluding the evidence).[101] If there is a sufficient body of data on similarities and differences between individuals' ear-prints, the expert might even be able to give an opinion as to the probable number of persons (including the accused) who could have left the latent print.

3.123 But under our proposed admissibility test, the body of data in support of a hypothesis of uniqueness would need to be very strong indeed before any such expert would be permitted to opine that ear-print evidence standing alone establishes the accused's guilt beyond reasonable doubt.

3.124 It should not be thought, however, that different considerations necessarily apply if there is additional evidence of the accused's guilt independent of the opinion evidence provided by a prosecution expert. The important point is that if an expert interpreter of ear-prints wishes to give an opinion, based on such prints, on the probability that the accused left a latent print at the scene of the crime, then his or her opinion must be sufficiently reliable to be admitted, and it is the particular opinion, including its strength, which will need to assessed against our proposed test.

CODIFICATION OF THE ADMISSIBILITY TEST GENERALLY

3.125 In Part 2 we explained that there are four common law admissibility requirements for expert evidence in criminal proceedings, and in this Part we have reaffirmed our view that the reliability limb should be replaced by a new statutory test. We now turn to the other three limbs of the common law test, set out in paragraphs 2.3 to 2.11 above.

3.126 In our consultation paper we expressed the view that these three limbs (relating to assistance, expertise and impartiality) are fundamentally sound and relatively

[100] In *Dallagher* [2002] EWCA Crim 1903, [2003] 1 Cr App R 12 the expert witness called by D (on appeal) opined, according to the Court of Appeal's summary, that an "ear print comparison can help to narrow the field … but cannot alone be regarded as a safe basis on which to identify a particular individual as being the person who left one or more prints at the scene of a crime" (at [12]). See also Consultation Paper No 190, fn 14 to para 2.15, where we address the subsequent analysis in *Kempster (No 2)* [2008] EWCA Crim 975, [2008] 2 Cr App R 19.

[101] The *Turner* test (para 2.3 above) would not be satisfied in this context if the expert's evidence would not furnish the jury with information which is likely to be outside its experience and knowledge. In addition, admissible prosecution evidence may be excluded by the judge at common law or under s 78(1) of the Police and Criminal Evidence Act 1984 if its probative value would be outweighed by the unduly prejudicial effect it would have on the jury.

uncontroversial, although we acknowledged that they could occasionally give rise to problems when applied in practice.[102]

3.127 We asked our consultees whether they agreed with us. More to the point, we asked whether we should incorporate these aspects of the common law test into the legislation we envisaged for our proposed reliability test so that all the admissibility requirements would stand together in a single statutory framework or code.[103]

3.128 There was very broad agreement with our view that the rest of the common law admissibility test is satisfactory.[104] Indeed there was very little disagreement at all.[105] There was also broad support for codification of the admissibility test for expert evidence, the suggestion being that by incorporating all aspects of the test into a single Act of Parliament we would bring certainty, stability, and uniformity to the law.[106]

3.129 However, some consultees could see no good purpose in codifying the law. In particular, the Council of HM Circuit Judges argued that the present rules are "workable and flexible" and "should remain so". We note, however, that this comment would appear to have been based on a misunderstanding of what we intended by codification. Our view was that the present requirements should be placed on a statutory footing with no loss of flexibility.

3.130 In any event, we do not disagree with the argument that codification in isolation would bring little benefit. Our suggestion was predicated on the provisional proposal that there should be a new test relating to evidentiary reliability set out in primary legislation. Codification would be beneficial, therefore, because it would bring all the admissibility requirements together.

3.131 Mr Justice Treacy supported codification for this reason. He noted that the common law rules are "well-established and accepted" and it would be "desirable" to incorporate them into the new legislation so that "all relevant tests and materials are in a single place and carry equal authority". Similarly the Criminal Cases Review Commission felt there was a strong argument for incorporating all the common law rules relating to expert evidence in a single code.

[102] Consultation Paper No 190, para 1.8. In truth it is the *Turner* test which has occasionally given rise to difficulties, not the other requirements.

[103] Consultation Paper No 190, paras 1.2, 1.3 and 1.8, with para 6.82.

[104] Some consultees recognised, in line with the view we expressed in our consultation paper, that, while the test itself is satisfactory, there may be problems in its application. The same point was also recently made by Lord Justice Leveson in his speech for the Forensic Science Society and King's College, London, 16 November 2010, available at www.judiciary.gov.uk/media/speeches/2010/speech-lj-leveson-expert-evidence-16112010 (last visited 3 February 2011).

[105] Professor Mike Redmayne and Associate Professor William O'Brian were unenthusiastic about the *Turner* test. Professor Redmayne felt that the test is too vague, whereas Associate Professor O'Brian felt that some (unspecified) aspects of the test were "deeply troublesome".

[106] A point made by the Police Superintendents' Association and the Crown Prosecution Service.

3.132 Representing the Bar, the Criminal Bar Association felt that the other aspects of the common law admissibility test were satisfactory and should be codified in primary legislation, incorporating "all steps to admissibility … as well as the [reliability] provision"; and the Bar Law Reform Committee suggested that there should be "comprehensive codification of the law relating to expert witnesses in the criminal trial to be contained in primary legislation". The Committee added "that there is no reason why statutory reform in this area ought not also to provide for more rigorous examination of the sufficiency of an individual's suitability to appear as an expert witness". The Law Society, representing solicitors, also supported codification.

3.133 The Rose Committee of the Senior Judiciary accepted, rightly, that codification was not necessary, but they agreed that it "might be of assistance if the evidential rules were codified in primary legislation, so as to provide a trial judge with a framework, or reference point, for his [or her] determination of the issue of admissibility".

3.134 Other consultees who supported codification included the Crown Prosecution Service, the Justices' Clerks' Society, the RSPCA, the Forensic Science Society and the Police Superintendents' Association. Northumbria University's School of Law's Centre for Criminal and Civil Evidence and Procedure rightly acknowledged that it would be illogical to have a statutory reliability test in tandem with the existing common law tests.[107]

3.135 Given the positive responses to our suggestion that there should be general codification of the admissibility requirements in criminal proceedings, we have come to the conclusion that the statutory admissibility test for expert evidence should incorporate all aspects of the common law test.

3.136 **We therefore recommend that there should be a single framework in primary legislation governing the admissibility of all expert evidence in criminal proceedings**.

3.137 We explain this recommendation more fully in Part 4.

[107] Some consultees went further, suggesting that we should emphasise particular aspects of the common law admissibility test. The Forensic Science Society stressed the importance of the impartiality requirement.

PART 4
CODIFICATION

INTRODUCTION

4.1 In Part 3 we expressed our view following consultation that our proposed statutory admissibility test for expert evidence should incorporate all aspects of the common law test, in addition to our new reliability test. In this Part we set out our recommendation for the codification of the three common law admissibility rules summarised in paragraphs 2.3 to 2.11 above.

4.2 In our summary in Part 2 we explained that, at common law, expert evidence can be admitted in criminal proceedings only if:

(1) the evidence would be likely to assist the jury or other fact-finding tribunal (the *Turner* test);[1]

(2) the evidence is to be given by an individual who is qualified through study or experience to give such evidence (that is, he or she is an expert in the relevant field); and

(3) the expert is able to provide objective, impartial evidence.

4.3 On the third limb, we also explained that rule 33.2 of the Criminal Procedure Rules 2010 now expressly provides that an expert has an overriding duty to give opinion evidence which is objective and unbiased.

4.4 In Part 3 we explained that there was broad support amongst our consultees in relation to both the nature of these common law requirements and the desirability of bringing them together in a single code; and, as noted above, we introduced our recommendation that these requirements should be codified alongside our new reliability test.[2]

4.5 In the following paragraphs we therefore set out and explain the clauses in our draft Criminal Evidence (Experts) Bill which would bring about codification.[3]

4.6 We recommend no change to the *Turner* test or to the requirement regarding the need to demonstrate expertise. We do, however, recommend that there be an explicit standard of proof (the balance of probabilities) in relation to the need to demonstrate expertise. The question whether or not an individual claiming expertise is indeed an expert is a matter which can and should be determined according to a standard of proof. A fixed standard would provide the criminal courts with the yardstick they require to determine the question, and it would bring certainty, clarity and transparency to the law. Importantly, it would also put the parties and the expert communities on notice that any individual claiming the

[1] Following *Turner* [1975] QB 834, 841.

[2] Paragraphs 3.125 to 3.137.

[3] The new admissibility rule we recommend in respect of evidentiary reliability is explained in Part 5.

status of an expert witness will not be able to provide expert evidence in criminal proceedings unless and until it is established that he or she is in fact an expert.

4.7 Our recommendation for the impartiality requirement may be slightly different from the common law position for criminal proceedings. There are few cases on the question of expert impartiality for the law of criminal evidence, so in this respect we have drawn on the common law as described by the Civil Division of the Court of Appeal. We also believe that the duty currently set out in rule 33.2 of the Criminal Procedure Rules 2010 is of such importance that it should be brought into our draft Bill and that our impartiality requirement should be defined with specific reference to it.

4.8 **In short, we recommend that primary legislation should provide that expert evidence is admissible in criminal proceedings only if:**

(1) the court is likely to require the help of an expert witness (the *Turner* test); and

(2) it is proved on the balance of probabilities that the individual claiming expertise is qualified to give such evidence (the qualification or expertise test).[4]

4.9 **We also recommend that this legislation should provide that expert evidence is inadmissible if there is a significant risk that the expert has not complied with, or will not comply with, his or her duty to provide objective and unbiased evidence, unless the court is nevertheless satisfied that it is in the interests of justice to admit the evidence (the impartiality test).**

4.10 It should be noted that we are not recommending a broader code which would incorporate all aspects of the law on expert evidence in criminal proceedings.

4.11 In particular, we make no recommendation that the common law hearsay exception described in rule 8 of section 118(1) of the Criminal Justice Act 2003 should be codified. This rule, which allows an expert witness to "draw on the body of expertise relevant to his [or her] field", will remain with the other hearsay provisions of the 2003 Act.

THE *TURNER* TEST

4.12 Clause 1(1) of our draft Criminal Evidence (Experts) Bill provides that expert evidence is admissible in criminal proceedings only if –

> (a) the court is satisfied that it would provide information which is likely to be outside a judge or jury's experience and knowledge, and which would give them help they need in arriving at their conclusions …

4.13 As explained above, this is a straightforward codification of the common law *Turner* test. The common law authorities would therefore continue to guide the

[4] Rule 33.3(1)(a) of the Criminal Procedure Rules 2010 already provides that an expert witness's written report must "give details of the expert's qualifications, relevant experience and accreditation".

courts, but the courts would not be inhibited from revisiting the way the *Turner* test has been applied in specific contexts if this were thought to be desirable. Our test would not change the law, but it would permit the law to develop incrementally as it has in the past.

4.14 The test merely requires that the court (the trial judge or magistrates' court) be "satisfied" that the expert evidence "is likely" to be outside a judge or jury's experience and knowledge and that the evidence would provide help. This is not a requirement which would need to be proved.

THE QUALIFICATION (EXPERTISE) TEST

4.15 Clause 1(1) of our draft Criminal Evidence (Experts) Bill also provides that expert evidence is admissible in criminal proceedings only if –

> (b) the person who gives it is qualified to do so …

4.16 Clause 2(1) provides that, for the purposes of clause 1(1)(b), "a person may be qualified to give expert evidence by virtue of study, training, experience or any other appropriate means". Clause 2(2) provides that, for that person's evidence to be admissible, the court "must be satisfied on the balance of probabilities that [he or she] is so qualified".

4.17 This standard of proof provides the *minimum* acceptable level of knowledge, experience or skill which must be established before an individual can provide expert evidence. The extent of the expert's expertise beyond this minimum threshold goes to weight. That is to say, all other things being equal, the greater the level of expertise borne by an expert witness, the more likely it is that the fact-finding tribunal will accept his or her evidence.[5]

4.18 Clause 2(1) has been drafted in this way for a number of reasons:

(1) it expressly sets out the traditional ways in which the equivalent common law requirement has been satisfied;

[5] The requirement that expertise be proved on the balance of probabilities accords with section 54(2) of the Youth Justice and Criminal Evidence Act 1999 (on the determination of general witness competence) and the equivalent requirement in s 123 of the Criminal Justice Act 2003 (on a person's capability to make a statement where such evidence is tendered instead of live oral evidence). This standard is also consistent with our understanding of the current law in para 2.7 above and, more generally, with what has been described as "the default standard of proof for preliminary facts for all the parties" in a number of common law jurisdictions; see R Pattenden, "The proof rules of pre-verdict judicial fact-finding in criminal trials by jury" (2009) 125 *Law Quarterly Review* 79, 100.

(2) it would allow the courts to require a combination of study, training or experience before expertise is recognised for some disciplines, in line with the developing common law approach;[6] and

(3) it directs the parties to consider adducing other evidence of expertise in cases where the court is unlikely to be satisfied by evidence of "study, training or experience".

4.19 It should always be possible for a criminal court to determine on the balance of probabilities whether or not a particular individual is qualified to provide expert evidence of a particular type. In the vast majority of cases we would expect expertise to be established, as it is now, by admissible evidence of study, training or experience (or a combination of the same). For example, it is highly unlikely that professionals with relevant experience, such as surgeons, psychiatrists, accountants and engineers, would have to provide any more evidence than they currently have to provide when called upon to demonstrate their expertise.

4.20 Exceptionally, however, evidence of study, training or experience may be insufficient to prove the claim to expertise, as we intimated in paragraph 4.18(3). If an individual claiming expertise is relying on a skill such as lip reading or ear-print analysis which is unusual in the sense that evidence of study, training or experience may be unavailable or, if it is available, the court may not be satisfied that it suffices to discharge the requirement of proof in clause 2(2), the individual concerned would need to be prepared to prove in a more direct way that he or she has the skill. In other words, the individual, or the party calling the individual, might need to provide the court with the results of a relevant test or demonstration undertaken in controlled conditions which show that he or she is skilled and therefore qualified to provide evidence as an expert witness.[7]

4.21 We therefore agree with the underlying thrust of the following comment made by the Society of Expert Witnesses in response to our consultation paper:

[6] See para 2.7 above. The trial judge may require relevant academic experience, practical experience, forensic experience in the context of criminal investigations or proceedings, or any combination of the same. The criminal courts should be left to develop their requirements incrementally, depending on the nature of the evidence being tendered for admission. The fact that (say) a forensic scientist has been certified as having expertise in accordance with the International Organization for Standardization's conformity assessment standard ISO 17024 would be relevant in this context.

[7] Given the clear terms of cl 2(2), the court might intimate or direct at a pre-trial hearing that such results should be provided. Of course, if testing is undertaken, and the results provide a quantifiable assessment of the witness's skill, the witness's evidence would be inadmissible if the results show that he or she is as likely to be wrong as right, even if the witness has been called by the defence. This follows from the fact that all parties will need to prove their witnesses' expertise on the balance of probabilities. Professor Mike Redmayne expressed the point well when he suggested that if a defence expert is as likely to be wrong as right "you might as well toss a coin".

> An expert's performance in terms of giving the correct opinion can, and perhaps should, periodically be tested against predetermined standards. … The expert gives his or her opinion in a simulated, blinded setting where the correct results are known and, by comparison, the reliability of that expert's opinion can be assessed in terms of such measurements as the incidence of false positive and false negative results. Predetermined standards of reliability can be set and, if appropriate, periods of retraining and retesting can be arranged.

4.22 This view also accords with the opinion of Associate Professor William O'Brian. In his response to our consultation paper, he said that evidence such as handwriting analysis and lip-reading "are methods that could be subjected to empirical testing … Evidence that can be empirically tested should be subjected to such tests before it is used as a basis for criminal convictions".

4.23 There would be some cost implications, of course, in that testing would be required in some circumstances, but this would not be an onerous burden for the individuals concerned given the very basic nature of the testing required.[8] In any event:

(1) it would be a very small price to pay for the guarantee of reliability in the round provided by proof that an individual claiming to have an unusual skill actually has that skill, if called to give expert evidence in criminal proceedings; and

(2) given what we say in paragraph 2.7 above, the courts should already be requiring proof of expertise in cases where individuals relying on an unusual skill are called to provide expert evidence.

4.24 Nor would an obligation to prove expertise with test results lead to any significant delays. Because the obligation to prove expertise on the balance of probabilities is expressly set out in clause 2(2) of our draft Bill, a witness claiming expertise would be fully aware of the need to prove an unusual skill in advance of the trial, if his or her "study, training [or] experience" (if any) would be unlikely to provide a sufficient basis for determining the issue.

THE IMPARTIALITY TEST

4.25 Clause 1(1) of our draft Criminal Evidence (Experts) Bill also provides that expert evidence is admissible in criminal proceedings only if –

> (c) the evidence is not made inadmissible as a result of section 3 (impartiality).

4.26 Drawing on what is currently set out in rule 33.2(1) and (2) of the Criminal Procedure Rules 2010, clause 3(1) of our draft Bill provides that an expert "has a

[8] As the Society of Expert Witnesses pointed out, periodic testing should suffice to demonstrate an ongoing skill. In addition, the results could be used in subsequent proceedings. It should be noted that we are not seeking to impose an obligation that any expert should undergo periodic testing. We are merely recommending that any individual who wishes to give expert evidence in criminal proceedings should have to prove that he or she is in fact an expert.

duty to the court to give objective and unbiased expert evidence"[9] and clause 3(2) provides that this duty "overrides any obligation to the person from whom the expert receives instructions or by whom the expert is paid".[10]

4.27 We have brought these provisions into our draft Bill because of their importance, their relationship with our other impartiality provisions in clause 3 and, perhaps more fundamentally, because the expert's overriding duty does not sit easily in rules which are concerned with procedure. Our draft provisions are, however, slightly wider than the equivalent provisions in the Criminal Procedure Rules 2010. Clause 3 encompasses all expert evidence, whether of fact or opinion,[11] whereas rule 33.2 of the Rules is limited to expert opinion evidence. We believe our wider approach is desirable because it is possible to envisage a biased expert deliberately providing misleading evidence of fact. An expert might, for example, provide an incomplete explanation of what was observed or give only a partial description of the data generated by an experiment.[12]

4.28 Clause 3(3) provides that, if it appears to the court that there is a significant risk that an expert will not comply (or has not complied) with the duty in clause 3(1), his or her expert evidence is inadmissible unless the court is satisfied that it is in the interests of justice to admit it. This provision can therefore be broken down as follows:

(1) the starting point is that there is a presumption of impartiality, based on the common-sense assumption that expert witnesses generally tend to comply with their duty to the court;

(2) this presumption of impartiality will be rebutted, however, if there is sufficiently cogent evidence to suggest a significant risk that the expert will not comply (or has not complied) with that duty;

(3) where it appears to the court that there is a significant risk of non-compliance with that duty, there is a presumption of inadmissibility;

(4) but the expert's evidence will be admitted if the court is satisfied that it is in the interests of justice to admit it.

4.29 We expect that the presumption of impartiality will stand unchallenged in the vast majority of cases, so in practice this subsection should affect only a small minority of criminal cases.

4.30 We should explain, however, that clause 3(3) may be slightly different from the current common law position for criminal proceedings. There are few reported cases on biased expert witnesses in criminal proceedings, so the common law is

[9] Rule 33.2(1) currently provides that an expert "must help the court … by giving objective, unbiased opinion on matters within his [or her] expertise".

[10] Rule 33.2(2) currently provides that the expert's duty in r 33.2(1) "overrides any obligation to the person from whom he [or she] receives instructions or by whom he [or she] is paid".

[11] Clause 10.

[12] We have not incorporated r 33.2(3) of the 2010 Rules into our draft Bill because there is no good reason why this provision should be brought into primary legislation. Clause 3(5) of our draft Bill provides the Criminal Procedure Rules Committee with the power to make further provision in connection with the expert's overriding duty to the court.

unclear in this context. In formulating our test we have therefore decided to build on the duty in rule 33.2 of the Criminal Procedure Rules 2010; but we have also included a degree of flexibility to reflect what the common law and procedural rules require in civil proceedings, drawing on a judgment of the Court of Appeal (Civil Division).[13]

4.31 This degree of flexibility – the discretion to allow expert evidence to be admitted notwithstanding a significant risk of bias – will ensure that the interests of justice are always satisfied, in accordance with the overriding objective of the Criminal Procedure Rules 2010.[14] It is important to understand, however, that if this discretion is applied to allow a biased expert's evidence to be admitted, it would be open to the other party or parties to apply to have the evidence of bias placed before the jury so that the expert's evidence can be properly assessed at the end of the trial.

4.32 An example of a situation where an expert's evidence might be admitted, despite a significant risk of bias, could be where the risk is relatively low (albeit significant), the expert's evidence would materially support the accused's defence (if the evidence is believed), evidentiary reliability is not disputed and there is a dearth of alternative expert evidence for the accused to draw upon.

4.33 In accordance with the current position for criminal proceedings,[15] the mere appearance of bias would be insufficient to justify the exclusion of an expert witness's evidence. But of course if the facts underpinning the argument that there is apparent bias allows an inference of actual bias to be drawn, such that it appears to the court that there is a significant risk that the expert might not comply with the duty in clause 3(1), then the presumption of inadmissibility would arise.

4.34 It follows that clause 3 should not affect current practice whereby employees of a police force or other investigatory agency (for example, drugs officers and forensic accountants) are able to give expert evidence for the prosecution. However, each case will turn on its own facts. If there is credible evidence of bias on the part of a particular expert then the presumption of inadmissibility would arise.

4.35 To ensure that the current practice referred to above is not affected, and that an expert's evidence will be inadmissible only if there is evidence of actual bias, clause 3(4) provides as follows:

[13] See *R (Factortame Ltd) v Secretary of State for Transport, Local Government and the Regions (No 8)* [2002] EWCA Civ 932, [2003] QB 381 at [70], suggesting a similar approach in civil proceedings governed by the Civil Procedure Rules. For the possible types of bias in civil proceedings, see D Dwyer, "The causes and manifestations of bias in civil expert evidence" (2007) 26 *Civil Justice Quarterly* 425.

[14] Rule 1.1(1) provides that the "overriding objective" of the rules "is that criminal cases be dealt with justly".

[15] Paragraph 2.11 above.

> The fact that the expert has an association (for example, an employment relationship) which could make a reasonable observer think that the expert might not comply with [the duty in clause 3(1))] does not in itself demonstrate a significant risk [of non-compliance with that duty].

4.36 In other words, the mere fact of an association does not of itself allow an inference to be drawn that there is a significant risk of non-compliance with the duty. But the particular association may allow such an inference to be drawn (for example, because a prosecution expert was heavily involved in leading the police investigation, or a defence expert has previously been associated with a criminal gang to which the accused belongs).

THE SCOPE OF CLAUSES 1 TO 3

4.37 These clauses would apply to all expert evidence tendered for admission in criminal proceedings in England and Wales.[16] Importantly, these provisions would apply whether the expert evidence is to be given orally, in a written report or in some other way.[17]

MONITORING COMPLIANCE WITH CLAUSES 1(1)(B) AND 2

4.38 In Part 1 of this report we summarised our concerns about the expert opinion evidence given for the prosecution in the case of *Clark.*[18] It will be remembered that the expert in question, a paediatrician, provided unreliable statistical evidence which he was not qualified to give.

4.39 In responding to our consultation paper, a number of our consultees emphasised the need to ensure that experts stay within their area of expertise. Mr Justice Treacy felt that this requirement should be part of the statutory test, and the Forensic Science Regulator suggested that there should be a process to monitor an expert's evidence to prevent drift into other areas. Similar points were made by the British Psychological Society, the Forensic Science Society, the Royal Statistical Society, the Bar Law Reform Committee and an American judge.[19] Our consultees' view in this respect also accords with a recommendation made by the

[16] See paras 2.19 to 2.22 above. Consistent with the Criminal Justice Act 2003, cl 10 provides that "criminal proceedings" means "criminal proceedings to which the strict rules of evidence apply" (which includes criminal trials and *Newton* hearings); see *Bradley* [2005] EWCA Crim 20, [2005] 1 Cr App R 24 at [29] and [36]. A *Newton* hearing is a trial to determine the facts if D pleads guilty, where there is a dispute as to the facts relevant to sentencing. Clause 11(6) provides that the Act would extend to England and Wales only.

[17] Clause 10 provides that "expert evidence" includes "all such evidence, in any form and however given". The admissibility requirements would apply if the parties agree to the admission of an expert's hearsay evidence (under s 9 of the Criminal Justice Act 1967 or s 114(1)(c) of the Criminal Justice Act 2003), but the judge would be unlikely to rule against the parties in such a case.

[18] [2003] EWCA Crim 1020, [2003] 2 FCR 447, para 1.5 above.

[19] The Hon Theodore R Essex.

Hon Stephen Goudge in his 2008 report following an enquiry into paediatric forensic pathology in Ontario.[20]

4.40 Criminal courts in England and Wales are already under a tacit (and ongoing) duty to monitor expert witnesses' evidence to prevent drift because an expert witness can provide expert evidence only insofar as the common law admissibility requirements for such evidence are satisfied. Equally, under our proposed alternative an expert witness would be able to provide expert evidence in criminal proceedings only to the extent permitted by the provisions in our draft Bill.

4.41 Be that as it may, we agree with the view of our consultees, and the recommendation of Stephen Goudge, that it would be sensible to have this tacit duty expressly set out in legislation. An explicit provision requiring the court to rule on the scope of an expert witness's expertise would have the effect of priming the trial judge (or magistrates) in advance of the expert's testimony to do what is necessary to ensure that the expert stays within his or her field. The judge or magistrates would monitor the expert's evidence and intervene to prevent the expert from straying outside that field.

4.42 In the absence of such intervention, a Crown Court judge would nevertheless be able to ameliorate any problem by subsequently providing a direction to the jury to disregard expert evidence the witness was not qualified to provide. Alternatively, if exceptional circumstances warranted a more robust approach, the judge could discharge the jury from its obligation to return a verdict.

4.43 Importantly, however, if the judge monitors the expert's testimony, and ensures that the expert's evidence relates solely to matters within his or her relevant area of expertise, the risk of a problem and the possibility of an expensive re-trial would be correspondingly reduced.

4.44 We therefore believe that the Criminal Procedure Rules 2010 should include a provision to the effect that the trial judge (or magistrates) must rule on the scope of the expert witness's expertise before he or she testifies (in line with the requirements of clauses 1(1)(b) and 2) and then monitor the position to ensure that the expert witness does not give evidence on matters outside his or her area of expertise. A rule of this sort would go some way towards ensuring that weak, tangential evidence given by an eminent figure, and which for that reason might be accepted at face value, would not be heard by the jury.[21]

4.45 In addition, we believe a further safeguard would be provided in this context if an expert witness were to be required, while in the witness box but before testifying,

[20] The Goudge Report, vol 3, p 475, Recommendation 129: "When a witness is put forward to give expert scientific evidence, the court should clearly define the subject area of the witness's expertise and vigorously confine the witness's testimony to it."

[21] Referring again to the facts of *Clark* [2003] EWCA Crim 1020, [2003] 2 FCR 447, the judge would presumably have ruled that the paediatrician was qualified to provide an opinion only on matters relating to children's health. Accordingly, the expert would not have been permitted to drift from his area of expertise to provide an opinion on statistical analysis. Counsel for the prosecution would not have asked him about such matters; and if through an oversight the expert was asked questions beyond his remit, defence counsel would have intervened to raise the matter before the judge to prevent drift or the judge would have raised the matter himself.

to read to him or herself the part of his or her report where it is stated that he or she understands the expert's overriding duty to the court.[22]

4.46 **We therefore recommend that the Criminal Procedure Rules be amended to include the following additional requirements**:

(1) before giving oral evidence, an expert witness should be referred to his or her overriding duty to give expert evidence which is

(a) objective and unbiased, and

(b) within his or her area (or areas) of expertise;

(2) the trial judge or magistrates' court should rule on the expert witness's area (or areas) of expertise before he or she gives evidence and monitor the position to ensure that he or she does not give expert evidence on other matters.

[22] See Criminal Procedure Rules 2010, r 33.3(1)(i).

PART 5
EVIDENTIARY RELIABILITY

INTRODUCTION

5.1 In this Part we develop the recommendations we introduced in Part 3 on our proposed reliability test for expert opinion evidence, and on the power which would permit a trial judge not to apply it.

5.2 We also explain the factors we believe should be in our draft Criminal Evidence (Experts) Bill, to provide trial judges with guidance on how evidentiary reliability is to be assessed; and we explain our view on how a ruling on evidentiary reliability should be addressed on appeal.

THE RELIABILITY TEST

5.3 As we explained in Part 3, there was very broad (but not universal) support for a new reliability test for expert opinion evidence along the lines proposed in our consultation paper.

5.4 In the light of the comments we received during the consultation process, our twofold recommendation for criminal proceedings is that:

(1) there should be a statutory admissibility test which would provide that an expert's opinion evidence is admissible only if it is sufficiently reliable to be admitted;[1] and

(2) there should be a statutory provision to the effect that, if there is any doubt on the matter, expert evidence presented as evidence of fact should be treated as expert opinion evidence.[2]

5.5 The test set out in our consultation paper, and repeated in paragraph 3.6(2) above, was intended to describe in broad terms the factors which ought to be addressed when considering evidentiary reliability, particularly for evidence of a scientific nature, but it was not draft legislation. It is now necessary to consider how the new test is to be formulated for an Act of Parliament, given that the test must encompass, potentially, every conceivable type of expert opinion which might be proffered for admission in criminal proceedings. What is required is a genuinely universal test.

5.6 In other words, while the statutory test must be framed so that it encompasses all forensic scientific opinion evidence, and so must make reference to the factors set out in paragraph 3.6(2), it must also be broad enough to encompass, potentially, all other types of expert opinion evidence. Examples of non-scientific expert opinion evidence which might be proffered for admission in criminal proceedings are an academic lawyer's opinion on the legal position in a foreign jurisdiction, a lip-reader's opinion on what was said by another individual on a

[1] Paragraph 3.36 above; see cl 1(2) of our draft Bill.

[2] Paragraph 3.39 above; see cl 1(3) of our draft Bill.

particular occasion and a literary expert's opinion on whether an ostensibly obscene novel is justified "in the interests of literature, art or learning".[3]

5.7 A general test requiring reference to whether an expert's opinion evidence is predicated on "sound principles, techniques and assumptions" (paragraph 3.6(2)(a) above) is certainly apt to cover scientific evidence, and perhaps the opinion evidence of an expert on foreign law, but it is probably too narrow to capture all the myriad types of expert opinion evidence which might need to be addressed for reliability in criminal proceedings.

5.8 The practical likelihood is that most, if not all, opinion evidence scrutinised for reliability against the test in paragraph 3.6(2) would indeed be encompassed by it. However, that likelihood cannot justify a formulation which would not necessarily work for the whole of its potential range of application. In short, the reliability test must be one which can in principle be applied to anything within the range it purports to cover, even if unlikely ever to arise in practice.

5.9 In our draft Bill we have therefore opted for a test which is truly universal, but as a result it is also a little vaguer than the test described in our consultation paper. Our core reliability test, which is set out in clauses 1(2) and 4(1) of the Bill, is therefore supplemented by a number of statutory examples in clause 4(2) which demonstrate, in broad terms, some of the types of expert opinion evidence which would not be sufficiently reliable to be admitted. To put it another way, the subsection lists key justifications for ruling that expert opinion evidence is insufficiently reliable to be admitted in criminal proceedings.

5.10 The admissibility test and these examples are further supplemented by a list of lower-order factors in Part 1 of the Schedule to the Bill, drawing on the two sets of guidelines we originally proposed in our consultation paper.

5.11 The examples in clause 4(2) and the further factors listed in Part 1 of the Schedule direct the trial judge to matters which have a bearing on the question of evidentiary reliability in a particular case; but, more than that, they also explain what the reliability test means for the type of expert evidence being proffered for admission.

5.12 Importantly, in line with a provisional proposal in our consultation paper, our draft Bill directs the trial judge to consider not only the information supporting the expert's opinion evidence (for example, whether an underlying scientific hypothesis has been sufficiently scrutinised, and whether the expert has properly taken into account all relevant evidence in the instant case) but also the strength of the opinion underpinned by that information.

5.13 It will always be the particular opinion evidence proffered for admission which has to be scrutinised for reliability. The judge must therefore look at the general foundation material, the extent to which relevant case-specific matters were taken into consideration by the expert, the legitimacy and logic of the expert's reasoning process in coming to his or her opinion and whether the sort of opinion the expert

[3] Obscene Publications Act 1959, s 4(1) and (2).

wishes to give, including its strength, can be objectively justified, bearing in mind the uncertainties inherent in the foundation material.

5.14 In short:

(1) we have taken forward our provisional admissibility test, and the guidelines we originally proposed to assist in its application, but we have reformulated the test to ensure that it is truly universal;

(2) we have drawn out from our original guidelines some key higher-order examples of when expert opinion evidence is likely to be unreliable;

(3) we have supplemented our new admissibility test and those key examples with further, lower-order factors which will provide trial judges with specific guidance (where relevant); and

(4) we have ensured flexibility by ensuring that trial judges are neither bound by nor limited to the factors expressly listed in the Schedule.[4]

5.15 It bears repeating that evidentiary reliability means the reliability of relevant opinion evidence given by a qualified, impartial expert, so the court is directed to consider factors in the Schedule which, in the main, are not related to the expert witness him or herself.

5.16 The reliability test in clauses 1(2) and 4(1) of our draft Bill, the statutory examples in clause 4(2) and the various lower-order factors in the Schedule describe matters which have a bearing on reliability, but this does not mean that all subjective matters are irrelevant. Forensic scientific opinion evidence depends on a scientific underpinning and a subjective interpretive element. Whether the expert in question has the general interpretive skill required to provide expert evidence is governed by clauses 1(1)(b) and 2; but whether that skill has been properly applied in the instant case, so as to draw reliable inferences and reach reliable conclusions, must be addressed under the reliability test, against objective standards.[5]

5.17 **We therefore recommend for criminal proceedings:**

(1) a statutory provision in primary legislation which would provide that expert opinion evidence is admissible only if it is sufficiently reliable to be admitted;[6]

[4] Clause 4(3) of our draft Bill provides that the court must have regard to "such of the generic factors set out in Part 1 of the Schedule as appear to the court to be relevant" and "anything else which appears to the court to be relevant".

[5] See cl 4(2)(e) of the draft Bill and para 1(h) of Part 1 of the Schedule.

[6] Draft Bill, cl 1(2). As explained already, cl 1(3) provides that if there is a doubt as to whether an expert's evidence is evidence of fact or opinion evidence, it is to be taken to be opinion evidence.

(2) a provision[7] which would provide our core test that expert opinion evidence is sufficiently reliable to be admitted if[8] –

(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;[9]

(3) a provision[10] which would set out the following key (higher-order) examples of reasons why an expert's opinion evidence is *not* sufficiently reliable to be admitted:[11]

(a) the opinion is based on a hypothesis which has not been subjected to sufficient scrutiny (including, where appropriate, experimental or other testing), or which has failed to stand up to scrutiny;

(b) the opinion is based on an unjustifiable assumption;

(c) the opinion is based on flawed data;

(d) the opinion relies on an examination, technique, method or process which was not properly carried out or applied, or was not appropriate for use in the particular case;

(e) the opinion relies on an inference or conclusion which has not been properly reached;[12]

(4) a provision which would direct the trial judge to consider, where relevant, more specific (lower-order) factors in a Schedule to the Act and to any unspecified matters which appear to be relevant.[13]

7 Draft Bill, cl 4(1).

8 In context this means "only if", but it is unnecessary to spell it out explicitly.

9 For this aspect of the test (cl 4(1)(b) of our draft Bill), the expert's opinion should be expressed with no greater degree of precision or certainty than can be justified by the underlying material on which it depends. The material includes relevant general matters (such as scientific hypotheses) and relevant evidence in the particular case.

10 Draft Bill, cl 4(2).

11 This test is framed in this negative way to accord with the procedural provisions in cl 6.

12 This example (clause 4(2)(e) of our draft Bill) addresses the reasoning process of the expert and the use of any subjective interpretive skill (see also para 1(h) in Part 1 of the Schedule). The question whether an expert *has* the necessary interpretive skill to give an opinion is governed by the requirements of cl 1(1)(b) and cl 2; see paras 4.15 to 4.24 above.

13 Draft Bill, cl 4(3).

5.18 The requirements set out in clauses 1 and 4 of our draft Bill would apply to criminal proceedings in England and Wales;[14] and they would apply whether the expert evidence is to be given orally, in a written report or in some other way.[15]

Specific factors in the Schedule

5.19 We have already introduced our recommendation that trial judges should be provided with a single list of generic factors to help them apply the reliability limb of our proposed admissibility test. A judge would be directed to take into consideration factors which are relevant to the opinion evidence under consideration and any other factors he or she considers to be relevant.[16]

5.20 We now turn to the question of what the list of generic factors should include. A large number of individual and corporate consultees endorsed our guidelines (or guidelines of the sort we proposed); and the UK Register of Expert Witnesses told us, following their own internal consultation, that our guidelines drew broad support from the experts who responded. Nevertheless, a number of consultees took issue with some factors we included, or failed to include, in the versions we provisionally set out in our consultation paper. Five principal concerns were expressed:

(1) some consultees queried the value of peer-reviewed publications and literature without explicit reference to the quality of such publications;[17]

(2) several consultees queried or opposed the inclusion of subjective matters relating to the witnesses' expertise (such as his or her qualifications, experience and standing);[18]

(3) some consultees thought we should have included a reference to membership of a relevant professional body or reputable organisation;[19]

[14] Clause 10 of our Draft Bill provides that "criminal proceedings" means criminal proceedings to which the strict rules of evidence apply (which includes criminal trials and *Newton* hearings); see *Bradley* [2005] EWCA Crim 20, [2005] 1 Cr App R 24 at [29] and [36]. Clause 11(6) provides that the Bill, if in force, would extend to England and Wales only.

[15] Draft Bill, cl 10. The admissibility requirements in our Bill would apply in principle to an expert report even if the parties themselves were to agree to the admission of such evidence (under s 9 of the Criminal Justice Act 1967 or s 114(1)(c) of the Criminal Justice Act 2003), but the judge would be unlikely to rule against the parties in such a case.

[16] See paras 3.62 and 3.63, and paras 5.10 to 5.16 and 5.17(4) above.

[17] These consultees included Dr Malcolm Park (University of Melbourne), the Forensic Science Regulator and Professor Mike Redmayne. Some consultees queried the value of any peer review.

[18] Northumbria University School of Law's Centre for Criminal and Civil Evidence and Procedure, Gary Pugh (Director of Forensic Services, Metropolitan Police), Professor Mike Redmayne, the Society of Expert Witnesses and the Bar Law Reform Committee.

[19] The British Association for Shooting and Conservation and the Expert Witness Institute.

(4) some consultees wished to see a reference to organisational structures or the principles of "balance, logic, robustness and transparency" which underpin the operational practices of many forensic science providers;[20] and

(5) one consultee favoured a weighted hierarchy of factors.[21]

5.21 On the first point, we explained in our consultation paper that the value of peer review has often been called into question,[22] but we also took the view that it is one guiding factor, amongst others, which a trial judge should consider in the context of any purportedly scientific element underpinning an expert's opinion evidence.

5.22 This is still our view, so long (of course) as the peer-review process is credible. As the Criminal Bar Association said in their response, peer review:

> provides for a long term and objective opportunity to test and refute the theory and practice of the technique. It also evidences the proper willingness of its proponents to subject their 'project' to outside scrutiny and criticism.

5.23 The credibility of any particular peer review process was not expressly stated in our original guidelines, for we assumed (as we still do) that trial judges would be able to attach appropriate weight to this factor without explicit guidance.

5.24 On the second point, we have now expressly set out "impartiality" and being "qualified" to provide expert evidence as separate limbs in our proposed admissibility test for expert evidence, and have limited the reliability test in clause 4(1) of our draft Bill so that it requires an objective assessment of whether an expert's opinion evidence is sufficiently reliable to be admitted. This being the case, we are now satisfied that extraneous subjective factors (that is, matters relating to expertise and impartiality) can and should be removed from our reliability limb and from the factors in the Schedule to our Bill. It would serve no useful purpose if the judge were to be directed to apply separate but overlapping tests.

5.25 The approach we have adopted in our draft Bill should avoid unnecessary distractions (even more so if the subjective factors would be difficult to establish);[23] and it has brought the added benefit of shortening the list of factors.

[20] Professor Wesley Vernon (a podiatrist with a particular interest in forensic identification), Gary Pugh (Director of Forensic Services, Metropolitan Police), the UK Accreditation Service, Skills for Justice and LGC Forensics.

[21] Dr Geoffrey Morrison, a researcher on forensic voice comparisons (Australian National University) said that an objectively verifiable analysis should take precedence over subjective factors.

[22] Consultation Paper No 190, paras 4.61 to 4.63.

[23] As one of our consultees, Dr Keith JB Rix, mentioned in relation to our original reference to "standing in the community", this issue could be difficult to determine because there may be experts in senior positions with a poor reputation amongst their peers.

5.26 So, when a trial judge addresses the reliability limb of our admissibility test, he or she should focus on the validity of the material, processes and reasoning underpinning the expert's opinion evidence.[24] Subjective factors, though relevant to reliability in the round,[25] should be addressed under clauses 2 and 3.

5.27 It follows that it would not be desirable to include references to other extraneous matters such as the expert's membership of a relevant professional body or the particular organisational structures within a forensic science laboratory (the third and fourth of the five points listed at paragraph 5.20 above). A sound organisational framework may well be a factor the judge will wish to take into account in an appropriate case, and the open-ended nature of the list of factors would permit this (where relevant). However, because general organisational structures do not necessarily enhance the reliability of a particular expert's opinion evidence, and because the inclusion of such a factor could give rise to an expectation that the judge should undertake an investigation into a collateral matter which may have little bearing on the reliability of the evidence in issue, we are not persuaded that organisational structures should be expressly included in the list of factors. The judge should focus on the processes and the reasoning underpinning the particular expert opinion evidence which has been proffered for admission.[26]

5.28 On the fifth point, we see no need for a hierarchy of factors, particularly now that we have abandoned subjective factors and recognise the desirability of flexibility.[27]

5.29 When formulating the factors in our Schedule to the draft Bill, we also asked ourselves whether trial judges should be directed to consider if a judge in other proceedings had, after due enquiry, previously:

(1) admitted or excluded an opinion provided by the expert on the ground that his or her opinion was, or was not, sufficiently reliable to be admitted, or

(2) ruled that the underlying basis of the expert's opinion was, or was not, sound (to the extent required by the opinion proffered in that case).

5.30 We initially took the view that a properly articulated ruling in a previous case, following an investigation into evidentiary reliability, was something the judge applying the reliability test ought to be directed to take into consideration in a case where the same issue arises, and be given whatever weight the judge considered appropriate. We saw this as a possible way of ensuring that the same evidentiary basis of an expert opinion would not have to be re-assessed over and over again at first instance until the matter was definitively resolved by an appellate court. This approach would save time and other resources.

[24] On "validity" as opposed to "reliability", see Consultation Paper No 190, p 34, fn 51.

[25] Paragraph 2.17 above.

[26] Equally, there is no reference in our factors to the expert's membership of a professional body.

[27] Paragraph 3.50 above.

5.31 We accept that another judicial ruling, after due enquiry, is something which a trial judge may find useful when addressing the reliability of an expert's evidence proffered for admission in his or her case (depending on the facts); and we also accept that referring to a previous ruling would be a useful way of saving resources, particularly if it relates to the level of progress in a particular scientific discipline.[28]

5.32 However, we have come to the conclusion that it is unnecessary, and potentially problematic, to have a factor of this sort expressly included in the Schedule to our draft Bill. We would not wish to create any expectation that a judge should have to consider other rulings on evidentiary reliability or an expectation that a costly new system should be established to record, transcribe, store and index such rulings, particularly if many of the rulings would never be looked at again on account of their case-specific content.

5.33 No doubt a ruling on general matters which other judges would find useful is likely to be reported in a journal such as the *Criminal Law Review* or the *Journal of Criminal Law*, regardless of whether there is an explicit factor in our guidelines. Practitioners need no formal direction to encourage them to bring useful Crown Court and other first instance rulings to the attention of the wider legal community.

5.34 On balance, therefore, we have concluded that it would be best not to include an explicit factor in our Schedule in respect of other judicial rulings. Clause 4(3)(c) of our draft Bill provides that judges must have regard to anything not listed "which appears to the court to be relevant". This gives a trial judge sufficient flexibility to decide whether to consider another judge's ruling, should a transcript be available and brought to his or her attention; but there would be no expectation that the judge should have to consider another ruling, or search for any such ruling; and there would be no expectation that judicial rulings on evidentiary reliability should be routinely recorded, transcribed and reported.[29]

5.35 **In the light of the foregoing, we recommend that a trial judge who has to determine whether an expert's opinion evidence is sufficiently reliable to be admitted should be directed to have regard to:**

(1) the following factors (insofar as they appear to be relevant):[30]

[28] For our consultees' concerns on this issue, see para 3.20 (and fn 23 to para 3.17) above.

[29] A further problem arises from the difficulty of drafting a provision of this sort, as it would have to sit within an existing framework of binding precedent. That is to say, the factor would have to direct the judge to take into account other judicial rulings (where relevant) which are not binding, but exclude judgments of other courts which would in any event bind the judge. The resulting provision would have been unnecessarily complex.

[30] Draft Bill, cl 4(3)(a) and Part 1 of the Schedule to the Bill. Some of the factors in the Schedule are already required by r 33.3(1) of the Criminal Procedure Rules 2010 as matters which must be included in an expert's written report.

(a) the extent and quality of the data on which the expert's opinion is based, and the validity of the methods by which they were obtained;[31]

(b) if the expert's opinion relies on an inference from any findings, whether the opinion properly explains how safe or unsafe the inference is (whether by reference to statistical significance or in other appropriate terms);

(c) if the expert's opinion relies on the results of the use of any method (for instance, a test, measurement or survey), whether the opinion takes proper account of matters, such as the degree of precision or margin of uncertainty, affecting the accuracy or reliability of those results;

(d) the extent to which any material upon which the expert's opinion is based has been reviewed by others with relevant expertise (for instance, in peer-reviewed publications), and the views of those others on that material;

(e) the extent to which the expert's opinion is based on material falling outside the expert's own field of expertise;[32]

(f) the completeness of the information which was available to the expert, and whether the expert took account of all relevant information in arriving at the opinion (including information as to the context of any facts to which the opinion relates);[33]

[31] Rule 33.3(1)(b) to (e) of the Criminal Procedure Rules 2010 sets out some of the matters which an expert witness's written report must currently contain, including: "details of any literature or other information which the expert has relied on"; "a statement setting out the substance of all [material] facts given to the expert"; and a summary of the "findings" (following an examination, measurement or test) on which the expert witness relies.

[32] Rule 33.3(1)(d) of the Criminal Procedure Rules 2010 currently requires an expert witness to "make clear" in his or her written report "which of the facts stated in the report are within the expert's own knowledge".

[33] Factor (f) provides an expectation that the expert should be provided with the relevant contextual material, even if the emotive nature of some such information might give rise to unconscious bias (as to which, see I Dror and S Cole, "The vision in 'blind' justice: Expert perception, judgement and visual cognition in forensic pattern recognition" (2010) 17 *Psychonomic Bulletin & Review* 161). We recognise that procedures may need to be introduced in forensic scientific laboratories to ensure that tangential information which is likely to give rise to significant unconscious bias should be kept back from scientific experts, or training provided to reduce the risk of such bias, but this is not a concern we can address in our Bill. The Forensic Science Regulator has informed us that this is a problem he will be seeking to overcome. Once a protocol has been established to minimise the risk of unconscious bias, it may be necessary for factor (f) to be amended, for example by incorporating "appropriate" before "information as to the context".

(g) whether there is a range of expert opinion on the matter in question; and, if there is, where in the range the expert's opinion lies and whether the expert's preference for the opinion proffered has been properly explained;[34]

(h) whether the expert's methods followed established practice in the field; and, if they did not, whether the reason for the divergence has been properly explained; [35]

(2) approved factors, if any, for assessing the reliability of the particular type of expert evidence in question (insofar as they appear to be relevant);[36] **and**

(3) any other factors which appear to be relevant.[37]

5.36 It should be remembered that the factors in Part 1 of the Schedule do not stand alone. They must be read in conjunction with the admissibility test in clause 4(1) and the higher-order examples in clause 4(2); but, more than that, they must also be read with our recommendation that the party proffering the evidence must show that it is sufficiently reliable to be admitted in accordance with clauses 1(2) and 4(1).[38] This means that the expert wishing to give opinion evidence which is being assessed for reliability will need to provide a reasoned explanation as to why his or her opinion is sound. In tandem with factor (h), this obligation to provide a reasoned explanation would be particularly useful for expert opinion evidence which cannot be scientifically tested for reliability, or which it would not be reasonably practicable to test in a scientific way. In addition, according to Professor Nigel Eastman, a member of our working group for this project, this combination summarises "particularly well what should be the approach to medical evidence which is psychiatric in nature".

5.37 We refer to the "trial judge" in the opening words of paragraph 5.35 because we believe, as we explain below, that where the question arises in a magistrates' court it should generally be determined by a District Judge (Magistrates' Courts), who would ordinarily be expected to try the case.[39] Robust pre-trial case-

[34] This information must be included in an expert witness's written report; see r 33.3(1)(f) of the Criminal Procedure Rules 2010. It is implicit in this factor that, where an expert witness's opinion is at variance with the opinions of most experts in the field, the expert witness will be saying that the general opinion held by other experts is flawed (or, in the context of scientific evidence, that it is not scientifically valid).

[35] This factor makes the obvious point that if an expert is relying on a novel approach he or she should *explain* why an opinion founded on it is sound. This factor should not in any way be understood as a presumption against the admission of expert opinion evidence based on new or nascent developments in science and technology.

[36] Draft Bill, cl 4(3)(b) and Part 2 of the Schedule to the Bill. On this aspect of our recommendations, see paras 3.53 to 3.59 above.

[37] Draft Bill, cl 4(3)(c).

[38] For our recommendation, see para 3.88 above; for the corresponding provisions in our draft Bill, see cl 6(2) and (3).

[39] Draft Bill, cl 7(1). On the importance of the pre-trial process and the desirability of having an experienced judge who would address the pre-trial issues and try the case, see *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [204].

management will therefore be required in magistrates' courts, supported by the use of sanctions as to the payment of wasted costs, to ensure that the parties and their legal representatives properly identify the issues and give notice of any intention to challenge evidentiary reliability so that the case can be allocated to a District Judge in advance of the trial and a pre-trial hearing arranged in good time.[40]

5.38 The District Judge would ordinarily determine evidentiary reliability before the trial,[41] provide a ruling on admissibility – a written ruling, we suggest – and try the case. However, we accept that magistrates' courts should have the power to allocate the trial to a bench of lay magistrates, if it is unnecessary for a District Judge to continue with the case.[42]

5.39 Effective pre-trial case management and the real possibility of a wasted costs order being made against a dilatory legal representative or party, or both, should mean that in the vast majority of cases the magistrates' court will have sufficient notice of a prospective challenge to be able to allocate the case to a District Judge for a pre-trial hearing. Inevitably, however, there will be some late challenges. A challenge may be brought to a magistrates' court's attention for the first time at or just before the trial, or even during the trial itself. This may be due to an oversight, lost papers, confusion caused by a change of legal representative, or because of fresh information having come to light at a late stage in the proceedings. It follows that a bench of lay magistrates may on occasion be confronted with a challenge to the evidentiary reliability of an expert's opinion evidence under clause 4 of our draft Bill. In this very rare situation it may be necessary for the trial to be stopped and re-allocated to a District Judge, but this should not be an inflexible rule. On account of the particular bench's wealth of legal and non-legal experience and the nature of the evidence proffered for admission, it may be that the bench, aided by its legal adviser, is properly able to address the issue itself.

5.40 Accordingly, clause 7(3)(b) of our draft Bill provides the Criminal Procedure Rules Committee with the power to make rules which would permit a trial before a lay bench to be stopped and allocated to a District Judge (the likely course of action if a late challenge is made just before or soon after the trial starts). But clause 7(3)(a) (in tandem with clause 7(4)) also permits rules to be made which would allow a lay bench to address evidentiary reliability and hear the trial if it would be

[40] Section 19A of the Prosecution of Offences Act 1985 allows a wasted costs order to be made against a legal representative as a result of any unreasonable act or omission. Accordingly, an unreasonable failure to comply with the case-management process on the part of a legal representative would give rise to the possibility of a wasted costs order against that representative. Section 19 of the 1985 Act sets out the test for the parties themselves, requiring an "unnecessary or improper act or omission".

[41] Draft Bill, cl 7(2) and (6).

[42] The legal committee of HM Council of District Judges (Magistrates' Courts) told us, in a letter supporting our recommendations, that the District Judge determining evidentiary reliability should provide his or her ruling in writing and that he or she should try the case "where possible", save that there should be a discretion as to the subsequent allocation of the trial. Clause 7(3) to (5) of our Bill provides the Criminal Procedure Rules Committee with the power to create the necessary procedural rules.

in the interests of justice to adopt this course of action.[43] It would clearly be in the interests of justice for a lay bench to retain jurisdiction if a late challenge is made during the trial, most of the evidence has already been adduced and the magistrates are competent to deal with the challenge.

5.41 It is important to explain that we recommend that the question of evidentiary reliability be addressed in magistrates' courts by District Judges not because we believe lay magistrates would be unable to apply the reliability test, but simply because it would be more cost-effective to train only the professional judges and magistrates' legal advisers for this particular task. A bench of magistrates, assisted by its legal adviser, would always be expected to determine whether the reliability test needs to be applied and would also need to be familiar with the provisions in the Bill to the extent necessary for effective pre-trial case-management. Magistrates would be equipped to deal with these matters from their ongoing training. However, we believe it would be too costly to train all magistrates on how to determine evidentiary reliability, particularly as credible challenges to the evidentiary reliability of expert opinion evidence are unlikely to be that common in summary proceedings.[44]

A limited power to disapply the reliability test

5.42 In paragraph 3.77 above we introduced the following recommendation:

(1) criminal courts should have a limited power to disapply the reliability test so that it does not have to be applied routinely and unnecessarily;

(2) but, equally, the power to disapply must not be such that the reliability test becomes only a nominal barrier to the adduction of unreliable expert opinion evidence.

5.43 In line with the traditional adversarial approach which applies in criminal proceedings, we take the view that the party opposing the admissibility of an expert's opinion evidence on the ground of insufficient reliability should formulate a sound, reasoned argument to explain why there is a need to investigate evidentiary reliability, at least as a general rule. This would not be a burden to adduce evidence of unreliability, but it would be an obligation to explain why it would be inappropriate to presume that the opinion evidence is sufficiently reliable to be admitted.[45] If this mere burden of reasoned objection is discharged, the burden of establishing reliability to the required standard would be borne by the party wishing to adduce the evidence. This is consistent with what the Court of Appeal recently said in *Reed*:[46] "unless the admissibility is challenged, the

[43] The same approach would apply whether it is a trial following a not guilty plea or a *Newton* hearing to determine the factual basis of a guilty plea (for the purposes of sentencing); see cl 7(6).

[44] The legal committee of HM Council of District Judges (Magistrates' Courts) told us it believed that most expert evidence would not be objected to in summary proceedings.

[45] The current *laissez-faire* approach to admissibility may properly be regarded as the recognition of a presumption that expert opinion evidence is sufficiently reliable to be admitted, with an expectation that any concerns about reliability will be revealed during the trial.

[46] [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [113].

judge will admit that evidence. That is the only pragmatic way in which it is possible to conduct trials … . However, if objection to the admissibility is made, then it is for the party proffering the evidence to prove its admissibility."

5.44 We use the phrase "mere burden of reasoned objection" because the burden on the challenging party to formulate an argument as to unreliability should be set quite low. This would accord with the general principle in the law of evidence that it is for the party tendering evidence for admission to show that the necessary admissibility preconditions are satisfied, not for the party opposing the adduction of evidence to show that they are not satisfied. And we say that this burden should rest with the challenging party "as a general rule" because the trial judge should be the person with ultimate control over the proceedings. That is to say, the judge should have the power to require an investigation into evidentiary reliability even if a challenge is not made by a party, as a further safeguard against the adduction of expert opinion evidence which should not be admitted.[47]

5.45 So, in the absence of a reasoned objection from another party suggesting to the court that the expert opinion evidence might not be sufficiently reliable to be admitted, it would ordinarily be presumed that the expert opinion evidence satisfies the threshold reliability test for admissibility.[48] This weak presumption would cease to operate, however, if a party were to discharge the burden of reasoned objection and demonstrate to the court that the evidence might not be sufficiently reliable to be admitted. But as a further safeguard the judge would in all cases have a discretion to disapply the presumption, whether or not a challenge has been made by another party.

5.46 Either way, once the presumption ceased to operate it would be for the party seeking to adduce the evidence to demonstrate that it was sufficiently reliable to be admitted. The judge would direct that there be a hearing to resolve the matter, unless the matter could be properly resolved without a hearing.[49] A hearing would not need to be held, for example, if the opinion evidence was patently unreliable

5.47 The consensus amongst our consultees was that the matter should be decided at a hearing before the trial if possible, but there must always be some flexibility to ensure that the reliability of an expert's evidence could be challenged during the trial if necessary. Accordingly, a hearing before the trial, as part of the pre-trial case-management process, would be the default position, but the judge would be

[47] For similar powers in relation to the admissibility of confessions, see ss 76(3) and 76A(3) of the Police and Criminal Evidence Act 1984.

[48] If the challenging party could not discharge this burden of reasoned objection in advance of the trial, the expert opinion evidence in question would ordinarily be admitted. Exceptionally, however, the challenging party might be able to re-open the matter during the trial if new information suggesting unreliability were to come to light.

[49] Hearings to address evidentiary reliability would not necessarily be "preparatory hearings" under Part III of the Criminal Procedure and Investigations Act 1996 (as to which, see Consultation paper No 190, Appendix B).

able to hold a hearing during the trial, in the absence of the jury, if it was either necessary or appropriate in the case being tried.[50]

5.48 A hearing during the trial would be necessary if, exceptionally, new evidence came to light during a lengthy trial suggesting that the admissibility of expert opinion evidence should be investigated at that late stage. As the Crown Prosecution Service (and some other consultees) pointed out, provision must be made for the possibility that additional experts will become available or that new developments will come to light during a lengthy trial.

5.49 A hearing during the trial might be appropriate in a case where the prosecution case depends critically on one or more key, but potentially unreliable, witnesses of fact. In such a case, the trial judge might wish to see whether those witnesses would survive cross-examination before undertaking an investigation into expert opinion evidence, if that evidence is being tendered merely to support their oral evidence. We note that the Rose Committee of the Senior Judiciary referred to the fact that the relevance of expert evidence will always be fact specific, and that the trial judge will be able to assess the relevance of such evidence only during the trial.

5.50 The Rose Committee also expressed the view that a pre-trial admissibility hearing, when required by the judge, could be very valuable because the judge would have a "dry run" and, if he or she rules in favour of admitting the disputed opinion evidence, could ensure that the significance of any disagreements between experts is explained and that the experts articulate their evidence in a form understandable to a jury of lay persons. The judge would also be able to rule that only part of the expert's evidence was admissible, "thus narrowing the issues and ensuring that only reliable, sound, and understandable expert evidence went before the jury".[51] Some other consultees noted that a pre-trial hearing would provide the judge with the opportunity to analyse the evidence and ask the experts questions which he or she might be reluctant to ask in front of the jury.

[50] One or two consultees expressed concern that a pre-trial hearing could provide expert witnesses with the tactical advantage of a dry run. On a related point, see *C* [2010] EWCA Crim 2578 at [40] where the Court of Appeal stressed that pre-trial admissibility hearings "are not to be used for the ulterior purpose of cross-examining experts in advance of the trial" and explicitly directed trial judges to "ensure that this does not happen".

[51] See also *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [203] to [205] on the desirability of properly marshalling and controlling the expert evidence before the jury is sworn and on the importance of the pre-trial process and "robust pre-trial management". With regard to the importance of robust case management in the specific context of expert opinion evidence on DNA, see *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [131] and *C* [2010] EWCA Crim 2578 at [32] and [40].

5.51 Given the foregoing, and what we say in paragraph 3.77, the conclusion we have reached is that the reliability test should be applied, usually before the jury is sworn, if it *appears* to the trial judge that the opinion evidence in question *might not* be sufficiently reliable to be admitted. If the challenging party persuades the trial judge to this low threshold, it would be necessary for the party seeking to adduce the expert opinion evidence to show that it *is* sufficiently reliable to be admitted. Following a challenge, the trial judge would therefore have a limited power to decide whether or not the reliability test needs to be applied (and the judge would always have the power to apply the reliability test in a case where no challenge has been made). If a challenge is made, the reliability test would have to be applied if there is an appearance of unreliability (that is, if it appears to the court that the reliability test might not be satisfied), but otherwise the reliability test would not need to be applied.[52]

5.52 We have come to the conclusion that this approach strikes the right balance between the need on the one hand to control the admissibility of expert opinion evidence and the desirability on the other hand of ensuring that criminal proceedings are not unnecessarily delayed or rendered more costly. A limited power for the judge, and an expectation that the opposing party should formulate a reasoned argument as to unreliability, should reduce or remove concerns about the test having to be applied in cases where it would be unnecessary to enquire into the issue.

5.53 So, save for the situation where the trial judge acts of his or her own motion, the onus would be on the challenging party to enquire into the matter and prepare a reasoned argument which would put the party tendering the expert evidence to proof. The challenging party must therefore be prepared to formulate a credible argument that there are doubts about the reliability of the opponent's expert opinion evidence.[53]

5.54 For example, the opposing party could refer to the fact that the expert's underlying hypothesis has never been properly tested, or that the hypothesis has been criticised in reputable journals, or that the data generated by observation and testing are insufficient to justify the expert's proffered opinion, or that the expert's opinion is unsubstantiated "orthodoxy", and so on.

5.55 The party challenging the admissibility of an expert's opinion, and the trial judge him or herself, would of course refer to the basic criteria set out in clause 4(1) of our draft Bill, and any relevant examples or factors in clause 4(2) and the Schedule, when determining whether or not the evidence appears to be sufficiently reliable to be admitted.

5.56 **We therefore recommend the following for criminal proceedings:**

[52] See clause 6(2) and (3) of our draft Bill. These powers could come to be regarded as limited judicial discretions, just as s 78(1) of the Police and Criminal Evidence Act 1984 and s 101(3) of the Criminal Justice Act 2003 are often referred to as "discretions".

[53] In Part 7 we set out recommendations on pre-trial disclosure which would ensure that a party challenging admissibility is properly equipped to formulate an argument of this sort.

(1) there should be a presumption that expert opinion evidence tendered for admission is sufficiently reliable to be admitted, but this presumption would not apply if:

(a) it appears to the court, following a reasoned challenge, that the evidence might not be sufficiently reliable to be admitted, or

(b) the court independently rules that the presumption should not apply;

(2) if the presumption no longer applies, the court should direct that there be a hearing to resolve the question of evidentiary reliability, unless the question can be properly resolved without a hearing; and

(3) for Crown Court jury trials, the reliability hearing should ordinarily take place before the jury is sworn, but, exceptionally, it should be possible to hold a hearing during the trial in the absence of the jury.

5.57 As explained above, the court should resolve the question of evidentiary reliability, following a hearing, with reference to the test, examples and factors in our draft Bill.

5.58 Clause 6(2) of our Bill provides the implicit presumption of sufficient reliability (for the purposes of determining admissibility) and the rule that if, following a challenge, it appears to the court that a party's expert opinion evidence might not be sufficiently reliable to be admitted, the party tendering the evidence for admission must show that it is sufficiently reliable to be admitted.[54] For Crown Court cases to be tried before a jury, clause 6(4) provides a tacit presumption that the court's investigation into evidentiary reliability should take place before the jury is sworn (and an explicit rule that if the investigation takes place during the trial, the jury should not be present).[55]

5.59 There would be no obligation on the court to investigate evidentiary reliability under clause 6(2) just because a representation has been made to the court that an expert's opinion evidence is insufficiently reliable to be admitted. It would need to appear to the court that the evidence might not be sufficiently reliable to be admitted. This requirement, and the fact that clauses 4 and 6 of our draft Bill do not apply to expert evidence of fact, would limit the scope of any attempt to disrupt the criminal process by unmeritorious objections to admissibility. If an expert is simply presenting evidence of fact then it would not be possible to challenge the evidentiary reliability of that evidence under clauses 1(2) and 4. If an expert is proffering an expert opinion, then that opinion could potentially be challenged, but only if there is a sound argument for displacing the implicit presumption of reliability. If there is such an argument, then it is of course right in principle that the evidence should be scrutinised for evidentiary reliability. But if

[54] Clause 6(3) provides, in addition, that the court may disapply the tacit presumption of reliability and require the party proffering the expert opinion evidence to show that it is sufficiently reliable to be admitted.

[55] For the position in magistrates' courts, see paras 5.37 to 5.41 above.

there is no such argument, the presumption of reliability would stand (unless the court chooses to act of its own motion under clause 6(3)).

5.60 As explained in paragraph 5.39, we do not envisage any significant disruption to criminal proceedings in magistrates' courts as a result of the enhanced admissibility rules in our draft Bill. No doubt some unmeritorious defence challenges will be made in the early years, but robust pre-trial case management in tandem with the provisions in our Bill should prevent such challenges being pursued or, if they are pursued, proving successful.

5.61 We have also explained that a trial judge would be able to rely on clause 4(3)(c) of our draft Bill to consider a relevant judicial ruling in another case.[56] According to the legal committee of HM Council of District Judges (Magistrates' Courts) the written rulings of District Judges should be centrally collated so that other District Judges would have access to them when having to "meet the prevalence at certain times of particular arguments" so as to prevent inconsistent approaches by differently constituted courts and the risk of delay. We agree with this suggestion. We also agree with the following comment provided by the legal committee:

> There will be a requirement on District Judges to be alert to potential unmeritorious and time-wasting objections to expert evidence in the initial stages of the new legislation. But practice should settle fairly soon and [the] admission of expert evidence in the majority of cases will be unchallenged but with the advantage that the parties will have had to address the issues of reliability when preparing the evidence.

The onus of persuasion

5.62 In Part 3 we explained in some detail our recommendation that, where the reliability test is applied, the party wishing to adduce the expert opinion evidence should bear the burden of showing that it is sufficiently reliable to be admitted.[57] The party wishing to adduce the expert opinion evidence would need to provide the evidence and explanation necessary to support a submission that the opinion evidence the expert wishes to give is sufficiently reliable to be taken into consideration by a jury. Clause 6(2) and (3) of our draft Bill would also give effect to this recommendation.

Applying the reliability test in practice

5.63 It may assist understanding if we now provide an indication of how these rules would work in practice.

Scientific (medical) evidence

5.64 In our consultation paper, and in Part 1 of this report, we referred to the case of *Harris and others*[58] where new evidence undermined the medical view of a number of experts that a non-accidental head injury to an infant – shaken baby

[56] Paragraph 5.34 above.

[57] Paragraphs 3.79 to 3.124.

[58] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5.

syndrome – could confidently (in effect, always) be inferred from nothing more than the presence of a particular triad of intra-cranial injuries.[59]

5.65 In that case, the Court of Appeal recognised that this triad of injuries could be caused, albeit only rarely, by a minor fall or non-violent handling and held that, without more, the mere presence of the triad could not automatically or necessarily lead to a diagnosis of non-accidental head injury.[60] Previously in cases of this sort, the prosecution had been able to secure a conviction solely on the basis of an expert diagnosis founded on the triad (in tandem with what the medical experts regarded as an implausible exculpatory explanation from the accused). And yet it seems the diagnosis of a violent assault was founded on only a poor-quality database.[61]

5.66 According to the test in clause 4(1) of our draft Bill, if a party wishes to rely on a hypothesis, and provide an expert opinion based on it, it will be necessary to show that the opinion is "soundly based" and that the strength of the opinion is "warranted having regard to the grounds on which it is based". Any inference drawn by the expert must be expressed with no greater degree of precision or certainty than can be justified by the material supporting it. The onus will be on the party proffering the evidence, and the party's experts, to refer to properly conducted empirical research (testing and observing) which substantiates the hypothesis and does not undermine it. The court will then consider whether the opinion evidence the expert wishes to provide (including its strength) is sufficiently reliable to be admitted, bearing in mind the extent and quality of the research, the margins of uncertainty in the findings, the extent of the data relied on, any "known unknowns" and, in particular, whether there is a plausible, alternative explanation for the findings.

[59] Acute encephalopathy (a disorder of the brain), subdural haemorrhage (bleeding around the brain) and retinal haemorrhage (bleeding in the retinas).

[60] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 at [70], [152], [175] and [257]. See also [69]: "There remains a body of medical opinion which … whilst recognising that the triad is consistent with [non-accidental head injury], cautions against its use as a certain diagnosis in the absence of other evidence." The Court of Appeal did recognise, however, that the presence of the triad is a "strong pointer" to a non-accidental head injury. This was reaffirmed in *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [6]: "it is now commonly accepted that the triad is strong prima facie evidence of shaking". Importantly, however, strong prima facie evidence of shaking does not necessarily mean proof of shaking. In *Butler* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [84] to [118], it was recognised that a prosecution case of non-accidental injury dependent on the triad of intra-cranial injuries was seriously undermined by the fact that the injured child had completely recovered. This suggested that the triad had resulted from some other (unknown) cause. The Crown Prosecution Service has recently published updated guidance for prosecutors dealing with cases of this sort. This guidance explains that it is unlikely a charge of murder, attempted murder or assault will be justified if the only evidence against the accused is the triad of injuries; see CPS, *Non-Accidental Head Injury Cases (NAHI, formerly referred to as Shaken Baby Syndrome [SBS]) – Prosecution Approach,* http://www.cps.gov.uk/legal/l_to_o/non_accidental_head_injury_cases/ (last visited 26 January 2011).

[61] Paragraph 1.7 with fn 13 above. See also Consultation Paper No 190, fn 31 to para 2.24.

5.67 As we explained in our consultation paper,[62] and in Part 1 of this report,[63] the evidence base for the hypothesis of shaken baby syndrome when the appellants in *Harris and others*[64] were tried has been described as an inverted pyramid "with a very small database (most of it poor quality original research, retrospective in nature, and without appropriate control groups) spreading to a broad body of somewhat divergent opinion".[65] If our proposed admissibility test had been in force at the time when the prosecution was seeking to rely on the triad of intra-cranial injuries as proof of a non-accidental head injury, and the prosecution's expert opinion evidence had been challenged:

(1) the experts who wished to give opinion evidence for the prosecution based on the hypothesis of shaken baby syndrome would have been more mindful of the likely need to demonstrate the reliability of their hypothesis at a pre-trial hearing, and would therefore have conducted, or sought data from, appropriate scientific research with a view to seeking support for the hypothesis (or identifying flaws so as to refine the hypothesis);[66]

(2) the prosecution experts would have been more mindful of the need to ensure that the opinion evidence they wished to give, underpinned by the hypothesis of shaken baby syndrome, would stand up to judicial scrutiny at a pre-trial hearing to assess evidentiary reliability, moderating their opinions to the extent required by the limitations in the empirical research and any aspects of the research data which undermined the hypothesis;[67]

[62] Consultation Paper No 190, fn 31 to para 2.24.

[63] Paragraph 1.7.

[64] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5.

[65] JF Geddes and J Plunkett, "The evidence base for shaken baby syndrome" (2004) 328 *British Medical* Journal 719, quoting the conclusion of M Donohoe, "Evidence-based Medicine and Shaken Baby Syndrome" (2003) 24 *American Journal of Forensic Medicine and* Pathology 239, 241. See also D Tuerkheimer, "The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts" (2009) 87 *Washington University Law Review* 1, 12 to 14 and 17 to 18.

[66] Ideally the research would have resulted in the publication of peer-reviewed papers in reputable medical journals.

[67] In this context, the hypothesis would need to be shown to be reliable by sufficient observational data and/or simulations. There would need to be properly conducted research showing a sound correlation between the intra-cranial injuries and a non-accidental cause (from independent evidence) and demonstrating the absence of such injuries in cases where there have been accidents or congenital conditions. The stronger the expert's opinion, the greater would need to be the observational data consistent with it (and the absence of observational data inconsistent with it). We note, however, the difficulties associated with using biomechanical models to simulate the complex anatomy of an infant's brain and that the science of biomechanics is "complex, developing and (as yet) uncertain"; see *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [180] to [182].

(3) the judge would have been aware of the importance of scrutinising the experts' proffered opinion evidence for reliability in advance of the trial, with reference to the nature and extent of the empirical research underpinning shaken baby syndrome, and would have permitted the experts to give an opinion at trial only to the extent that could be justified by the research data then available;

(4) given the limited research data supporting the hypothesis, it is highly unlikely that the judge would have allowed the prosecution to advance a case at trial founded solely on expert opinion evidence that the deceased or injured infant exhibited the triad of intra-cranial injuries associated with shaken baby syndrome (and that the accused's exculpatory explanation could therefore be disregarded as untrue);[68]

(5) however, a conviction would have been possible – as it is today – on the basis of the triad of intra-cranial injuries in association with other sufficiently cogent circumstantial evidence of the accused's guilt (such as separate injuries consistent with abuse).[69]

[68] Professor Tim David (Professor of Child Health and Paediatrics at the University of Manchester) pointed out that, before *Harris* [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 a diagnosis of child abuse in non-accidental head injury cases was based on weighing up the explanation provided by the accused against the observed injuries. We accept that the plausibility of the accused's exculpatory explanation has evidential value; but, equally, the extent to which D's explanation was considered to be plausible by medical experts no doubt depended on how confident those experts were that the hypothesis underpinning a diagnosis of baby shaking was correct. William E Bache, a solicitor, told us that, in his experience: the prosecution tended to approach the same group of experts for the same opinion; only the tests which could provide evidence of an offence were conducted soon after the injury occurred; and by the time the defence was in a position to commence its own investigation, it was too late to conduct further tests which might undermine the prosecution case by suggesting an alternative cause.

[69] See *Henderson* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 and *Oyediran* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24. Conversely, the cogency of the triad as "strong prima facie evidence of shaking" would be profoundly weakened by circumstantial evidence suggesting an unknown (innocent) cause; see *Butler* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [84] to [118].

5.68 In addition, as under the law at that time, any admissible expert opinion evidence adduced by the prosecution would have been challenged in cross-examination and by the adduction of contrary expert evidence by the defence; and the judge would have provided the jury with a careful direction on how the conflicting expert evidence should be approached.[70]

5.69 In short, if the empirical underpinnings of shaken baby syndrome consisted of nothing more than a very small database taken from poor-quality research, as would seem to have been the case when the appellants in *Harris and other*s were tried, and if the trial judge's attention had been drawn to this at a pre-trial admissibility hearing, it is very difficult to believe the outcome would have been the same. The judge would no doubt have ruled that the expert opinion evidence in support of the prosecution assertion of a non-accidental injury could not be admitted unless the experts concerned were willing to modify or qualify their opinions to reflect the uncertainties associated with the hypothesis and the quality of the research supporting it. Accordingly, the judge would almost certainly not have allowed the prosecution experts to provide opinion evidence that the triad of injuries permitted a certain diagnosis of non-accidental injury.

5.70 For scientific opinion evidence, the underlying evidence supporting the hypothesis and the chain of reasoning underpinning the opinion would always need to be scientifically valid; but the required extent to which there has been scientific research and the required extent of the corroborative data supporting a hypothesis will depend on the nature and strength of the opinion and the extent to which it is qualified.

Non-scientific evidence

5.71 Our new reliability test would not, however, be limited to expert opinion evidence which is based on evidence of a scientific nature. It may be that our test will occasionally need to be applied to other types of evidence, such as a lip-reader's interpretation of what he or she has observed. So, depending on the facts, if the prosecution wishes to call a qualified lip-reader[71] who has viewed a CCTV recording of two individuals talking to each other, to give an opinion on what was said, the prosecution might need to demonstrate that the way the lip-reader examined the CCTV recording for the instant case and the way the lip-reader formulated his or her opinion from what was seen provide a sound basis for holding that that evidence is sufficiently reliable to be admitted. If the judge were to direct that the reliability test must be applied in this context, the prosecution would need to show that the lip-reader's observational methodology and assumptions were valid.

5.72 Clearly it would not always be necessary to apply the reliability test to evidence of this sort. Indeed, where a lip-reader is called to give an expert opinion, the only

[70] The need for a careful direction relating to conflicting scientific opinion evidence was recently emphasised in *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [203] and [217] to [219].

[71] That is, qualified (skilled) as required by cl 1(1)(b) and cl 2 of our draft Bill.

real issue for the court in most cases is likely to be whether or not the witness has the skill to provide such evidence.[72]

5.73 However, it might be appropriate to apply the reliability test in some cases. Factors such as line-of-sight, facial hair, regional accents and lighting may have a bearing on the reliability of a lip-reader's interpretation. If the angle of observation and the lighting were poor, and the fundamental issue is whether the observed person said just one or a few key words, then the lip-reader's evidence could be insufficiently reliable to be admitted in a given case.[73]

5.74 If a valid objection to the admissibility of a lip-reader's opinion evidence were to be raised, so as to displace the presumption of threshold reliability, it would be for the party calling the expert to show that the lip-reader's methodology, or the way the expert applied his or her skill for the instant case, provides sufficient evidence of reliability to justify his or her opinion evidence being placed before the jury.[74]

5.75 The same approach would apply to the methodology of other non-scientific experts, such as police officers called to give evidence as "*ad hoc* experts".[75] In some cases it may be necessary for the prosecution to provide results from re-enactments designed to test whether the officer's technique and assumptions provide a sufficiently reliable foundation for his or her opinion evidence.[76]

5.76 However, there are some professional, non-scientific practices which are so well established that any kind of assessment or testing, even if possible, would provide little if any additional guarantee of reliability in the round (or any further justifiable guarantee, given the cost involved) beyond that provided by the requirement to demonstrate expertise and impartiality. Within this category would fall the evidence of professionals such as some accountants, whose academic and professional qualifications, experience and reliance on generally-accepted practices would provide a sufficient guarantee in most cases.

[72] Above.

[73] In *Luttrell* [2004] EWCA Crim 1344, [2004] 2 Cr App R 31 the Court of Appeal recognised that a lip-reader was providing an interpretation (an expert opinion) on what was said and that he or she could make errors. Reference was made to factors which can increase the difficulties associated with applying this skill, including light and angle of observation. Specific reference was also made to "whether the probative effect of the evidence depends on the interpretation of a single word or phrase" (at [38]).

[74] This would not be problematic or expensive. The circumstances of the particular lip-reading incident could simply be repeated with different individuals being observed saying different things. The results would show whether the lip-reader's general skills provide a reliable interpretation in the specific context of the instant case.

[75] In England and Wales an *ad hoc* expert is generally a police officer who has spent a substantial amount of time analysing CCTV footage and is called by the prosecution to provide an opinion on whether the person filmed is the accused.

[76] In this context there may be no particular skill beyond an eye for detail and patience, with the issue of reliability turning on the way in which the officer applied that skill in analysing and comparing images. There is no reason why the officer's methods could not be inexpensively tested for reliability when required, for example by having the officer compare a CCTV image against several individuals, to see whether or not he or she makes a correct identification.

5.77 The Rose Committee of the Senior Judiciary agreed with the comment in our consultation paper[77] that for some areas of professional non-scientific disciplines, such as forensic accountancy, where there are well-accepted practices, there would be no need for a minute consideration of the underlying basis of the expert's opinion evidence.

5.78 But of course expertise alone does not necessarily mean that an expert is providing reliable opinion evidence. If a forensic accountant's opinion is based on a technique other than a well-accepted practice, the court could decide to apply the reliability test. If evidentiary reliability can be demonstrated objectively by an assessment of some kind, then supporting evidence of that sort is what the court is likely to expect. If such an assessment is not possible or practicable, the court would nevertheless need to determine whether there are sufficient indicia of evidentiary reliability in other respects to justify the admission of the expert's opinion evidence. We have been told by a forensic accountant based in the Serious Fraud Office[78] that factors (a), (g) and (f) in Part 1 of the Schedule to our draft Bill could be material in this context. With regard to factor (g), he said that it is essential that the reports provided by forensic accountants called by the defence "highlight where in the bounds of probability their opinion lies to prevent them extolling theories which are on the extremes of possibility whilst ignoring more sound hypotheses".

5.79 Other experts whose opinion evidence (and underlying basis) might not require a minute consideration are experience-based experts on matters such as retail theft or industrial practices, or Trading Standards officers who have extensive experience of the way consumers behave and are likely to behave in the future. For such experts, we would expect the courts to focus on the admissibility requirement in clauses 1(1)(b) and 2 (expertise) and apply the reliability test only if the strength of the expert's opinion demands an enquiry, for the strength of an expert's opinion must always be warranted. Nevertheless, for such fields of expertise, it is fair to say that the expert's wealth of experience is likely to provide a sufficient guarantee of reliability in the round for much expert opinion evidence founded on it, meaning that the evidentiary reliability test is likely to be applied to such evidence only rarely.[79] The courts would also be likely to adopt the same approach to expert opinion evidence on matters such as foreign law or the public good associated with allegedly obscene publications.

5.80 Our view in this respect accords with the opinion of the Bar Law Reform Committee, who felt that the evidentiary reliability test we proposed in our consultation paper should not have to be applied to experts whose opinion

[77] Consultation Paper No 190, para 6.37.

[78] Simon Daniel.

[79] Again, there will be challenges in some cases; and judges will occasionally consider it necessary to investigate the evidentiary reliability of an expert opinion which is not founded on scientific methodology. For an interesting recent example in this context, see the Canadian case of *Abbey* 2009 ONCA 624 at [119] where the Court of Appeal for Ontario set out the factors it considered relevant to the determination of threshold evidentiary reliability when considering background evidence provided by an acknowledged expert in the culture of Canadian street gangs. The expert's opinion evidence in that case related to the possible reasons why a young male member of an urban street gang would have a teardrop tattoo inscribed on his face.

evidence is based on a wealth of experience. They gave the example of an expert on sado-masochistic relationships and police officers with extensive experience of drug pricing.

5.81 It should always be remembered, moreover, that our reliability test would be potentially applicable only if the expert witness wished to provide an expert *opinion*. It would not apply if a police officer were called to provide expert evidence on factual matters such as the sort of paraphernalia commonly used by drug-dealers. To provide such evidence the officer would simply need to prove that he or she was qualified to provide expert evidence, with reference to information such as the number of recent cases involving drugs he or she has worked on, the nature and extent of his or her involvement, the courses and seminars attended and so on. The reforms we recommend in this report would not prevent suitably-qualified police officers from providing expert evidence of fact (or, indeed, any expert opinion evidence which is sufficiently reliable to be admitted).

5.82 But if a police officer were to be called to give an expert opinion which has been challenged on the ground of insufficient reliability, the officer should be prepared to justify the admission of the opinion against the admissibility rule, examples and factors in our draft Bill. The reliability limb would probably need to be applied, for example, if a drugs officer wished to give an opinion on whether the number of ecstasy tablets found in D's possession in a nightclub was more than would be required for personal consumption. The officer would first need to show that he or she was qualified to provide an expert opinion on such matters; and, secondly, he or she would need to demonstrate that his or her opinion was based on sound empirical research and that the strength of the opinion was warranted by the data relied on and the inferences legitimately to be drawn from the data.[80]

Summary

5.83 Our proposed reforms would introduce a framework for effectively challenging the admissibility of expert opinion evidence in any appropriate case and a basis for being able properly to investigate and determine evidentiary reliability. We particularly have in mind the forensic sciences, of course, but it is possible that experts in other, non-scientific disciplines would also be required to demonstrate the reliability of their opinion evidence in some cases.

5.84 The greater the strength of the expert's opinion, the greater the likelihood that it would be challenged and, accordingly, the greater would be the onus on the expert to be prepared to demonstrate that his or her opinion evidence is warranted.[81]

5.85 Before closing this discussion, we should make one final point. Whilst in broad terms we agree with the view of one of our consultees, Dr Geoffrey Morrison,[82]

[80] Compare *Hodges* [2003] EWCA Crim 290, [2003] 2 Cr App R 15.

[81] As the General Medical Council accepted in relation to medical evidence, "the more significant the evidence is to the issues in a case, the greater the scrutiny of its admissibility should be".

[82] A researcher on forensic voice comparisons (the Australian National University).

that "forensic analyses which are more objective and whose reliability can be quantitatively demonstrated should be preferred over more subjective analyses for which it is harder to quantify reliability", we also believe that if a subjective analysis can be tested in controlled circumstances, and opinion evidence founded on such an approach can thereby shown to be reliable, there is no reason why such opinion evidence should be excluded.[83]

A POWER TO STOP THE TRIAL?

5.86 Some consultees suggested that there should be a provision for expert evidence similar to section 125 of the Criminal Justice Act 2003. This provides the trial judge with the power to stop a trial if the case against the accused is based on hearsay evidence which is so unconvincing that a conviction based on that evidence would be unsafe.

5.87 We considered this question before the consultation paper was published and decided that it was unnecessary to have a provision of this sort because the trial judge has a general power to reconsider an admissibility ruling during the trial.[84] The judge's pre-trial ruling that expert evidence is admissible may therefore be reversed during the trial and the evidence ruled inadmissible with a direction to the jury to disregard it. If this would provide an insufficient safeguard for the accused, given that inadmissible prosecution evidence has been heard by the jury, the judge would be able to discharge the jury.[85]

5.88 Given these safeguards, and bearing in mind the judge's general discretion to exclude any prosecution evidence (even if it has been admitted) on the ground that its unduly prejudicial effect outweighs its probative value, we do not believe that a provision similar to section 125 of the Criminal Justice Act 2003 is necessary in our proposed scheme for expert evidence.

ADDRESSING THE JUDGE'S RULING ON APPEAL

5.89 In our consultation paper we explained that the ruling on admissibility would be a question of law and, as such, could be examined by the Court of Appeal (or the Queen's Bench Division of the High Court, for summary proceedings).[86]

5.90 Our view was that the judge's ruling on the evidentiary reliability test, in relation to matters which are not case-specific, should be approached by the appellate court as the application of a rule, a legal judgment, rather than the exercise of a judicial discretion. This would allow the appellate court itself to investigate underlying scientific propositions and properly police the application of the reliability test, so the court would not simply decide whether the judge had acted within the parameters of what any reasonable judge could have done.

[83] We note, in line with the current *laissez-faire* approach to the admissibility of expert evidence in criminal proceedings, the Court of Appeal suggested in *Flynn* [2008] EWCA Crim 970, [2008] 2 Cr App R 20 that an expert opinion based on an auditory analysis is admissible even without the support of an acoustic (or spectrographic) analysis.

[84] *Watson* (1980) 70 Cr App R 273, 276 (Consultation Paper No 190, Part 6, fn 54).

[85] *Azam* [2006] EWCA Crim 161 at [48] (Consultation Paper No 190, Part 6, fn 55).

[86] Consultation Paper No 190, paras 6.44 to 6.46.

5.91 This is still our view. We note that the equivalent reliability test in the United States (the *Daubert* test)[87] has been criticised as insufficiently effective for criminal proceedings because, amongst other things, it provides the trial judge with a wide discretion in the determination of evidentiary reliability and that appeals in relation to the application of this test are judged against a very narrow "abuse of discretion" standard of review.[88] We believe that the assessment of evidentiary reliability in respect of matters which are not case-specific, principally questions of underlying scientific methodology, should be addressed anew in the Court of Appeal (if leave to appeal is given) not according to whether the trial judge acted within the parameters of a wide discretion.

5.92 Our policy in this respect was supported by the consultees who expressly addressed it (the Royal Statistical Society, the Bar Law Reform Committee and Associate Professor William O'Brian). Our proposed admissibility test with the examples in clause 4(2) and the guiding factors in Part 1 of the Schedule, in tandem with better training for lawyers and the judiciary and better policing by the appellate courts, should overcome the problems identified with the *Daubert* test in the USA.

5.93 But it should be remembered that the key issue on appeal will always be whether the expert *opinion* evidence in question was sufficiently reliable to be placed before a jury. Accordingly, although we refer above to a new assessment before the appeal court of matters which are not case-specific, we believe the court should adopt the same approach to the opinion evidence founded on those matters. That is to say, the appeal court should adopt a holistic approach, addressing the judge's ruling on the admissibility of the opinion evidence in the same way that it addresses the reliability of any hypothesis underpinning it.[89]

5.94 **We therefore recommend that, if challenged on appeal, the trial judge's ruling under the reliability test should be approached by the appellate court**

[87] From *Daubert v Merrell Dow Pharmaceuticals* 509 US 579 (1993), a decision on r 702 of the US Federal Rules of Evidence; see Consultation Paper No 190, paras 4.41 to 4.49.

[88] See in particular, the National Research Council of the National Academies' 2009 report, *Strengthening Forensic Science in the United States: A Path Forward*, pp 9 to 11, 95 to 98 and 106 to 110. The report points out that appeal courts will interfere with judicial rulings only if they are, in the language of England and Wales, plainly wrong or *Wednesbury* unreasonable (see fn 90 below). Other problems identified in the report are that judges and lawyers lack the expertise to deal with the *Daubert* reliability test and trial judges sitting alone do not have the time for extensive research and reflection.

[89] We now accept that it would be best to apply a unified approach, in line with the view of Judge Jeremy Roberts QC (Consultation Paper No 190, para 6.46) and Professor Paul Roberts (response to our consultation paper).

as the exercise of a legal judgment rather than the exercise of a judicial discretion.[90]

5.95 The provisions which would give effect to this recommendation are set out in clause 5 of our draft Bill.

5.96 In our consultation paper we did not propose any new avenues of appeal beyond those which are currently in place, but we asked our consultees whether they thought the question of evidentiary reliability should always be addressed before the trial and whether there should be a further basis for an interlocutory appeal.[91]

5.97 Although some consultees favoured a procedure which would allow the judge's ruling on evidentiary reliability to be challenged on appeal before the trial, the responses we received from the judiciary suggested that there should be no new avenues of appeal. Mr Justice Treacy said the proliferation of rulings capable of interlocutory appeal needs to be curbed because they distort the trial process and over-burden the resources of the Court of Appeal, and there is in any event already sufficient machinery in place to enable judges to make a pre-trial ruling capable of interlocutory appeal in appropriate cases. A similar view was expressed by the Council of HM Circuit Judges. The response we received from the Rose Committee suggested that the senior judiciary are also opposed to any new avenues of appeal.

5.98 We therefore do not recommend that there should be any avenue of interlocutory appeal beyond those which currently exist.

CLOSING COMMENTS

5.99 In our consultation paper we said that the reforms we proposed would not necessarily lead to a sea change in English criminal proceedings because (we suggested) much expert evidence which is currently admitted would continue to be admitted.[92]

5.100 A new reliability-based admissibility test would, however, put experts on notice that they would be expected to provide sufficient material to enable the trial judge, and indeed the other parties, to conclude that their opinion evidence is sufficiently reliable to be admitted.

5.101 As we explained in Part 1, the increased level of scrutiny which comes with an admissibility test focusing on the validity of the methodology and reasoning

[90] The Court of Appeal (Criminal Division) often refers to "*Wednesbury* principles" or the "*Wednesbury* test" when assessing the exercise of a judicial discretion as to the admissibility or exclusion of evidence in a criminal trial (from *Associated Provincial Picture Houses Ltd* v *Wednesbury Corporation* [1948] 1 KB 223, 229). This means that, so long as all relevant factors were considered and all irrelevant factors disregarded, the trial judge's ruling will be upheld unless it was a decision no reasonable judge would have reached. Sometimes the Court of Appeal will simply ask itself whether or not the judge's ruling was "plainly wrong" (or will use the "plainly wrong" approach alongside the traditional *Wednesbury* test; see, for example, *Hanson* [2005] EWCA Crim 824, [2005] 1 WLR 3169 at [15]).

[91] We set out the current framework in Appendix B to Consultation Paper No 190.

[92] Consultation Paper No 190, paras 6.12 to 6.16.

underpinning an expert's opinion evidence should encourage higher standards, not only amongst expert witnesses themselves but also amongst scientists and technicians working in forensic laboratories. Expert witnesses would need to ensure that their opinion evidence, particularly the strength of any opinion they wish to present, can be justified and will stand up to scrutiny if challenged.

5.102 If our proposed legislation leads to higher quality expert evidence being tendered for admission, and as a result expert opinion evidence would only rarely be ruled inadmissible, it would for that reason be a very successful reform project.

5.103 In this context it is worth mentioning that the Association of Forensic Science Providers provided a very favourable response to our consultation paper because our proposals were seen as directly complementing their own "Standards for Expert Evidence" based on the four principles of "balance, logic, robustness and transparency".[93] Similarly, the Forensic Science Regulator (whom we met) was keen to support the main thrust of our proposals because our proposed legislation would, he said, provide the missing link in the scheme of safeguards he is now trying to introduce for many forensic scientists (including expert scientific witnesses called by the prosecution).

5.104 We mention these comments because we too recognise the importance of addressing the reliability of expert opinion evidence from different directions. Greater quality control, sound organisational structures and proper accreditation would go some way towards resolving some of the problems associated with expert evidence in criminal proceedings.

5.105 There are, however, many areas of expertise which cannot realistically be regulated or do not benefit from organisational structures, for example the work of a specialist consultant in a field of medicine or an amateur lip-reader or a podiatrist with a particular interest in forensic gait analysis. Furthermore, the Forensic Science Regulator's remit does not currently extend to forensic scientific evidence tendered by the defence. There is therefore a powerful argument for addressing the problems associated with expert evidence by the application of a generally-applicable admissibility test along the lines we recommend. This approach would:

(1) complement ongoing measures designed to ensure reliability in forensic laboratories; and

(2) stimulate further measures to ensure reliability in other contexts.

5.106 Our admissibility test would ensure, first, that individuals claiming expertise are properly screened for expertise and impartiality before giving evidence and, secondly, that expert opinion evidence will be screened for evidentiary reliability before being admitted if there is a plausible basis for doubting its reliability.

5.107 We should emphasise, however, that even if a qualified expert witness's proffered opinion evidence is ruled inadmissible on the ground that it is not sufficiently supported by the available empirical research, it does not necessarily

[93] The same factors were cited by the Forensic Science Service.

mean that the expert's evidence in other respects would be inadmissible. The expert might simply have to revise his or her original opinion in the light of the opponent's challenge and the judicial enquiry, and so present an opinion which is less firm than the opinion he or she originally intended to present.

5.108 Accordingly, a prosecution expert's evaluative opinion that a particular fact is strong evidence of the accused's guilt may be inadmissible on the ground that *that* opinion is not warranted by the available data; but the same expert may be permitted to give a different opinion, for example that the fact provides weak or moderate support for the prosecution case.[94]

5.109 The key point is that, if our proposals are taken forward, the jury will only be permitted to hear expert opinion evidence which can be properly substantiated, and the stronger the expert's opinion is, the greater will be the necessary degree of substantiation.

5.110 Nor should it be assumed or thought that the difficulties experienced in the United States, where expert opinion evidence is challenged on the ground of insufficient reliability, are likely to arise in England and Wales under our proposed scheme.[95] Our recommendations are positively different in a number of ways from the approach used in jurisdictions which apply the "*Daubert*" test implied into rule 702 of the US Federal Rules of Evidence.[96]

5.111 First, our draft Bill sets out the fundamental criteria for determining the reliability of expert opinion evidence, with reference to the underlying foundation material and the strength of the opinion based on it,[97] but it also supplements these criteria by directing the judge to consider a number of examples and factors which can affect the reliability of an expert's opinion in a given case.[98] Judges will have the necessary guidance to determine evidentiary reliability.

5.112 Secondly, the Judicial Studies Board will provide trial and appeal judges with practical training in how to assess the reliability of expert opinion evidence in

[94] The Court of Appeal has accepted that in some contexts an expert may provide an evaluative opinion based on a progressive scale, reflecting the likelihood of a match; see, for example, *Atkins* [2009] EWCA Crim 1876, [2010] 1 Cr App R 8 (facial mapping) and *T* [2010] EWCA Crim 2439 (footwear analysis). In *T*, however, the Court of Appeal took the view (at [95]) that whilst a footwear analyst could in "appropriate cases use his [or her] experience to express a more definitive evaluative opinion" than the mere observation that a scene-of-crime mark "could have been made" by D's shoe – eg where there was "an unusual size or pattern" (at [74]) – no mathematical formula should be used to determine that opinion because "there are far too many variables and uncertainties in the [underlying] data" (at [85]). The court also took the view that in some cases a footwear analyst would be able to go no further than provide an opinion that D's shoe "could have made the mark" (or "could not have made the mark"). With respect, however, we doubt whether an opinion that D's shoe "could have made the mark" would provide the jury with enough assistance to justify the admission of the evidence; and we also query the court's view (at [73]) that an opinion of this sort would enable "a jury better to understand the true nature of the evidence than the … phrase 'moderate … support'".

[95] See fn 88 above.

[96] Consultation Paper No 190, paras 4.41 to 4.49.

[97] Clause 4(1).

[98] Clause 4(2) and (3) and the factors in Part 1 of the Schedule.

practice, with reference to the test and factors in our draft Bill. Armed with the guidance provided in our draft Bill, trial judges in England and Wales will be properly equipped to address evidentiary reliability.[99]

5.113 Thirdly, the Court of Appeal will properly police the application of the test, by approaching its assessment of the trial judge's performance not on the basis that it is the exercise of a broad discretion governed by "*Wednesbury* principles", but on the basis that the judge's ruling is a judgment to be assessed according to whether or not it is right. This will encourage a more critical approach to expert opinion evidence at first instance, with reference to the relevant criteria in the draft Bill, and it will ensure proper scrutiny on appeal.[100]

5.114 Fourthly, it will be seen in Part 6 that we are recommending a facility which would allow the trial judge to call upon additional expertise to assist him or her in the determination of evidentiary reliability in exceptionally complex cases. In addition, in Part 7 we recommend a number of changes to the Criminal Procedure Rules 2010 which would ensure that the judge has all the relevant material he or she needs to determine whether a party's proffered expert opinion evidence is sufficiently reliable to be admitted. These changes would also provide the parties with the relevant information they need to make submissions to the judge on evidentiary reliability, providing a further assurance that all relevant material will be taken into consideration.

5.115 We close this explanation of our proposed reliability test by emphasising once again the importance of training, both for lawyers and the judiciary, and the need for a more proactive, enquiring approach to expert opinion evidence in criminal proceedings. We fully endorse what the Criminal Cases Review Commission had to say about this:

[99] We do not therefore agree with the suggestion, predicated on data taken from the USA, that some trial judges would not be able to understand and apply the evidentiary reliability test in practice. The suggestion was recently made by J Hartshorne and J Miola in "Expert evidence: difficulties and solutions in prosecutions for infant harm" (2010) 30 *Legal Studies* 279, 292 to 293. We note, however, that the authors could also see "the obvious benefits that the introduction of the Commission's proposed gate-keeping test would bring to prosecutions for infant harm" and they favoured "a gate-keeping test that vests the court with the responsibility for determining whether expert evidence should be admitted" (p 291).

[100] Compare J Hartshorne and J Miola, "Expert evidence: difficulties and solutions in prosecutions for infant harm" (2010) 30 *Legal Studies* 279, 292, referring to the "significant subjective factor" in r 702 of the US Federal Rules of Evidence and the concomitant risk in the United States "of differing results depending on the idiosyncrasies or predisposition of the trial judge". (The authors justify their concern with reference to decisions made under the *Frye* "general acceptance" test.)

> Advocates who obtain, call and challenge expert evidence, and the judges who preside over the cases in which such evidence is deployed, must be encouraged to develop an approach of constant scrutiny throughout the entire trial process in order to ensure that the problems [associated with such evidence] can be identified and addressed in any individual case … . The improved training of solicitors, counsel and judges could by itself do much to reduce the risk of miscarriages as a result of inaccurate or misleading expert evidence.[101]

[101] On training for lawyers, see fn 45 to para 1.43 above.

PART 6
COURT-APPOINTED EXPERTS

INTRODUCTION

6.1 One of the issues we considered in our consultation paper was whether a Crown Court judge, for a trial on indictment, should be given a new statutory power to appoint an independent expert to provide the judge with assistance and guidance when addressing the question of evidentiary reliability.[1] We took the view that an independent expert of this sort would be able to provide the judge with valuable help when determining the evidentiary reliability of especially complex scientific (or purportedly scientific) evidence in advance of the trial.[2]

6.2 We suggested, but did not formally propose, that a Crown Court judge should have this power; but we also suggested that it should be used only exceptionally, to ensure that there would be no general lengthening of criminal proceedings or increase in costs. Nevertheless, we also expressed the view that, in cases where a judge made use of this power, time and other resources might be saved during the trial because a party's expert witness could be prevented from giving unreliable opinion evidence.

6.3 We thought it would be justifiable to appoint an independent expert only if a party's proffered opinion evidence was complex evidence of a scientific nature and it would not be reasonable to expect a judge to determine the question of evidentiary reliability without assistance.[3] We suggested that a court-appointed expert could be selected from a list prepared or identified by the parties or in such other manner as the court might direct.

6.4 We emphasised that the question whether a party's expert opinion evidence was sufficiently reliable to be admitted would in all cases be one of law for the judge to determine. So, although the trial judge would treat with the greatest of respect the views of the court-appointed expert, the final ruling on the question of reliability and therefore admissibility would be for the judge alone.

6.5 In this report we have set out our recommendations that there should be a new statutory admissibility test with an evidentiary reliability limb and a list of factors to help judges apply it. We believe it is likely that the judiciary, when seeking to apply the reliability test, will occasionally need additional expert assistance, possibly in relation to fields such as psychology, psychiatry and statistical

[1] By an "independent" expert we simply mean an expert witness called by the judge rather than by a party. All expert witnesses have an overriding duty to give objective, unbiased evidence, so in truth all expert witnesses are independent witnesses for the court. As explained in paras 4.26 and 4.27 above, we have brought the overriding duty into cl 3(1) and (2) of our draft Bill.

[2] Consultation Paper No 190, para 6.67.

[3] Consultation Paper No 190, paras 6.65 to 6.71. Because we originally proposed that there should be two different bodies of guidelines to assist trial judges in their determination of evidentiary reliability, we also suggested that a court-appointed expert might be able to help the judge decide which guidelines should apply.

analysis. His Honour Judge Jeremy Roberts QC, a very experienced Old Bailey judge, told us the following:

> Although the need for a court-appointed expert will very rarely arise, it seems clear that there may from time to time be cases in which the judge cannot make the necessary decision without additional information over and above that provided by the two sides. Where that is the case, the interests of justice strongly favour a system by which the judge can obtain that information from an independent expert: otherwise there will be a real danger of an erroneous decision being made … .

6.6 In its response to our consultation paper, the British Psychological Society thought that it would be useful for judges to have the power to call upon an independent expert in cases involving psychological evidence; and, similarly, the Royal College of Psychiatrists suggested that the judge might require help from "expert statisticians and [experts] in scientific methodology as applied to mental health".

6.7 Our original suggestion that Crown Court judges should be given a limited power to appoint an independent expert, to assist in a pre-trial determination of evidentiary reliability, would not have been a radical change in the law, but it would have been a new power. We say this because the criminal courts already have a common law power to call a witness of fact during a trial, if it is in the interests of justice to do so,[4] and the inherent flexibility of the common law would presumably permit a Crown Court judge to call an expert witness to assist in the determination of evidentiary reliability as a matter bearing on admissibility.

6.8 There is no case law to confirm this broad interpretation of the common law power; and when we wrote our consultation paper we were unaware of any case where the common law power had been used to call an expert witness. However, we have since been told by the UK Register of Expert Witnesses that judges have used their common law power to call expert witnesses during criminal trials, albeit only very rarely.[5]

6.9 We are still unaware of any occasion where a criminal court has called an expert to help in a pre-trial determination of evidentiary reliability, as a matter bearing on admissibility, but this is hardly surprising. There are several reasons why we say this.

6.10 First, given the current *laissez-faire* approach to the admissibility of expert opinion evidence in criminal trials, there has until recently been very little authority for the view that a trial judge should enquire into evidentiary reliability as a matter bearing on admissibility.[6]

[4] *Roberts* (1985) 80 Cr App R 89; *R v Haringey Justices ex parte DPP* [1996] QB 351.

[5] Following a request we made to the UK Register, the Editor, Dr Chris Pamplin, kindly emailed over 3,200 expert witnesses asking them whether they had ever been called by a criminal court to provide expert evidence. Five experts replied that they had.

[6] For recent developments, see paras 2.14 and 2.15 above.

6.11 Secondly, on account of the adversarial nature of criminal proceedings in England and Wales, it is reasonable to assume that many trial judges may be reluctant to enter the arena by using a common law power to call for additional expert opinion evidence in the absence of an explicit authority permitting this, whether the power would be exercised during the trial or before the jury is empanelled.

6.12 Thirdly, trial judges are in any event unlikely to know which expert to appoint, where there is a range of expertise on a matter, or how to go about finding a suitably-qualified individual.

6.13 So, although the statutory power we suggested would not have changed the law in any radical sense, it would have been a change, and in our view a positive development. The courts would have had an explicit statutory power, replacing the common law in this specific context, and this would have encouraged trial judges to appoint independent experts to help them determine evidentiary reliability when they really needed such help. But the statutory power to appoint an independent expert would have been restricted in the way described above, to ensure that it would be used only when necessary and so guard against proceedings generally becoming longer or more expensive.

6.14 Before setting out the views of our consultees, and addressing the possible problems associated with a new scheme for appointing independent experts, we think it would be helpful if we first described how a court-appointed expert would provide his or her evidence and how the interests of the parties would be protected during a hearing – nearly always pre-trial – on evidentiary reliability.

THE PRE-TRIAL HEARING

6.15 Before any hearing, there would be disclosure of the various experts' reports[7] and these would be sent to the court-appointed expert along with an explanation from the judge as to the issue or issues to be addressed at the hearing and the court-appointed expert's role.

6.16 The court-appointed expert would also be provided with the information on which the challenged expert opinion evidence is founded[8] and the judge would direct the court-appointed expert to provide the parties and the judge with a written report, in advance of the hearing, setting out his or her preliminary view.[9] Any further evidence a party might wish to adduce at the hearing to counter the court-appointed expert's preliminary view would also need to be disclosed before the hearing, with the court-appointed expert being given sufficient time to consider the evidence and any objections to that preliminary view.

[7] Under r 33.4 of the Criminal Procedure Rules 2010.

[8] See paras 7.21 and 7.37 below.

[9] Judge Jeremy Roberts QC told us that a report from the independent expert would be desirable for two reasons. First, it would give the parties prior notice of any additional material which ought to be brought to the attention of the judge and parties; and, secondly, it would underline the fact that the independent expert, though appointed by the court, is a witness like any other witness.

6.17 During the pre-trial hearing, which the court-appointed expert would attend, the advocate for the party seeking to adduce the challenged opinion evidence would make his or her opening submissions and call his or her expert witness or witnesses to explain why the evidence is sufficiently reliable to be admitted, and those witnesses would be subjected to cross-examination by the opposing party. The judge would also be entitled to ask those witnesses questions at any stage, in the normal way.

6.18 The opposing party's advocate would then make submissions and call expert witnesses to provide reasons why the challenged evidence is insufficiently reliable to be admitted, and they too would face cross-examination and questions from the judge.

6.19 The matters raised by the court-appointed expert in his or her written report would no doubt form the basis of some of the questions asked by the advocates, or by the judge, during examination and cross-examination of the parties' own expert witnesses.

6.20 The court-appointed expert would then provide his or her opinion evidence on the question of evidentiary reliability. The principles of natural justice and the accused's right to a fair trial would demand that the court-appointed expert should have to provide his or her opinion evidence from the witness box and that the parties' advocates should be able to ask him or her questions and make submissions to the judge on the independent evidence provided.

6.21 We envisage that the procedure in relation to the court-appointed expert's evidence would be along the following lines. The judge would first ask the court-appointed expert to confirm the contents of his or her written report, including the summary of the expert's qualifications and experience, and the judge might then go on to ask supplementary questions in the light of the evidence already presented by the parties' witnesses. The parties' advocates, acting on the advice of their expert witnesses, would then put their own questions to the court-appointed expert or raise further points for consideration. Again, it would be open to the judge to ask questions during this part of the hearing to clarify or probe points in the court-appointed expert's evidence, although the judge would no doubt be mindful of the need to ensure that the adversarial process is not unduly disrupted by his or her interventions.

6.22 Once the court-appointed expert has provided his or her evidence, the parties' expert witnesses could be recalled, if necessary, so that the judge could put further points to them. The advocates would also have the opportunity to ask their own questions about such points.

6.23 The parties' advocates would then make their closing submissions and the judge would give (or reserve) his or her reasoned ruling on admissibility. The judge would determine the question of evidentiary reliability, and therefore admissibility, in the light of all the evidence presented during the hearing, including the court-appointed expert's opinion evidence, and the submissions made by the parties.

6.24 The judge would rule on whether the proffered opinion evidence was sufficiently reliable to be admitted. If the proffered opinion evidence was not admitted, it would be open to the judge to rule on the opinion which could legitimately be placed before the jury in the light of the evidence presented during the hearing.[10]

THE VIEW OF OUR CONSULTEES

6.25 There was considerable support for our view that a Crown Court judge should be able to call upon an independent expert for exceptionally complex scientific evidence. While it is fair to say that a significant number of our consultees expressed some concern about the practical issues associated with selection, cost and transparency, most consultees nevertheless believed that the advantages of this reform measure would outweigh the perceived disadvantages.

6.26 Some of our consultees were extremely supportive of this measure. One academic lawyer said it was "absolutely vital" and another (a statistician) thought it was "an excellent proposal" because many trial judges may not be able to judge scientific reliability without assistance from an independent expert. As noted already, the British Psychological Society thought that it would be a useful power for judges to have in cases involving psychological evidence, and the Royal College of Psychiatrists suggested that the judge might require help from "expert statisticians and those in scientific methodology as applied to mental health". Similarly, the Royal Statistical Society felt that we ought to be "more supportive of a trial judge obtaining an independent expert to assist [him or her] when dealing with new issues"; the United Kingdom Accreditation Service supported independent experts for "complex scientific cases", and we were told by Simon Daniel, a Chartered Accountant in the Serious Fraud Office, that, "in the more complex cases, involving complicated financial products or accounting treatments", it could be difficult for a judge to determine the question of evidentiary reliability without a court-appointed expert.

6.27 One academic expert in forensic science[11] even went so far as to suggest that whenever forensic scientific evidence is fundamental to an issue in a criminal case the judge should call upon an independent expert for guidance, the reason being that an expert of this sort would not only be genuinely impartial but would also be able to explain the alternative possible explanations of a phenomenon (and likelihoods), particularly in the context of trace evidence. We believe such an approach would be undesirable, given the potential for disruption and increased costs it would bring, and bearing in mind the other reforms we recommend in this report.[12] We do, however, agree with the view of another consultee, Bruce Houlder QC,[13] that there could be "dangers for the criminal justice process" if judges were unable to call upon independent assistance in *some* cases.

6.28 Bruce Houlder also made the very important point that the mere existence of the power to appoint an independent expert, even if rarely used, would act as a

[10] See paras 5.107 to 5.108 above.

[11] Professor Pierre Margot (University of Lausanne).

[12] See, in particular, paras 4.25 to 4.36 above (on impartiality) and paras 7.21(2)(c) and 7.22 to 7.25 below (on alternative explanations).

[13] Director of Service Prosecutions.

deterrent against casual science, and might reduce costs in the long run as the "market" in dubious expertise falls. He summarised his principled argument for a new statutory power to appoint independent experts in the following terms:

(1) judges routinely choose between the evidence of one witness and another in making civil judgments and in some criminal cases, so they would be able to give the evidence of a court-appointed expert appropriate weight;

(2) judges are already frequently required to make judgments about factual circumstances, including matters of expertise outside their experience;[14]

(3) judges already have the power to exclude expert evidence without the assistance of an independent expert, so there can be no objection to a judge being assisted by an appropriate expert who has been cross-examined by the parties;

(4) judges in criminal cases already have the power to call evidence of their own motion, albeit a power they exercise only in cases of real need;

(5) any aberrant judgment would be open to appeal.

6.29 Importantly, the Rose Committee of the Senior Judiciary also agreed that it would be useful for the trial judge to have a power to call upon an independent expert in exceptional cases (subject to the limitations we set out in our consultation paper).[15] Mr Justice Treacy, responding separately, also supported the measure, but stressed, in line with our own view, that it should always be for the judge to determine whether assistance was needed and, if so, to make the ultimate decision on admissibility.

6.30 A large number of other consultees also expressed support for our suggested reform measure but, as mentioned above, raised practical concerns as a potential obstacle. For example, the Crown Prosecution Service agreed with our suggestion in principle, opining that the potential value of bringing in an independent expert for areas of particular complexity could be significant, but they were concerned as to how appointments would be made.[16] Another body, Forensic Access Ltd, welcomed our suggestion but argued that selection would be both critical and problematic because independent experts would need to be up-to-date and impartial, and they would need to have an understanding of the forensic process.[17] The Forensic Science Society felt that the independent expert would need to "have the highest integrity with no affiliation to either prosecution or defence". In a similar vein, Northumbria University School of Law's Centre for

[14] On judicial fact-finding in Crown Court trials on indictment, see: R Pattenden, "Pre-verdict judicial fact-finding in criminal trials with juries" (2009) 29 *Oxford Journal of Legal Studies* 1 and R Pattenden, "The proof rules of pre-verdict judicial fact-finding in criminal trials by jury" (2009) 125 *Law Quarterly Review* 79.

[15] Consultation Paper No 190, paras 6.68 to 6.71.

[16] This problem also arises when the common law power is relied on, of course.

[17] Another consultee, LGC Forensics, felt there would need to be agreement between the parties as to the independence and expert status of the appointed expert and that this might be difficult to achieve.

Criminal and Civil Evidence and Procedure felt that it would be difficult to identify an appropriate individual for developing fields; and another consultee suggested that it might be difficult to find an impartial expert for contentious medical hypotheses.

6.31 The Criminal Bar Association (CBA) supported the idea that the trial judge "should have a discretion to call upon the assistance of an independent expert … to decide upon admissibility in exceptionally difficult cases", but queried giving the parties the right to agree on an appointment. (The RSPCA also suggested that court-appointed experts should be chosen by the court without interference from either party.) The CBA instead proposed that there should be an appointments panel containing representatives of the Law Society and the Bar Council acting in accordance with a set of agreed criteria, to ensure a measure of professional agreement as to the suitability of potential appointees.[18]

6.32 We believe there is a great deal to be said for the CBA's suggestion, or something very much like it. An independent appointments panel of experienced lawyers chaired by a Circuit Judge could liaise with professional organisations such as those referred to in paragraph 6.26 above, consider possible candidates against relevant criteria – knowledge, qualifications, experience, impartiality, no appearance of partiality and no misconduct – and submit a shortlist of eminent individuals from which the judge would be able to make his or her selection.[19] This process would bring important measures of scrutiny, independence and transparency to the selection process, mitigating or removing any possible concerns there might otherwise be as to the suitability of the individual appointed or the judge's involvement in the proceedings. For example, a panel would not shortlist an expert, no matter how eminent, if he or she had only ever provided expert evidence for the prosecution and had consistently refused requests to provide expert evidence for the defence. There would be an important issue of apparent bias which would mean that his or her appointment as an independent expert would be unacceptable.[20]

6.33 Additionally, the judge would not have to rely on the endeavours and agreement of the parties. Although reliance on the parties would be considerably less complex than the scheme suggested by the CBA, we now concede that it is perhaps unrealistic to expect the parties to reach an agreement on a matter such as this. The parties would be unlikely to co-operate on the suitability of any individual or pool of individuals; and even if they were willing and able to come to a joint position, the judge would not necessarily agree on the suitability of their candidate.

[18] Unlike the CBA, the Bar Law Reform Committee had serious reservations about the suggested reform measure. The Committee expressed concern as to how the judge would make his or her choice and the danger that he or she could be seen as less impartial by becoming involved in evidential issues.

[19] We appreciate, of course, that such a scheme would depend on the availability of such experts.

[20] For the less stringent requirements for experts called by the parties, see paras 4.33 to 4.36 above.

6.34 An independent appointments panel would be far better for the trial judge for the reasons given above and also because, in the absence of any such panel, the judge would largely be left to his or her own devices. We might add that if the appointments panel were to comprise volunteers drawn from the legal profession, as we envisage, this reform measure could be implemented relatively inexpensively, with little recourse to public funds. We accept, however, that some funding would be required to cover the basic administrative involvement of the Ministry of Justice (for example, drafting correspondence and maintaining records).

6.35 Returning to the views of our consultees, the minority who opposed the idea of court-appointed experts principally cited practical objections. That is to say, they were worried that, if there were a new statutory power to appoint an independent expert witness, the benefits might be outweighed by the associated costs and difficulties. The Council of HM Circuit Judges recognised the argument for assistance for some types of case – for example, where the outcome of a case might hinge upon the interpretation of statistical evidence – but expressed concern about selection and impartiality and concluded that, on balance, these practical difficulties would outweigh the benefits. The London Criminal Court Solicitors' Association also objected on a cost-benefit basis (although they also feared that the appointed expert might decide the question of admissibility).[21]

6.36 The Academy of Experts expressed considerable unease about our suggestion because of practical concerns about a loss of transparency, selection, the parties' involvement (and right to object) and the possible cost. Questions were also raised by other consultees as to how an independent expert would be appointed, the issue of payment, the role of the parties (and whether they could object to a selection), the difficulties associated with finding some suitably qualified individuals and the selection criteria.[22]

6.37 It is worth pausing here to note that a scheme of the sort proposed by the Criminal Bar Association, in tandem with the procedure outlined above, would meet these concerns, save that, like any reform measure, there would inevitably be some cost implications.

6.38 The Criminal Cases Review Commission objected to our suggested reform measure on a different basis. They felt that the views of an independent expert could lead to entrenchment of a preliminary view that a technique is reliable, thereby stifling the need for further development; or the advice of such an expert could lead to a view that a technique is unreliable, stifling further progress of that technique for that reason. They suggested that, rather than calling on independent help, the judge should be proactive by, for example, calling for further information from the expert under examination or requesting evidence from a further expert.

[21] We do not believe that a court-appointed expert would usurp the trial judge's role, as we explained in Consultation Paper No 190, paras 6.68 to 6.69.

[22] Attributes mentioned by consultees were impartiality, integrity, being a leader in the field with up-to-date knowledge, the ability to exercise independent judgment and having both forensic and academic experience.

6.39 We agree that the trial judge should be proactive; but we doubt whether the power to call upon an independent (court-appointed) expert would stifle progress. An expert of this sort would simply provide further information and therefore assistance. It would in all cases be for the trial judge to determine admissibility and, in appropriate cases, the judge's ruling could be challenged on appeal with further expert evidence being presented. Moreover, we believe it is highly unlikely that the research endeavours of a particular scientific community would be stifled by a judicial ruling on admissibility, at least in the long term. On the contrary, we believe that a reasoned judicial ruling pointing out weaknesses in a particular methodology could go some way towards stimulating appropriate research to rectify the problem.

6.40 In any event, if we are to accept that a Crown Court judge should be able to call for evidence from a further expert, it would make sense if the expert who is called to provide such evidence is widely recognised in the field as having special knowledge and has been independently screened to ensure impartiality and no appearance of partiality. The Criminal Bar Association's suggested panel, or something like it, would undertake this screening function, acting in accordance with a set of agreed criteria to ensure the suitability and acceptability of any court-appointed expert.[23] This would be a better approach in principle than the alternative of calling for further expert evidence from one or more of the parties.

OUR REVISED APPROACH

6.41 Given the considerable support amongst our consultees for the reform measure mooted in our consultation paper, the absence of any compelling objections based on principle, and the likelihood that Crown Court judges will occasionally need assistance when assessing evidentiary reliability against our new statutory test, we now believe there should be a new statutory power to appoint an independent expert in some cases.

6.42 We have moved on from the suggestion in our consultation paper, however, because we also now believe, for reasons already given, that if assistance is to be provided the judge requiring it should be provided with a structured basis for finding and appointing an expert. This structured basis should incorporate not only measures designed to ensure that the expert is properly screened,[24] but also rules to safeguard the parties' rights and ensure transparency.

6.43 We must qualify these opening comments, however, with two important caveats. The first is that, regardless of the principled arguments for a new scheme of this sort, we should formally recommend it only if it would be effective in practice. The second caveat is that, even if it would be practicable, we should recommend it only if we believe it would be a cost-effective measure. We return to these issues below.

[23] As explained in para 6.32 above, the relevant requirements would be knowledge, qualifications, experience, impartiality, no appearance of partiality and no misconduct. On the last factor, the applicants would be considered in the same way as potential judges: minor offences (such as minor road traffic violations) do not prevent a person from holding a judicial office and they would not prevent an expert from being a court-appointed expert.

[24] Above.

6.44 In principle, then, we support the idea that there should be an independent panel (such as that proposed by the Criminal Bar Association) and we believe that measures should be incorporated into the selection process to ensure independence, transparency and the proper scrutiny of potential appointees. An expert selected by the judge from a shortlist compiled by such a panel would be able to provide disinterested, cogent assistance in a case where the judge is required to determine the evidentiary reliability of particularly complex evidence. Moreover, and just as important, the transparency and independence of the selection process would ensure that the interests of the parties are properly protected and would meet any concerns relating to the position of the judge.

6.45 We therefore believe there should be an independent, non-governmental panel of experienced legal professionals (barristers and solicitors) which would undertake the initial stage of the selection process in accordance with a set of agreed criteria. That is to say, a quorate body of available panel members, chaired by an experienced Circuit Judge, would convene when required.[25] This quorate body of panel members ("the panel") would liaise with a relevant professional body (in practice, a professional scientific or mathematical body) to create a shortlist of eminent experts in the field, screened for their impartiality, special knowledge, experience and good character.

6.46 An independent panel representing the views of prosecution and defence lawyers, and chaired by a Circuit Judge, would ensure that the interests of all parties would be protected during the initial stage of the selection process.

6.47 When the question of an appointment first arises, the trial judge would prepare a draft note to be passed to the panel identifying the problem to be resolved and setting out any specific points on which assistance was required. This draft would first be passed to the parties for their comments, and would then (either in its original form or as amended in the light of comments) go to the panel to help its

[25] We envisage a pool of potential volunteers from the legal profession, from which a number would be chosen to form an *ad hoc* panel at short notice, when required. There would need to be agreement between the Law Society and Bar Council in liaison with the Ministry of Justice to ensure that panel members are properly competent to sit as such and that due regard is paid to equality issues when selecting volunteers and sitting as a panel. We envisage that the Ministry of Justice's administrative support for the panel would be based in London, but equally we envisage that the professional membership of the panel would be spread throughout England and Wales and that *ad hoc* appointment panels derived from this pool would be able to meet outside London.

members identify suitable candidates.[26] The panel would liaise with relevant professional bodies and provide the judge with a shortlist of suitable individuals.[27]

6.48 The shortlist would include an appendix summarising the individuals' relevant attributes (including, ideally but not necessarily, an understanding of criminal proceedings and the trial process). The question of selection from the shortlist would principally be for the trial judge, but if the parties were willing to agree on a particular individual on the list, the judge would probably agree with that choice and appoint that individual. Ultimately, however, the final decision would lie with the judge. It would always be open to the judge to override the parties' wishes and appoint a different individual if he or she concluded that there was a better candidate. The individual selected would be a court-appointed, independent expert whose fee would come from the courts' central funds.

6.49 The selection criteria would be available to the parties as would be the correspondence between the panel and relevant professional bodies and the minutes recording the panel members' deliberations. The panel would set out its reasons for selecting the shortlisted experts and these too would be available to the judge and the parties. It would make sense if the parties were first asked if they might be able to agree to the appointment of a particular candidate from the list. However, if agreement proved to be impossible, the judge would notify the parties that he or she was provisionally minded to choose a particular individual from the shortlist and invite submissions or alternative suggestions from the parties; or the judge would invite the parties to make submissions for or against the shortlisted experts more generally, without first suggesting a particular individual. We envisage that preliminary matters of this sort could be resolved in writing according to a set timetable.

6.50 Given the composition and independence of the panel, the transparency of the process, and the judge's role in deciding whom to select, a submission from either party that a particular individual was unsuitable is unlikely to be well founded. Nevertheless, a party (or indeed both parties) would be able to object to a particular individual if there was a sound evidential basis for the objection and it is something the panel overlooked or to which the panel attached insufficient weight. For example, it might be that a shortlisted expert had never provided evidence for the defence but had appeared in countless cases for the prosecution

[26] Following a discussion with the parties' advocates, the judge's note would form the basis of the instructions to the court-appointed expert. These instructions would explain the nature of the party's proffered evidence, the reason why there are doubts as to its reliability warranting a pre-trial hearing, an explanation of the statutory reliability test and an explanation of the court-appointed expert's role and relevant procedure.

[27] We would expect these individuals to maintain an up-to-date *curriculum vitae* setting out their relevant qualifications, publications and academic and forensic experience. They would also have to set out facts relevant to their character (material criminal convictions, adverse disciplinary findings and the like). This information would be passed to the panel. We would ordinarily expect the panel to compile a shortlist on the papers presented to it, but it would be open to the panel to make further enquiries as appropriate. The panel would be able to provide a shortlist of one or more individuals, depending on the field and the availability (or unavailability) of suitable experts.

and the problem of apparent bias was not considered during the selection process.[28]

6.51 A new statutory power incorporating such safeguards would be a substantial improvement over the current legal position. The common law power – assuming it extends to the present situation – provides no mechanism for ensuring transparency or for ensuring that a court-appointed expert is sufficiently qualified for the role. In addition, as Judge Jeremy Roberts QC pointed out to us when referring to the common law power, many trial judges may be "worried about the mechanics of calling the witness themselves, or of being accused of 'entering the arena', or simply of 'something going wrong' and causing the trial to have to be aborted or any conviction to be quashed as being unsafe".

6.52 The process we favour in principle would be transparent; it would allow the parties to be involved by agreeing to a shortlisted candidate or objecting to a candidate; the parties would be allowed to question the independent expert witness; and the judge would treat the court-appointed expert's witness's evidence in the same way as any other witness's evidence: the judge would give this expert's evidence as much weight as he or she thinks it deserves and would be under no obligation to accept it. The parties would be able to make submissions on the suitability of the shortlisted experts and on the appointed expert's evidence. The rights of the accused and the prosecution would be fully protected.

6.53 In the light of our decision to abandon the dichotomy we originally proposed for our statutory guidelines (as between scientific and non-scientific evidence), we now accept that it would be undesirable and unnecessary to limit the field on which an independent court-appointed expert should be able to provide assistance. As a matter of practical reality, however, a Crown Court judge would be unlikely to wish to seek independent assistance on matters which do not relate to complex evidence of a scientific nature or involve complex statistical evidence, as we intimated in paragraph 6.45 above.

6.54 We do not believe a scheme of the sort we favour would give rise to further delays in criminal proceedings because the process of selection and appointment would take place in parallel with the ongoing preliminary proceedings leading up to the pre-trial hearing on evidentiary reliability. In addition, any risk of further delays could be minimised if the panel's administrative support established early links with the various professional bodies, giving those bodies the opportunity to compile a list of potential candidates who would be willing in principle to accept an appointment.

6.55 Nevertheless, consistent with the suggestion we originally outlined in our consultation paper, we still believe there should be a restriction on the power to appoint an independent expert for an admissibility hearing, even more so if the

[28] Northumbria University School of Law's Centre for Criminal and Civil Evidence and Procedure objected to the idea that the judge should be able to call upon an independent adviser on the ground there are a number of fields in which the most reputable or highly-regarded experts seem to work predominantly for the prosecution, with access to better support in terms of training, and this might create the impression of unfairness. We agree that the appearance of bias is an important consideration in this context.

appointee were to be selected from a shortlist compiled by an independent panel. There is a pragmatic reason for this approach, but it is also based on principle. We take the view that properly-trained Crown Court judges should ordinarily be able to narrow the issues and determine reliability without the assistance of a court-appointed expert, so the power to appoint should not be available for all types of case.

6.56 The pragmatic reason is the desirability of minimising the likely costs and inconvenience associated with the exercise of a statutory power of this sort. A court-appointed expert would have to be paid for his or her report and attendance in court, and a quorate body of independent panel members would need to be convened to liaise with relevant professional bodies and draw up a shortlist of suitable candidates.

6.57 Accordingly, the conclusion we have reached is that any new statutory power which would allow a judge to seek the help of an independent expert should be drawn very narrowly. The power to appoint should be available only if the complexity and the likely importance of the disputed opinion evidence are such that it would be in the interests of justice to call upon the assistance of an independent expert. According to these criteria, the assistance of a court-appointed expert would not be in the interests of justice in the vast majority of criminal cases involving expert opinion evidence, so the power would be relied on only very rarely.

6.58 This brings us to the first of the two caveats mentioned in paragraph 6.43 above. Because our modified version of the Criminal Bar Association's suggestion is undeniably more complex than the alternatives (leaving the judge to his or her own devices or calling upon the parties to agree on a compromise candidate) we decided that we should formally recommend this new scheme only if we could be confident that it would work in practice. To this end, we sought the advice of four very experienced individuals, whom we now refer to as our "advisers".[29]

THE EFFICACY OF OUR PROPOSED SCHEME

6.59 Three of our four advisers provided very positive responses on the proposals outlined above, and their workability, save that one preferred a simpler system which would depend on the parties reaching agreement on a suitable expert.[30]

6.60 Our fourth adviser set out a number of practical objections to our proposed scheme.[31] He was concerned that there would be time-consuming contests over issues such as partiality and appointment and therefore opined that the potential drawbacks associated with this scheme would outweigh the benefits. His particular concern was the likely perception that, as a result of selection from an approved list, the court-appointed expert would come with a judicial presumption of correctness (that is, the judge would be slow to disagree with the court-appointed expert's view) and the court-appointed expert would therefore be

[29] Anthony Edwards, a solicitor; Bruce Houlder QC, Director of Service Prosecutions; Edward Rees QC; HH Judge Jeremy Roberts QC.

[30] Anthony Edwards.

[31] Edward Rees QC.

perceived to be a significant adversary by one of the parties and an ally by the other.

6.61 In answer to this point, we believe the judiciary would recognise the desirability and importance of not simply deferring to the view of a court-appointed expert, particularly as the judge in the case would give a reasoned ruling on the question of evidentiary reliability, explaining why he or she considers the party's proffered opinion evidence to be sufficiently or insufficiently reliable to be admitted. As we explained in our consultation paper, the trial judge would treat with the greatest of respect the views of the expert appointed to provide assistance, but the final judgment on reliability would always remain a legal issue for the judge.[32] The judge would therefore give the court-appointed expert's opinion the weight he or she thinks it deserves, like any other item of evidence. The judge would not simply defer to the view of the independent expert.

6.62 It should also be borne in mind that the court-appointed expert would simply be appraising methodology and whether a party's expert's opinion as to an affirmative proposition is logically in keeping with the research data (and so forth) underpinning it, so the judge might allow the party's expert to give an opinion, but not the opinion originally proffered. Moreover, the reasons for the court-appointed expert's opinion would be articulated in his or her preliminary report, allowing the parties to meet any criticisms or objections by the time of the hearing, and the court-appointed expert would give oral evidence during the hearing and face cross-examination (perhaps even robust cross-examination) on his or her analysis of the situation. A party might therefore regard the court-appointed expert to be an adversary, but this is likely to be the case only where that party's expert opinion evidence is flawed and the party appreciates (or ought reasonably to appreciate) that this is the case.

6.63 We also envisage that in some cases an expert proffering a challenged opinion will value the input of a court-appointed expert and offer a revised opinion in the light of the court-appointed expert's report, resulting in a shorter pre-trial hearing on evidentiary reliability or obviating the need for any such hearing at all.

6.64 Our fourth adviser was also concerned by possible delays caused by challenges to the appointments process. We accept that there might on occasion be a delay during the pre-trial proceedings as the selection process runs its course, but we do not accept that meaningful delays would be caused by such challenges. The independent composition of the panel, the transparency of the selection process, the fact that the panel would merely provide the judge with a shortlist of suitable experts and the parties' right to lodge objections as to the suitability of anyone on the shortlist suggest there would be no significant problem in this respect. It should also be remembered that the court-appointed expert would merely be providing the trial judge with additional assistance on matters relating to expert evidence. The judge would therefore treat the court-appointed expert as a witness like any other expert witness, further undermining any objection to his or her being appointed to give evidence.

[32] Consultation Paper No 190, para 6.70.

6.65 Indeed, because of the very narrow remit of the appointments panel, the safeguards built into the selection process (including transparency and the parties' right to raise objections), the appointed expert's status as a witness like any other witness, the obligation on the judge to give a reasoned ruling on evidentiary reliability after an admissibility hearing, and, most importantly, the availability of an appeal to the Court of Appeal, the Government will no doubt wish to consider preventing challenges by way of judicial review in the High Court, whether in relation to the selection process itself or the resulting shortlist.

6.66 A judicial ruling preventing the prosecution from adducing complex expert opinion evidence, in the light of a court-appointed expert's evidence, could allow the prosecution to lodge an interlocutory appeal to the Court of Appeal, during which the court-appointed expert's opinion evidence (if accepted by the judge) would again be scrutinised.[33] Equally, a decision to exclude defence expert opinion evidence in the light of a court-appointed expert's opinion evidence could be challenged on appeal if the accused is ultimately convicted.[34]

6.67 In the light of the responses we received on the original suggestion in our consultation paper, and on the modified scheme placed before our four experienced advisers, we are satisfied that a new statutory power permitting a Crown Court judge to appoint an independent expert selected from a shortlist provided by an independent selection panel is a power which would be desirable in principle and effective in practice. We believe the selection process we favour would be a substantial improvement over the current common law position.

6.68 This brings us to the second caveat mentioned in paragraph 6.43. The question here is whether the benefits of the proposal would outweigh the potential for additional costs, inconvenience and possibly also delays which a scheme of this sort might engender. We take the view that a new appointments scheme should be recommended only if the benefits would outweigh the costs.

COSTS, INCONVENIENCE AND POSSIBLE DELAYS

6.69 Given that court-appointed experts would be relied on only very rarely, we believe the amount of money likely to be involved, in relation to the appointments process and payment of fees from the courts' central funds, would be low.[35] Nevertheless, in cases where a Crown Court judge decided to make use of the facility there

[33] See in particular s 58 of the Criminal Justice Act 2003 which provides the prosecution with a right to seek leave to appeal in respect of certain adverse rulings, whether the ruling was made before or during the trial (s 58(13)). Note also the possibility of an interlocutory appeal under s 35 of the Criminal Procedure and Investigations Act 1996 (in respect of rulings made during a "preparatory hearing" at the start of a complex, serious or lengthy case).

[34] Note also the possibility of an interlocutory appeal under s 35 of the Criminal Procedure and Investigations Act 1996 (above).

[35] We do not think that competitive tendering would be necessary, but that the panel should be permitted to fix a reasonable fee for the short-listed candidates on a case-by-case basis, in line with guidance established by the Lord Chancellor. For present purposes, however, we assume that a fixed daily or hourly rate could be set in line with the legal aid rate for the parties' experts.

could be increased costs, and possibly occasional delays, as a result of the selection process.[36]

6.70 This does not mean that there *would* be delays, however. The selection process would be undertaken alongside the conventional preliminary proceedings for complex cases of this sort, where a Crown Court judge has ordered a pre-trial hearing to address evidentiary reliability. Moreover, as we have already intimated, the pre-trial hearing on admissibility could be shorter than otherwise, or could even be rendered unnecessary, if the parties were to have advance disclosure of an independent expert's report or the trial judge were to have the benefit of a court-appointed expert's oral and written evidence. The pre-trial hearing, and the judge's enhanced knowledge and understanding gained from having the help of a court-appointed expert, could also mean that the provision of expert opinion evidence during the trial would be managed more efficiently or limited, with concomitant savings in time and costs.

6.71 In short, we do not envisage any significant lengthening of proceedings in cases of this sort or any significant additional costs being incurred by HM Courts Service, the Crown Prosecution Service or the Legal Services Commission. Nor do we believe there would be any significant additional costs for other participants in the proceedings (such as HM Prison Service, the accused and other witnesses). Additional costs and delays could result from the fact that a trial judge has ordered a pre-trial admissibility hearing on reliability; but equally the appointment of an independent expert could feasibly shorten the hearing or any subsequent trial or both.

6.72 In any event, even if there might be additional delays in some cases because of the selection and appointment process, these could be significantly shorter than the delays which might be associated with the exercise by the trial judge of his or her current common law power to find a suitable independent expert.

6.73 We accept, of course, that there would be some additional costs associated with setting up and providing administrative support for an independent selection panel. However, these costs should be low, given the limited support required and the likely rarity of the process being applied. Accordingly, such costs could probably be incorporated into an existing budget, at least in part. Indeed, given that many public servants voluntarily take on additional tasks for the benefit of their department, it is likely that the process could be run wholly or partly on the back of volunteers in the Ministry of Justice or its associated offices, using existing resources (meeting rooms, information technology support, filing and so on). Certainly we have no doubt that the standing pool of panel members, from whom the smaller *ad hoc* panels would be selected, could be drawn from volunteers in the legal profession.[37]

[36] It would take time to agree an *ad hoc* panel from the wider pool and there would need to be an exchange of information between this panel and the relevant professional bodies. Time would also need to be factored in for the involvement of the parties.

[37] The fact that an *ad hoc* panel would be compiled from a larger standing group of volunteers throughout England and Wales should mean that a small panel of this sort could be convened at relatively short notice, wherever and whenever it is needed.

RECOMMENDATION

6.74 If trial judges are to be given a new reliability test for determining the admissibility of expert evidence – in line with our recommendation in Part 5 – then it is likely that Crown Court judges will occasionally need further expert assistance for some of the myriad types of evidence tendered for admission in trials on indictment. If this is accepted, then there are really only two alternatives for a trial judge faced with determining the reliability of very complex evidence. The judge can be left to cope as best he or she can by using the general common law power; or the judge can be provided with a shortlist of eminent experts in the field who have been independently screened for suitability, giving the judge access to the best expert assistance available.

6.75 The second of these options is clearly desirable and preferable in principle. In addition, if the new statutory power to appoint were to be limited so as to be available only when really warranted, we believe a reform measure of this sort could be achieved for little additional cost and with little if any adverse impact on the length of criminal proceedings generally.

6.76 In the following paragraphs we therefore set out our recommendations for such a power, including important limitations on its availability. However, on the basis that there will be an additional start-up cost and the need for ongoing administrative support for the panel, and because the Government might wish to see whether the power is necessary – for example, by monitoring the extent to which the common law power provides an adequate alternative – the relevant clause in our draft Bill is free-standing and severable from the rest of the Bill.

6.77 The relevant clause – clause 9 – could therefore be brought into force some years after the rest of the Bill; or it could be removed if the Government concludes that the cost implications associated with an appointments panel would outweigh the additional benefits the scheme would bring. If either approach is adopted, the Court of Appeal might in due course wish to provide guidance on the availability and use of the common law power in the context of admissibility hearings on evidentiary reliability.

6.78 **Subject to those caveats, we recommend that a Crown Court judge (for a trial on indictment) should be provided with a statutory power to appoint an independent expert to assist him or her when determining whether a party's proffered expert opinion evidence is sufficiently reliable to be admitted.**[38]

6.79 **We recommend that this power should permit a Crown Court judge to appoint an independent expert only if he or she is satisfied that it would be in the interests of justice to make an appointment, having regard to:**

(a) the likely importance of the expert opinion evidence in the context of the case as a whole;

(b) the complexity of that evidence, or the complexity of the question of its reliability; and

[38] Draft Bill, cl 9(1) and (2). This power would replace the common law power in this respect, insofar as the common law power extends to the present situation (see cl 9(8)).

(c) any other relevant considerations.[39]

6.80 **We further recommend that the judge should make his or her appointment from a shortlist of individuals prepared by an independent panel of legal practitioners, chaired by a Circuit Judge, reflecting the interests of both the prosecution and the defence.**[40]

6.81 An example of another relevant consideration for the purposes of paragraph 6.79(c) might be the fact that the party challenging the reliability of expert opinion evidence has not called an expert witness to provide support for the challenge, leading the judge to conclude that he or she needs the assistance of a court-appointed expert. Alternatively, if the case is one where, exceptionally, the question of reliability has to be addressed during the trial, the judge will no doubt take into account considerations such as the likely disruption to the proceedings and the delay and distress this would cause.

6.82 Our recommended statutory power would be available only in Crown Court cases to be tried on indictment.[41] There would be no power to appoint an independent expert witness (to help determine whether a party's expert opinion evidence is sufficiently reliable to be admitted) in a magistrates' court or in a Crown Court hearing an appeal from summary proceedings.[42]

6.83 We have come to the conclusion that additional expertise will on occasion be warranted for Crown Court trials on indictment, notwithstanding the additional costs involved, because of the extremely complex expert evidence which can be presented in such cases.

6.84 The argument for additional expertise in summary proceedings is considerably weaker, and there was little support amongst our consultees for an extension of this possible reform measure to such proceedings. Only the Crown Prosecution Service suggested that magistrates' courts might benefit from the appointment of an independent expert in exceptional cases. The Justices' Clerks' Society did not put forward any similar proposal.

[39] Draft Bill, cl 9(2)(a) to (c).

[40] Clause 9(3) to (6) of our draft Bill sets out the basic framework for the creation of procedural rules to give effect to our recommendation and to remunerate court-appointed experts.

[41] Draft Bill, cl 9(1) and (8).

[42] Above.

PART 7
PROCEDURAL MATTERS

INTRODUCTION

7.1 In Part 1 of this report we set out the reasons why we believe expert evidence is a special type of evidence in criminal proceedings and why, therefore, such evidence demands special treatment beyond the rules which apply to evidence generally. Informed by our reasoning and conclusion in Part 1, we now turn to the desirability of new procedural rules which would ensure that the new admissibility requirements in our draft Bill would work effectively in practice.

7.2 The special nature of expert evidence is already recognised in primary and secondary legislation. There are currently powers to create procedural rules on the pre-trial disclosure and exclusion of expert evidence in criminal proceedings;[1] and such rules, alongside other procedural rules, are now to be found in Part 33 of the Criminal Procedure Rules 2010:[2]

(1) Rule 33.3(1) sets out the matters which an expert's report must contain if tendered for admission in criminal proceedings.

(2) Rule 33.4(1) provides that if a party wishes to adduce expert evidence in criminal proceedings, the expert evidence must be served (as an expert's report) on the other parties and on the court "as soon as practicable, and in any event … with any application in support of which that party relies on that evidence".

(3) Rule 33.4(1) also provides that, following a request, another party must be given a copy of (or a reasonable opportunity to inspect) the records of any "examination, measurement, test or experiment on which the expert's findings and opinion are based, or that were carried out in the course of reaching those findings and opinion, and anything on which any such examination, measurement, test or experiment was carried out".

(4) Rule 33.4(2) provides that, if a party seeking to adduce expert evidence does not comply with the requirements of rule 33.4(1), such evidence cannot be adduced unless all the parties agree that it should be admitted or the court gives leave for it to be admitted.

7.3 These obligations, and the potential sanction for non-compliance, apply to the defence as well as to the prosecution, representing an important deviation from the general principle that the accused is under no obligation to disclose his or her

[1] Section 81 of the Police and Criminal Evidence Act 1984 and s 20(3) and (4) of the Criminal Procedure and Investigations Act 1996 set out the powers to include in the Criminal Procedure Rules provisions which (1) require a party to make pre-trial disclosure of expert evidence which a party proposes to adduce and (2) prohibit the adduction of such evidence if that party fails to make pre-trial disclosure as required.

[2] Part 33 of the Rules is set out in full as Appendix B to this report.

evidence in advance of the trial.[3] In addition, the possibility that the court will prevent the accused from being able to adduce expert evidence under rule 33.4(2) stands in stark contrast to the sanction of an adverse inference being drawn if the accused fails to comply with his or her other disclosure obligations.[4] Rule 33.4(2) is somewhat anomalous, therefore: it provides the criminal courts with a discretion as to the admissibility of defence evidence which would otherwise be admissible (if served).[5]

7.4 The special nature of expert evidence is also recognised at common law, as we explained in Part 2. Importantly, the common law admissibility test developed to provide a guarantee that expert evidence proffered for admission is sufficiently helpful and reliable (in the round) to be taken into consideration by a jury in a criminal trial. Its only major weakness, in our view, lies in the insufficient regard it pays to the desirability of scrutinising the evidentiary reliability of expert opinion evidence.

7.5 It also bears repeating that rule 33.2 of the Criminal Procedure Rules 2010 expressly provides that an expert "must help the court to achieve the overriding objective [of the Rules] by giving objective, unbiased opinion on matters within his [or her] expertise" and that this duty "overrides any obligation to the person from whom he [or she] receives instructions or by whom he [or she] is paid".[6] Although all witnesses in criminal proceedings are expected to provide impartial evidence, it is only expert witnesses who are currently bound by an explicit obligation in secondary legislation to be objective and impartial. For ease of exposition we sometimes refer in this report to "defence experts" and "prosecution experts", but in truth there is no such thing as a defence or a prosecution expert. All expert witnesses, whether called by the defence or by the prosecution, or indeed by the court, are witnesses for the court with an overriding duty to provide objective, impartial evidence. This overriding duty, a fundamental requirement rather than a procedural issue, has been incorporated into clause 3 of our draft Bill.[7]

[3] As a general rule the defence is under no obligation to disclose the evidence on which it intends to rely, but there are exceptions. For example, if the accused is to be tried in the Crown Court on indictment, he or she must make pre-trial disclosure of the particulars of any defence of alibi (see fn 4 below). By contrast, the prosecution bears a heavy burden of pre-trial disclosure, not only in respect of the evidence it intends to rely on at trial but also in relation to any "unused" material which might reasonably undermine its case or support the defence case.

[4] For the accused's disclosure obligations in the Criminal Procedure and Investigations Act 1996, see s 5 (obligation to provide a defence statement to the prosecution, for trials on indictment); s 6A (what a defence statement must contain, including particulars of an alibi); and s 6C (obligation to disclose details of defence witnesses). Section 11(5) allows an adverse inference to be drawn from non-compliance.

[5] Section 132(5) of the Criminal Justice Act 2003 provides a similar discretion for hearsay evidence tendered for admission following non-compliance with the relevant rules in the Criminal Procedure Rules 2010.

[6] According to r 1.1(1), the overriding objective of the Rules is that "criminal cases be dealt with justly". Rule 1.1(2) sets out examples of what this requires.

[7] Subsections (1) and (2). It should be noted that this duty was imported into the Rules from the common law; see *Harris* [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 at [271] and *Bowman* [2006] EWCA Crim 417, [2006] 2 Cr App R 3 at [176].

7.6 It is the special nature of expert witnesses and the evidence they provide which informs our recommendations in this Part. We have come to the conclusion that, in addition to the existing powers in the Criminal Procedure Rules 2010, and the new admissibility test we recommend for primary legislation, there should be a number of other provisions. These additional provisions would further both the overriding objective of the Rules and our own objective in making the recommendations set out in Part 4 and Part 5, should those recommendations be taken forward.

7.7 In particular, we believe a more stringent approach to pre-trial disclosure is warranted for expert evidence so that matters bearing on the various limbs of our proposed admissibility test can be properly investigated before the trial, whether the party seeking to adduce the evidence is the prosecution or the defence.

7.8 Most of the recommendations in this Part are procedural, and for this reason would best be effected, we believe, by the creation of additional rules within the Criminal Procedure Rules 2010.

7.9 We do not therefore provide any clauses in our draft Bill for the recommendations we set out below on procedure. Our draft Bill does, however, contain a clause – clause 8 – which would extend the existing powers to make rules on matters relating to expert witnesses.[8]

CLAUSE 8

7.10 Specifically, clause 8 of our draft Bill would permit the Criminal Procedure Rules Committee to create rules requiring the parties to make pre-trial disclosure of material information relating to the admissibility of their expert evidence, even if such information, but for clause 8(2), would be protected by "litigation privilege".[9]

7.11 Litigation privilege generally protects against the disclosure of:

> - "communications between a professional legal adviser and his client or any person representing his client or between such an adviser or his client or any such representative and any other person [such as an expert witness] made in connection with or in contemplation of legal proceedings and for the purposes of such proceedings"; and

[8] The general power to make Criminal Procedure Rules has been conferred by s 69 of the Courts Act 2003. As noted already, additional powers are provided by s 81 of the Police and Criminal Evidence Act 1984 and s 20 of the Criminal Procedure and Investigations Act 1996.

[9] Reform in this context would principally if not entirely relate to the defence because, as noted in fn 3 above, the prosecution is already under an obligation to disclose the evidence on which it proposes to rely and any "unused" information which might reasonably assist the defence. See generally Part I of the Criminal Procedure and Investigations Act 1996, Parts 21 and 22 of the Criminal Procedure Rules 2010 and the Attorney General's *Guidelines on Disclosure,* www.attorneygeneral.gov.uk/Publications/Documents/disclosure.doc.pdf (last visited 3 February 2011).

- "items enclosed with or referred to in such communications and made … in connection with or in contemplation of legal proceedings and for the purposes of such proceedings, when they are in possession of a person who is entitled to possession of them."[10]

7.12 We explain our recommendations on pre-trial disclosure below. It suffices here to say that if a party – whether the defence or the prosecution – instructs an individual to provide expert evidence, and that individual reveals material information which suggests that he or she is not impartial (or credible) or is not qualified to give expert evidence, or that his or her opinion evidence might not be sufficiently reliable to be admitted, and that party persists in its desire to rely on that individual's evidence, we consider it to be right in principle that that party should disclose the information to the other parties and to the court. The alternative would be for the party to abandon that individual in favour of another expert.[11] We therefore believe a slight modification to the scope of litigation privilege is justified in this context to ensure such pre-trial disclosure.[12]

7.13 We are confident that such a modification is justifiable in principle, desirable in practice and compatible with the accused's rights guaranteed under the European Convention on Human Rights.[13]

7.14 Equally, we believe a sanction which would prevent the defence from relying on expert evidence, where the defence has deliberately refused to comply with a

[10] Section 10(1)(b) and (c) of the Police and Criminal Evidence Act 1984, reflecting the common law. The general power in s 69 of the Courts Act 2003 does not allow the Criminal Procedure Rules to displace this privilege; see *R (Kelly) v Warley Magistrates' Court* [2007] EWHC 1836 (Admin), [2008] 1 WLR 2001. Nor are the powers in s 81 of the Police and Criminal Evidence Act 1984 and s 20 of the Criminal Procedure and Investigations Act 1996 sufficiently wide to allow for the creation of disclosure obligations which would displace this privilege. For an explanation and analysis of litigation privilege generally, see C Passmore, *Privilege* (2nd ed 2006) pp 2, 40 to 48 and 143 to 265.

[11] Section 6D of the Criminal Procedure and Investigations Act 1996 would place the defence under an obligation to disclose the names and addresses of the individuals it has instructed to provide expert evidence (to deter "expert shopping"), but this provision has not yet been brought into force.

[12] For the current procedural rules on pre-trial disclosure generally, see Part 22 of the Criminal Procedure Rules 2010. The disclosure obligations specifically relating to expert evidence are set out in Part 33 of the Rules.

[13] The obligation to disclose such information would interfere with the relevant individuals' right to respect for their confidential correspondence under Article 8(1), but this would almost certainly be justified under Article 8(2). Importantly, information protected by "legal advice privilege" (covering confidential communications between the accused and his or her legal representatives) would continue to be fully protected against disclosure. According to Michael Bowes QC, who commented on a draft of this report, our "proposed limited incursion into litigation privilege (notably not into legal advice privilege) is both reasonable and proportionate, in view of the special status held by expert witnesses".

new disclosure obligation of the type just described, would be compatible with the accused's right to a fair trial under Article 6 of the Convention.[14]

7.15 However, in recognition of the desirability of interfering with litigation privilege only to the minimum extent necessary to ensure that the court and parties are properly equipped to address the admissibility of expert evidence, and given the importance of not in any way inhibiting communications between the accused and an expert or the way a defence representative instructs an expert, we have framed clause 8 of our draft Bill as narrowly as we possibly can.

7.16 Clause 8(1)(a) and (b) provides the power to make rules which would require the disclosure by a party of information relevant to the question whether expert evidence which the party proposes to adduce is admissible (by virtue of clause 1(1)(b) or (c) or (2)) or is worthy of belief; and clause 8(2) provides that such information includes information otherwise protected by litigation privilege.[15] However, clause 8(3) makes it clear that it would not be possible to make rules which would remove the protection of litigation privilege from information contained in a communication from the accused (or his or her representative) to an expert. It is highly unlikely, of course, that any such communication would contain information falling within the scope of clause 8(1), but by expressly ensuring that procedural rules cannot extend to the privileged information in such communications, the accused and his or her lawyers would not be inhibited in the way they communicate with their experts in advance of the trial. It should also be noted that any information currently protected by the accused's legal advice privilege (or privilege against self-incrimination) would continue to be protected from disclosure.

AMENDING THE CRIMINAL PROCEDURE RULES

7.17 We have explained above that the parties and the trial judge should be in a position to assess the individuals who are being called to provide expert evidence and that they should also be properly equipped to scrutinise experts' opinion evidence for evidentiary reliability. Clause 8(1)(a) of our draft Bill refers to "information relevant to the question whether expert evidence which a party proposes to adduce is admissible" by virtue of clause 1(1)(b) (expertise) or clause 1(1)(c) (impartiality) or clause 1(2) (evidentiary reliability); and clause 8(1)(b) refers to "information that might reasonably be thought capable of substantially detracting" from an expert's credibility.

7.18 Principally, we recommend amendments to Part 33 of the Criminal Procedure Rules 2010 which would require experts to include additional matters in the

[14] If the defence wilfully seeks to prevent the other parties and the court from having access to material information about an expert or an expert's evidence, a witness who has an overriding duty to the court, it is difficult to see how the defence can argue that the accused's Article 6 rights have been infringed if, as a result, that expert's evidence is excluded. We also note that there is nothing in the case of *Ensor* [2009] EWCA Crim 2519, [2010] 1 Cr App R 18 to suggest any violation of Article 6 if the defence is prevented from relying on expert evidence through deliberate non-compliance with the disclosure requirement in what is currently r 33.4 of the Criminal Procedure Rules 2010.

[15] The disclosure rules would be set out in Part 22 or Part 33 of the Criminal Procedure Rules. On information relating to an expert's credibility, see paras 7.17 and 7.36 below.

written reports they disclose before the trial, and we address this issue under the first of the following three sub-headings.

7.19 However, we also recommend amendments to the Rules which would place the parties under a new obligation to disclose certain matters in advance of the trial, and it is in this context that clause 8(2) of our draft Bill would bite.[16] We discuss this new disclosure obligation under the second sub-heading.

7.20 Under the third sub-heading we make recommendations which would build on the judges' current power in Part 33 of the Rules to direct experts to discuss the expert issues in advance of the trial.

(1) Expert reports

7.21 **We recommend that Part 33 of the Criminal Procedure Rules be amended to include the following:**

(1) a rule requiring an appendix to the expert's report, setting out –

(a) sufficient information to show that the expertise[17] and impartiality requirements[18] are satisfied;[19] and

(b) a focused explanation of the reliability of the opinion evidence with reference to the test and relevant examples and factors in our draft Bill,[20] concisely set out in a manner which would be readily understood by a trial judge,[21] along with a summary of:

(i) other cases (if any) where the expert's opinion evidence has been ruled admissible or inadmissible after due enquiry under the reliability test; and

(ii) other judicial rulings after due enquiry which the expert is aware of (if any) on matters underlying the expert's opinion evidence;

[16] Paragraph 7.16 above. The new obligation in the Criminal Procedure Rules to make pre-trial disclosure would be supported by a sanction created under cl 8(1)(c); see para 7.38 below.

[17] Draft Bill, cl 1(1)(b) and cl 2.

[18] Draft Bill, cl 1(1)(c) and cl 3.

[19] We include (a) here primarily for completeness, for these requirements are largely in the Rules already. Rule 33.3(1)(a) requires details of qualifications, experience and accreditation; and rule 33.3(1)(i) requires a statement as to the expert's overriding duty. We believe that an expert should also be able to state, as evidence of impartiality, that the courts have not previously made an adverse ruling in relation to his or her evidence on the ground of bias; but, if this is not the case, it should be sufficient if the expert simply has to inform the party instructing him or her that his or her evidence has previously been excluded on that basis. The party would then disclose that information separately; see para 7.37 below.

[20] Draft Bill, cl 1(2), cl 4 and the Schedule.

[21] By "focused" we mean that the expert would not need to provide the entire corpus of knowledge on the area but only the direct foundation material for his or her opinion.

(2) a rule requiring an expert's report to include –

(a) a statement explaining the extent to which the expert witness's opinion evidence is based on information falling outside his or her own field of expertise and/or on the opinions of other (named) experts;[22]

(b) a schedule identifying the foundation material underpinning the expert witness's inferences and conclusions;[23] and

(c) a rule that where an expert witness is called by a party to give a reasoned opinion on the likelihood of an item of evidence under a proposition advanced by that party,[24] the expert's report must also include, where feasible, a reasoned opinion on the likelihood of the item of evidence under one or more alternative propositions (including any proposition advanced by the opposing party);[25]

(3) an extension of rule 33.4(2) so that, if a party seeking to adduce expert evidence does not comply with the above requirements, the evidence would be inadmissible unless all the parties agree that it should be admitted or the court gives leave for it to be admitted.

7.22 The foregoing recommendations are largely self-explanatory and, we believe, consistent with the overriding objective of the Criminal Procedure Rules. We do however need to say something more about the proposed rule in paragraph 7.21(2)(c) on the provision of alternative probabilities or likelihoods (where feasible). We believe a rule of this sort is required for two reasons.

7.23 First, because all expert witnesses have an overriding duty to provide impartial evidence, an expert should not provide an opinion on a particular probability or likelihood favouring one party without explaining the probability or likelihood on the alternative basis advanced by the opposing party (if it is feasible to provide such an alternative). We would hope that the defence would disclose enough of the accused's case in his or her defence statement for a prosecution expert to be able to provide an alternative probability or likelihood; but, as Professor Mike Redmayne suggested to us, in the absence of an alternative defence proposition, a prosecution expert should at least be explicit about what alternative hypotheses he or she has considered and address the likelihood of the evidence occurring under those hypotheses.

[22] At present rule 33.3(1)(d) requires the expert to explain which of the facts stated in his or her report are within his or her own knowledge.

[23] At present rule 33.3(1)(b) to (c) requires details of any literature or other information relied on and the "substance of all facts given to the expert which are material to the opinions expressed". As explained already, for the purposes of the reliability test, the expert would not need to provide the entire corpus of knowledge on the area but only the direct foundation material for his or her opinion.

[24] That is, the likelihood that the item of evidence in question (say, a particular injury) would occur under that proposition.

[25] That is, the likelihood that the item of evidence in question (say, a particular injury) would occur under that alternative proposition.

7.24 Secondly, a number of our consultees specifically argued for a requirement along these lines so that any likelihood or probability an expert provides for the party who called him or her could be seen in its proper context. The Association of Forensic Science Practitioners, having cited their Standards for Expert Evidence based upon the four principles of "balance, logic, robustness and transparency", proposed that forensic scientific experts should provide evidence that is balanced in that they consider both the prosecution and the defence propositions; and they suggested that the alternative propositions should be made apparent to the expert to give him or her sufficient notice for proper consideration and evaluation.[26] Similarly, the Royal Statistical Society said:

> In the evaluation of evidence at least two propositions need to be considered. In the absence of a defence proposition, an alternative could be provided by the evaluator such as "the opposite of the prosecution proposition". The role of probabilistic reasoning in the law is to enhance the procedure for the evaluation of evidence under each of two propositions, that of the prosecution and that of the defence.[27]

7.25 Dr Phil Rose (of the Australian National University) argued that the alternative probability should be given on two separate grounds: first, because it is a necessary guarantee of impartiality; and, secondly, because, in relation to "identification-of-the-source evidence", the expert should be able to say how probable the evidence is under both the prosecution and defence hypotheses (as to how the evidence came to be where it was found), for if only one probability is given under one hypothesis the opinion evidence is of "no use".[28]

7.26 A related point made by the Bar Law Reform Committee was that an expert should address opposing views in his or her report and add references to it in his or her list of source material. Similarly, Adam Wilson (of Sheffield Hallam University) argued, amongst other things, that experts should be trained to identify matters which support or undermine their propositions.

[26] An expert called by the defence should know the nature of the prosecution case in any event, given the prosecution's pre-trial disclosure obligations. An expert called by the prosecution would no doubt receive from the prosecution the accused's defence statement (if available) and the expert reports on which the defence intends to rely.

[27] The Society added the following comment: "A vital consideration in the assessment of reliability is that the validation should go wider than just the technique – the court (and, prior to that, the scientist) needs to assess whether there are sufficient data, knowledge and understanding to assign robust likelihoods to the evidence, under the assumptions of the [competing] propositions … presented."

[28] See also C Aitken and F Taroni, "Fundamentals of statistical evidence: a primer for legal professionals" (2008) *International Journal of Evidence and Proof* 181, criticising Professor Sir Roy Meadow's statistic of one in 73 million (in *Clark* [2003] EWCA Crim 1020, [2003] 2 FCR 447, para 1.5 above) for two natural "cot death" incidents in a family on the ground that, even if the figure was correct, the alternative likelihood of a double child murder in the family should also have been given for a relative assessment, for in the absence of that alternative "the figure has no significance or relevance". A similar point was made by the Forensic Science Service.

(2) Other pre-trial disclosure

7.27 A number of our consultees advocated greater pre-trial disclosure obligations (for the defence) in relation to expert evidence.[29] The Forensic Science Regulator went further, suggesting that the defence should disclose reports prepared by experts who are not called to testify so that prosecution witnesses would not be ambushed by the use of the material in such reports. On this specific point, there are several reasons why we believe that the reports prepared by defence experts who are not called as witnesses should not be disclosed.

7.28 First, given the presumption of innocence, the concomitant obligation on the prosecution to prove its case beyond reasonable doubt and the obligation on the prosecution to demonstrate that the admissibility criteria for its expert evidence are satisfied, we believe the onus should continue to be on the prosecution expert witnesses to be prepared to justify their own opinion evidence (in terms of admissibility, reliability and weight) without the assistance of the defence. Nor should we overlook the fact that an undisclosed expert report is protected by litigation privilege and may contain matters adversely affecting the accused's defence, potentially engaging his or her privilege against self-incrimination. The justifications for compelling pre-trial disclosure of expert evidence the accused wishes to rely on do not apply in relation to expert evidence the accused will not be seeking to adduce.

7.29 Secondly, we believe the new admissibility test we are proposing, in tandem with relevant organisational structures, will encourage greater care on the part of prosecution expert witnesses to ensure that any opinion evidence they provide will stand up to forensic scrutiny, thereby reducing the risk that they will be ambushed by defence counsel armed with an undisclosed report.

7.30 Thirdly, we believe the suggestion that the defence should disclose such reports would be unworkable. The defence could simply discuss the prosecution experts' reports with a defence expert and obtain the material necessary for effective cross-examination without commissioning a formal report. In some cases the defence expert could support the defence advocate's cross-examination of prosecution experts by providing him or her with expert advice during the course of the trial.

7.31 Fourthly, there is already legislation in place which could discourage the defence from approaching experts with a view to obtaining reports which would never be disclosed. If section 6D of the Criminal Procedure and Investigations Act 1996 is brought into force, and supported by an appropriate sanction, the prosecution would be given the names and addresses of experts the defence has instructed but decided not to call. Because there is "no property in a witness", the police might even approach those individuals as possible experts for the prosecution.[30]

[29] For the prosecution's current disclosure obligations, see fn 9 above.

[30] In practice, a conflict of interest would no doubt prevent many such experts from being able to give evidence for the prosecution. Certainly such experts would not be able to reveal or rely on matters relating to their previous instructions from the defence, because litigation privilege would continue to protect such communications.

7.32 With regard to disclosure in other respects, Bruce Houlder QC[31] argued that an improved disclosure regime is "not only desirable but necessary"; the General Medical Council felt that there should be complementary measures regarding disclosure to assist in the effective screening of an opponent's experts; the Forensic Science Society suggested a pre-trial disclosure process which would allow all parties to screen their opponents' experts in respect of matters such as qualifications, experience and extraneous conduct; and the RSPCA proposed that expert witnesses should be required to make a declaration of any interest in the proceedings.[32]

7.33 The Criminal Bar Association argued that there should be disclosure of names and dates of previous cases in which expert witnesses have given evidence and details of cases in which their evidence has been criticised. They also suggested that there should be disclosure of the material forming the foundation from which an expert's conclusions are drawn (databases, photographs, recordings and the like). Northumbria University School of Law's Centre for Criminal and Civil Evidence and Procedure suggested an obligation on all experts to include in their reports adverse findings concerning their competence or credibility.

7.34 As we have already explained, we agree that there should be an enhanced disclosure regime for expert witnesses and their evidence, regardless of which party wishes to adduce the evidence.[33] The special nature of expert opinion evidence and all expert witnesses' overriding duty to the court to provide impartial evidence militate against the validity of any principled objection to a requirement to disclose information relevant to the reliability (in the round) of expert evidence. Part 33 of the Criminal Procedure Rules 2010 already sets out disclosure obligations for expert evidence which apply to the defence and prosecution alike, and we have already recommended an extension of rule 33.3 with regard to what an expert's report should contain.

7.35 Further disclosure obligations are also warranted by the new admissibility requirements we have recommended in this report. If our recommendations are taken forward, the criminal courts will be explicitly directed by primary legislation to consider not only whether expert evidence is needed[34] but also whether the witnesses called to provide expert evidence are impartial and qualified.[35] The parties and the courts will also need to address the reliability of the experts' proffered opinion evidence and, in cases where there is a pre-trial hearing on the question, the court will need to inquire into and rule on evidentiary reliability.[36] To ensure that these statutory measures would operate effectively in practice, we believe the parties – and, more to the point, trial judges and magistrates – should have access to the information which could reasonably be said to have a bearing on these admissibility requirements.

[31] Director of Service Prosecutions.

[32] That is, any connection with any of the parties or any commercial or scientific advantage there may be to the expert in proffering his or her views.

[33] See paras 7.6 and 7.7 above.

[34] Draft Bill, cl 1(1)(a).

[35] Draft Bill, cl 1(1)(b) and (c).

[36] Draft Bill, cl 1(2) with cl 4; and see also cl 6.

7.36 Furthermore, given the special status of expert witnesses, we also believe that the defence, like the prosecution, should be expected to disclose matters adversely affecting its expert witnesses' credibility beyond evidence of bias.[37] All witnesses enjoy the right to have their private life respected under Article 8(1) of the European Convention on Human Rights, so in principle only evidence which is likely to carry substantial probative value in relation to the question of an expert's credibility should need to be disclosed.[38] A recent conviction for an offence involving untruthfulness would need to be disclosed, for example, as would the fact that the expert's work has been roundly criticised for a good reason by a judge in other proceedings. However, there should be no obligation on the defence to disclose the fact that an expert has committed a peccadillo or that an expert has been on the receiving end of patently ill-founded criticism in previous proceedings (although we appreciate the difficulties which may arise in the latter case, given that different individuals may have different views on such matters).

7.37 **We therefore recommend that the Criminal Procedure Rules should require pre-trial disclosure by the parties of the following matters to the other parties and to the court:**

(1) information relevant to the application of the expertise and impartiality tests;

(2) if requested, information relevant to the application of the reliability test (including, in particular, the evidence underpinning the expert's opinion);[39] and

(3) information which could substantially undermine the credibility of the experts being relied on.[40]

7.38 **We also recommend, in line with the current position under rule 33.4(2) of the Criminal Procedure Rules 2010, that a party's failure to comply with**

[37] It should be noted that, whilst evidence of an expert's "bad character" may be admitted in criminal proceedings under s 100 of the Criminal Justice Act 2003 and relevant evidence not amounting to bad character may be admitted at common law, if such evidence is tendered to undermine the credibility of an expert it will not be admitted unless it would undermine his or her credibility in a substantial way. Although we believe that matters adversely affecting credibility should be disclosed to the other parties and to the court, we do not believe it is necessary or desirable to include such matters in the experts' reports (see fn 19 above).

[38] See, in the context of prosecution witnesses in Scotland: *HM Advocate* v *Murtagh* [2009] UKPC 36, [2009] SCCR 790 (disclosure of information which could have a material adverse bearing on a witness's credibility).

[39] Databases, photographs, the relevant opinions of other experts, assumptions, statistical models and so on. Again, the expert should not have to provide the entire corpus of knowledge on the area but only the direct foundation material for his or her opinion. As noted above, r 33.4 of the Criminal Procedure Rules 2010 already provides for the inspection of experimental records (and the like) which the expert has relied upon and the things which have been measured or tested, if another party requires such inspection.

[40] Clause 8(1)(b) of our draft Bill would permit a rule requiring disclosure limited to information "that might reasonably be thought capable of substantially detracting from" an expert's credibility. We use the word "substantially" rather than "materially" for consistency with the admissibility test in s 100(1)(b) of the Criminal Justice Act 2003.

such disclosure requirements should render that party's expert evidence inadmissible, unless the judge gives leave (or all the parties agree that the evidence should be admitted).[41]

7.39 The parties would need to explain these disclosure obligations to their experts and that the experts bear a duty to provide them with the information referred to in paragraph 7.37. Indeed, the Criminal Procedure Rules Committee might wish to include in the Rules a specific provision requiring a party's legal representative to set out in his or her instructions to an expert a summary of the legal obligations borne by the party and the expert (under the Rules and our draft Bill) and, in particular, the expert's obligation to provide the legal representative with the information required by the disclosure rules. The expert's report could then include a statement confirming that the expert is aware of his or her obligations and has satisfied them.

7.40 To minimise unnecessary disclosure, and therefore costs, the obligation in paragraph 7.37(2) should arise only if a request for disclosure is expressly made by another party. This is in line with what is currently rule 33.4(1)(c) of the Criminal Procedure Rules 2010.

7.41 There would of course need to be sufficient time during the course of pre-trial proceedings (following disclosure of expert reports) for investigations to be conducted, if necessary, into matters which might affect admissibility.

7.42 We would expect the courts and the parties to exercise their powers and discharge their duties under Part 3 of the Criminal Procedure Rules ("Case Management") to ensure that the disclosure requirements for evidentiary reliability are met before any pre-trial hearing on the question. Needless to say, there should be flexibility in the time limits to ensure that the opposing party has sufficient time to address complex or voluminous material. That is to say, the greater the volume or difficulty of the material disclosed, the more time should be available to the other party to address the material and conduct any necessary investigations.

(3) Developing rule 33.6 of the Criminal Procedure Rules

7.43 Rule 33.6 of the Criminal Procedure Rules currently empowers the court to direct that the parties' experts meet and discuss the "expert issues" and prepare a joint statement for the court explaining the matters on which they agree and the areas of disagreement. One of our judicial consultees spoke most highly of this power and its practical utility in helping to narrow the issues,[42] but a number of consultees suggested that there should be an extension of this power. The proposal was that the judge should be able to direct the parties' legal

[41] Draft Bill, cl 8(1)(c).

[42] Mr Justice (Sir Peter) Gross (now Lord Justice Gross). The Academy of Experts also suggested that the power to direct experts to meet should be more widely used. In the context of appeals against conviction, see *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [5]: "The Vice-President [Hughes LJ] 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 … ."

representatives and experts to attend a pre-trial hearing chaired by the judge to discuss the expert issues. This would be more formal than the type of meeting held pursuant to rule 33.6; but it would be less formal, and therefore less adversarial, than the pre-trial hearing we considered in Part 5, at which the judge would need to rule on the question of evidentiary reliability.[43]

7.44 The UK Register of Expert Witnesses, who held their own internal consultation on the proposals in our consultation paper, told us that their respondents strongly believed that in cases where the complexity of the expert evidence warrants it, and/or the principal basis of the prosecution case is its expert evidence, the court should be able to call a pre-trial hearing at which the judge, lawyers and experts would come together to appraise and probe the expert evidence in context and be given time for reflection on the expert issues. They told us that the careful analysis of complex evidence takes time and often requires the opportunity for quiet and considered reflection which "simply cannot be done at trial".[44]

7.45 A similar argument was provided by Dr Robert Moles (of Network Knowledge), an author who has written several books on miscarriages of justice. He suggested that there should be a pre-trial investigation of this sort before the jury is sworn. This, he said, would focus on the adequacy of the scientific principles involved and whether they are capable of producing reliable conclusions.

7.46 We agree that a pre-trial meeting of experts chaired by the judge (in the presence of the parties' representatives) could be beneficial for the experts or the court or both, at least in cases where expert opinion evidence is central to the prosecution case and a meeting under rule 33.6 has already revealed a significant dispute between the parties' experts.[45] In this sort of situation the judge and experts might be assisted, and the conclusion of the trial expedited, by a hearing chaired by the trial judge, with time provided after the hearing for the experts to reflect on what was discussed, possibly with another pre-trial discussion of the expert evidence under rule 33.6 (and therefore a revised joint statement of the experts' respective positions under rule 33.6(2)(b)).[46]

7.47 In a case where the prosecution evidence is probed and scrutinised during a hearing of this sort it may be that the prosecution experts would be willing to withdraw from a previous opinion without the need for a more formal hearing to address evidentiary reliability, which may lead to savings in time and money. A hearing of this sort would no doubt also assist the judge in his or her understanding of the expert issues and the areas of disagreement, which would facilitate the more effective management of the trial.

[43] Paragraphs 5.46 to 5.50 above.

[44] The need for time to reflect was also made by an individual respondent on the on-line forum.

[45] The presence of legal representatives would not be obligatory, but they would almost certainly wish to be present.

[46] The venue would depend on the number of experts and legal representatives. In many cases the discussion could take place in the judge's chambers. In other cases it may need to be in a courtroom.

7.48 It may be that there is already sufficient scope within Part 3 of the 2010 Rules ("Case Management") to allow a judge to direct that there be a hearing of the sort suggested by our consultees. We note in particular that rule 3.2(3) provides that the court "must actively manage the case by giving any direction appropriate to the needs of that case as early as possible" and that rule 3.3 provides that each party must actively assist the court in fulfilling its duty under rule 3.2. In addition, rule 3.5 provides that, in fulfilling its duty under rule 3.2, "the court may give any direction and take any step actively to manage a case unless that direction or step would be inconsistent with legislation"; and rule 3.5(6) provides that if a party fails to comply with a rule or direction "the court may … exercise its powers to make a costs order; and impose such other sanction as may be appropriate".

7.49 Nevertheless, if there is scope within Part 3 of the Rules, we are unaware of the power being exercised to direct the experts to attend a hearing of this sort. The explicit focus on pre-hearing discussions in rule 33.6 in tandem with the call for reform from the UK Register of Expert Witnesses would seem to suggest that such hearings either do not happen or, if they do, they happen only very rarely; but this is hardly surprising. We appreciate that many judges may be unwilling to exercise a power unless it is expressly set out and precisely particularised in the Criminal Procedure Rules.

7.50 Since there is probably already sufficient scope in the Rules to direct the parties and experts to attend such a hearing, and that such hearings may in some cases be useful, we believe that Part 33 of the Criminal Procedure Rules should expressly empower the criminal courts to direct the parties' experts to attend a pre-trial discussion chaired by the trial judge.[47] As with the power in rule 33.6 to direct the experts to attend a pre-trial discussion, there would be no obligation on the judge to use this power, but it would be available for use in appropriate cases.

7.51 The expert witnesses' overriding duty to the court justifies a power which would compel expert witnesses to participate in such a discussion, and a rule similar to rule 33.6(4) of the Criminal Procedure Rules (leave required to admit an expert's evidence if he or she fails to comply with a direction to attend) would ensure compliance. It is true that one or more of the parties might not wish to have their expert evidence scrutinised during a discussion of this sort, but they are unlikely to refuse to co-operate if their experts have been directed to attend and there is the possibility that their expert evidence will be excluded if they do not co-operate.[48]

7.52 We therefore recommend that:

(1) Part 33 of the Criminal Procedure Rules be amended to make explicit provision for a judge-led meeting of the parties' legal representatives and experts if there is a dispute on the expert issues and the judge believes that such a meeting would be beneficial in resolving or reducing the dispute; and

[47] In line with what we say in paras 5.37 to 5.41 above, we believe that a hearing of this sort in a magistrates' court should be chaired by a District Judge (Magistrates' Court) who would also be the trial judge.

[48] No privilege would attach to the communications in such a hearing.

(2) this power be supported by a provision similar to that now set out in rule 33.6(4) of the Rules.

DIRECTING THE JURY

7.53 Our proposed evidentiary reliability test should ensure that expert opinion evidence of doubtful reliability is properly screened before it can be heard by the jury. If the evidence is insufficiently reliable to be admitted, the jury will not hear it. Nevertheless, once the evidence is admitted the jury will still need to determine for itself whether the evidence is reliable and how much weight it should be given.

7.54 One of our consultees suggested that the trial judge should warn the jury about relying on disputed expert opinion evidence adduced by the prosecution, if the expert evidence relates to a developing field of medical science.[49] The Court of Appeal has recently intimated that a warning of this sort may be appropriate for some such cases.[50]

7.55 The Criminal Bar Association proposed that the Judicial Studies Board should provide enhanced specimen directions for prosecution expert evidence, to provide an "additional safeguard by way of explanation and warnings" setting out the "limits and any potential for error" because there are factors which impede an effective and critical examination of much expert evidence, such as "a misunderstanding of the limits of 'science'".[51]

7.56 We agree that warnings and explanations of this sort ("cautionary warnings") would be desirable in some trials, certainly in many of the trials where the prosecution case depends fundamentally on disputed expert opinion evidence, such that the evidence is central to its case and does not merely provide support for a cogent body of other evidence.

7.57 However, we also believe that this is an area where it would be best not to be too prescriptive. In our view the judge should always consider whether the jury should be given a cautionary warning about the prosecution's expert opinion evidence, if that evidence is of substantial importance to the prosecution case. And if a cautionary warning is thought to be appropriate in such a case, the judge should provide one tailored to the type of evidence, the strength of the disputed opinion and the facts of the case. But we do not believe the judge should be

[49] M John Batt (Solicitor), proposing that the judge should give examples of hypotheses which have been discredited.

[50] See *Holdsworth* [2008] EWCA Crim 971 at [57]: "As knowledge increases, today's orthodoxy may be tomorrow's outdated learning. Special caution is also needed where expert opinion evidence is not just relied upon as additional material to support a prosecution but is fundamental to it." In addition, the Court of appeal has suggested cautionary warnings for certain types of expert evidence; see, for example: *Flynn* [2008] EWCA Crim 970, [2008] 2 Cr App R 20 at [64] (expert evidence on voice recognition), *Luttrell* [2004] EWCA Crim 1344, [2004] 2 Cr App R 31 at [44] (expert lip-reading evidence) and *Atkins* [2009] EWCA Crim 1876, [2010] 1 Cr App R 8 at [23] (expert facial-mapping evidence).

[51] For the current position, see the Judicial Studies Board's Crown Court Bench Book, *Directing the Jury*, March 2010, p 157, on cases where there are "serious and respectable disagreements between experts as to the conclusions which can be drawn from post mortem findings", and p 153 on "the limitations of expert evidence at the boundaries of medical knowledge".

under a duty to provide the jury with a cautionary warning in all such cases. In some cases a warning would be unnecessary and potentially confusing.

7.58 Although we appreciate that there are some special categories of prosecution evidence in criminal proceedings in respect of which the judge must explain the special need for caution – for example, where the prosecution case depends wholly or substantially on disputed eye-witness identification evidence[52] or wholly or substantially on a confession made by a mentally-handicapped accused[53] – the trend in recent years, certainly in relation to potentially unreliable witnesses of fact, has been to give greater latitude to trial judges as to when a cautionary warning should be given and, if so, the terms of the warning.[54] To take a recent example, in *Stone*[55] the Court of Appeal refused to accept that the judge must always give a cautionary warning if the prosecution has relied on a confession purportedly made by the accused to another inmate while in prison, but the court did accept that in such cases the judge should always consider whether a warning should be given.

7.59 Eye-witness identifications, voice identifications and confessions made by the mentally-ill all carry an inherent risk of unreliability, but this risk is not the same with expert opinion evidence because there are so many fields of expertise and so many individuals who are competent to provide such evidence. Undoubtedly some fields of expert evidence and some expert opinions derived from those fields are more likely to be unreliable than others, but it would be impracticable and undesirable to create a rule requiring a warning for some fields but not others. We believe that whether a warning should be given, and how any such warning should be framed, should be left to the judge to determine in the light of all the circumstances of the case.

7.60 What is desirable and important is for the judge to *consider* the issue. If the judge does this, it is very likely that he or she will provide the jury with an appropriate warning in an appropriate case.

7.61 **We therefore recommend that the Criminal Procedure Rules should provide that, for trials on indictment (before a judge and jury), if the judge determines at the end of the trial that the prosecution case depends wholly or substantially on disputed expert opinion evidence, the judge should:**

(1) consider whether to provide the jury with a cautionary warning in relation to that evidence; and

(2) if a cautionary warning is thought to be appropriate, provide the jury with an appropriate warning tailored to the facts of the case.

[52] *Turnbull* [1976] QB 224. A similar approach is developing for voice-identification evidence; see, for example, *Roberts* [2000] *Criminal Law Review* 183 and *Erskine* [2001] EWCA Crim 2513, [2001] All ER (D) 23 (Nov).

[53] Section 77(1) of the Police and Criminal Evidence Act 1984.

[54] See, for example: *Makanjuola* [1995] 1 WLR 1348, *Muncaster* [1999] *Criminal Law Review* 409, *Causley* [1999] *Criminal Law Review* 572, *Mountford* [1999] *Criminal Law Review* 575 and *Whitehouse* [2001] EWCA Crim 1531.

[55] [2005] EWCA Crim 105, [2005] *Criminal Law Review* 569.

7.62 The second limb would provide the Crown Court judge with a broad discretion as to the nature and extent of any cautionary warning he or she feels the jury should be given, in line with the view we express above.

7.63 It should also be noted that this test would not prevent the judge from considering whether to give a warning in other cases, where the prosecution's expert opinion evidence is not so important.

PART 8
THE NEW TEST IN PRACTICE

INTRODUCTION

8.1 In this report, we have set out our conclusion that there should be a new framework of statutory provisions governing the admissibility of expert evidence in criminal proceedings. Most importantly, we have recommended that for expert opinion evidence this new framework should include an evidentiary reliability limb relating to matters such as methodology, peer review and the expert's reasoning. We will now attempt to demonstrate how our recommendations would work in practice, with reference to:

(1) the flawed prosecution evidence we described in Part 2 of our consultation paper;[1] and

(2) a hypothetical case where we examine the application of our test to defence evidence.

8.2 The application of the new test to the cases we discussed in our consultation paper must, however, be read with important caveats relating to the reasons for our recommendations, the benefits of hindsight and the desirability of a new, critical approach to expert evidence (supported by appropriate training for legal practitioners and the judiciary).

8.3 First, as we have explained in Part 1 and Part 5, our recommendations, if implemented, would not only establish a proper framework in criminal proceedings for screening expert evidence at the admissibility stage; they should also encourage higher standards amongst expert witnesses, and the specialists on whom they rely, resulting in expert evidence of greater reliability being tendered for admission. It follows that if our proposed legislation had been in force at the relevant times – that is, at the time of the trials when the flawed prosecution evidence was adduced – it is highly unlikely that the evidence of doubtful reliability we criticised in our consultation paper would even have been proffered for admission, and it would not have been necessary to apply our proposed test. The outcome would have been the same, however: the unreliable evidence would not have been admitted and could not have been relied on by the juries in those trials.

8.4 Secondly, we fully appreciate how easy it can be to criticise a decision on admissibility after the event, with the benefit of hindsight, and we have borne this in mind. Nevertheless, it is also apparent from a review of past cases that there have been failings on the part of some individuals, so this is an apt time to stress that the effectiveness of our reforms, as applied to unreliable evidence which *is* tendered for admission, depends on legal practitioners and trial judges having an understanding of the factors bearing on evidentiary reliability and on their being willing to adopt a more critical, enquiring approach to expert evidence.

[1] Consultation Paper No 190, paras 2.14 to 2.24, summarised again in paras 1.4 to 1.7 above.

8.5 The party opposing the admissibility of an expert's opinion evidence under the reliability limb of our proposed test would have to formulate a sound argument to explain why there is a need to investigate evidentiary reliability.[2] The trial judge would, however, have ultimate control and would therefore have the power to require an investigation in appropriate cases even if a challenge has not been made.[3]

8.6 We cannot therefore provide an absolute guarantee that our reforms would have prevented the unreliable prosecution evidence being admitted in the cases we referred to in our consultation paper. But what we can say with some confidence is that:

(1) the existence of our statutory test means it is highly unlikely that the experts in those cases would have wished to give the expert opinion evidence in question;

(2) if the experts had endeavoured to give the evidence in question, the existence of our test would probably have led the prosecution to conclude that it should not be tendered for admission;

(3) if the unreliable evidence had been tendered for admission, our test would probably have led the experts, legal practitioners and judges to scrutinise it for reliability more effectively in advance of the trial, before a ruling on admissibility; and

(4) given the foregoing, it is almost certain that the unreliable evidence would not have been placed before the jury.

8.7 The success of our proposed framework as an effective barrier to the admission of unreliable expert opinion evidence in future cases (assuming such evidence is tendered for admission) will in large measure depend on lawyers and judges adopting a more critical approach to expert evidence, with a new culture of engaged enquiry. For this reason, it bears repeating that judges and criminal lawyers will need to undergo training on factors bearing on evidentiary reliability, particularly, but not exclusively, on the factors to be borne in mind when assessing the validity of evidence of a scientific nature.[4]

8.8 This would not be an unduly burdensome or expensive obligation. It should be possible to incorporate training, with reference to the examples and factors set out in our draft Bill, into existing programmes for the judiciary[5] and for

[2] Paragraphs 5.43 to 5.56 above; see cl 6(2) of our draft Bill.

[3] See cl 6(3) of our draft Bill.

[4] Consultation Paper No 190, paras 1.15(3) and 6.72; and see para 1.43 above.

[5] Responsibility for the training of the judiciary rests with the Lord Chief Justice and this is exercised through the Judicial Studies Board.

practitioners.[6] It is therefore likely that the associated costs would be quite modest.[7] In this context it is worth repeating a comment we set out in our consultation paper with reference to evidence of a scientific nature:[8] "judges do not need to be trained to become scientists, they [merely] need to be trained to be critical consumers of the science that comes before them."[9]

THE CASES IN OUR CONSULTATION PAPER

8.9 With our caveats established, we now turn to the expert opinion evidence heard by the juries in *Dallagher*,[10] *Clark*,[11] *Cannings*[12] and *Harris and others*,[13] the cases we considered in our consultation paper.[14]

Ear-print identification evidence – *Dallagher*

8.10 D's conviction for murder in *Dallagher*[15] was based almost entirely on prosecution expert opinion evidence relating to the comparison of an ear-print made by D with a latent ear-print found on a window at the scene of the crime.[16] One of the prosecution experts opined at D's trial that he was "absolutely convinced" that D had left the latent print, an opinion we suggested was insufficiently reliable to be considered by the jury.[17]

8.11 At the time of D's trial there was an insufficient body of research data to support a hypothesis (or assumption) that every human ear leaves a unique print and that the identity of an offender could confidently be determined solely on the basis of an ear-print comparison. Moreover, the expert's opinion relied heavily on

6 Solicitors and barristers are required to undertake a certain number of continuing professional development ("CPD") hours training per year in order to maintain their practising certificates. Any cost would be borne by the practitioners (or their employers) who choose to undertake training to assist their work in this regard. We hope that guidance on assessing the reliability of expert evidence will in due course become an important feature in the training of newly-qualified barristers and solicitors. Indeed, as we suggested in Part 1 (fn 45), the CPD requirements for practising solicitors and barristers who undertake work in criminal law should be amended to require attendance at approved lectures covering statistics and scientific methodology (in the context of criminal proceedings).

7 For the likely cost implications, see Appendix C.

8 Consultation Paper No 190, para 6.73.

9 SI Gatowski and others, "Asking the Gatekeepers: A National Survey of Judges on Judging Expert Evidence in a Post-*Daubert* World" (2001) 25 *Law and Human Behavior* 433, 455.

10 [2002] EWCA Crim 1903, [2003] 1 Cr App R 12 (on ear-print evidence).

11 *Clark (Sally) (No 2)* [2003] EWCA Crim 1020, [2003] 2 FCR 447 (on the statistical evidence given by an expert paediatrician).

12 [2004] EWCA Crim 1, [2004] 1 WLR 2607 (on the hypothesis that two or more unexplained infant deaths in the same family meant that murder had been committed).

13 [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 (on the hypothesis that a non-accidental injury could always be inferred from the presence of a triad of intra-cranial injuries).

14 Consultation Paper No 190, paras 2.14 to 2.24.

15 [2002] EWCA Crim 1903, [2003] 1 Cr App R 12.

16 DNA evidence taken from the latent print later established that it had been left by someone other than D.

17 Consultation Paper No 190, paras 2.14 and 2.15.

subjective factors (an experience-based skill in making visual comparisons) rather than on objectively verifiable measuring techniques.[18]

8.12 Under our proposed test, the prosecution would have had to prove that the witness claiming expertise was skilled in the comparison of ear-prints and therefore qualified to provide expert evidence in a criminal trial. If the defence had then made submissions on the poor data and doubtful hypothesis underpinning the expert's proffered opinion evidence, or the judge had raised the matter independently, there would have been an enquiry into the reliability of the opinion. The judge may have been able to conclude without a hearing that the expert's opinion (that D could be identified with absolute certainty from ear-prints alone) was insufficiently reliable to be admitted. Alternatively, there would have been a pre-trial hearing on the issue, which no doubt would have led to the same conclusion. The expert would not have been permitted to give an opinion that he was "absolutely convinced" that D had left the latent print at the scene of the murder. He might, however, have been able to give a weaker opinion on similarities between the latent print and D's print (assuming the jury had required the assistance of an expert in this respect).

Statistical evidence on SIDS – *Clark (Sally) (No 2)*

8.13 C's convictions for the murder of her two infant sons were quashed (in *Clark (Sally) (No 2)*)[19] primarily because of a prosecution expert's failure to disclose test results. In our consultation paper, however, we focused specifically on the unreliable statistical evidence given by a professor of paediatrics and child health.[20]

8.14 The expert opined that there was only a one in 73 million chance of two natural cot deaths (sudden infant death syndrome or "SIDS") in the same family. In reaching this figure, the expert relied on a draft Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) report.[21] From this information, the possibility of one SIDS death in a family such as the Clark family – a middle-class family of non-smoking parents, with at least one income and where the mother was at least 26 years old – was one in 8,543.[22] The expert simply squared this improbability to reach his opinion that the likelihood of two infant deaths in the same family would be one in 73 million.[23] His opinion was therefore based on a

[18] According to the Court of Appeal in this case (at [9]), the prosecution expert "had simply become interested in ear print identification and read what was available on the topic. He had built up a portfolio of about 600 photographs and 300 ear prints and from his experience and what he had read he was satisfied that no two ear prints are alike in every particular." D's case on appeal (at [11]) was that there was "no empirical research, and no peer review to support the conclusion that robust decisions can be founded on comparisons which in turn are critically dependent on the examiner's judgment in circumstances where there are no criteria for testing that judgment".

[19] [2003] EWCA Crim 1020, [2003] 2 FCR 447.

[20] Clark's earlier appeal was unsuccessful; see *Clark (Sally) (No 1)* (2000) 1999/07495/Y3, [2000] All ER (D) 1219, cited on www.bailii.org as [2000] EWCA Crim 54.

[21] See *Clark (Sally) (No 1)* [2000] EWCA Crim 54 at [102].

[22] *Clark (Sally) (No 1)* [2000] EWCA Crim 54 at [118]; *Clark (Sally) (No 2)* [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [96].

[23] *Clark (Sally) (No 1)* [2000] EWCA Crim 54 at [118]; *Clark (Sally) (No 2)* [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [98].

hypothesis (or assumption) that genetic or other environmental factors do not affect the likelihood of SIDS. The Court of Appeal said that it was "unfortunate that the trial did not feature any consideration as to whether the statistical evidence should be admitted in evidence".[24]

8.15 Under our proposed reforms, the trial judge would have ruled on the scope of the paediatrician's competence to give expert evidence and would have monitored his evidence to ensure that he did not drift into other areas.[25] Insofar as the paediatrician was adjudged to be competent to provide some basic statistical evidence to supplement his opinion as an expert on child health, he would have been conscious of the limitations on his entitlement to opine as an expert. Indeed, before giving his expert testimony, he would have been reminded of his duty to give impartial opinion evidence only on matters falling within his areas of expertise.[26] The paediatrician would not have been asked questions in the witness box on matters beyond his competence; and if he was inadvertently asked such a question while giving his expert evidence, the judge would have intervened to prevent an impermissible opinion being given. It follows that, insofar as the expert may have had some knowledge of statistical analysis, he would probably have been prevented from giving an opinion on the statistical likelihood of multiple SIDS deaths.

8.16 With regard to the reliability of the statistical evidence – insofar as the expert paediatrician was competent to provide it and would have wished to proffer it for admission (given the existence of the statutory test), and assuming that the figure would have been disclosed before the trial in his written report – the defence or court would presumably have raised the matter as a preliminary issue in the pre-trial proceedings and the judge would no doubt have directed that the parties and their experts attend a pre-trial hearing to assess the reliability of the figure of one in 73 million.

8.17 The reliability of the hypothesis (or assumption) underlying the figure of one in 73 million would then have been examined against our proposed statutory test, examples and factors. The expert would have been required to demonstrate the evidentiary reliability (the scientific validity) of his hypothesis and the chain of reasoning leading to his opinion, with reference to properly conducted scientific research and an explanation of the limitations in the research findings and the margins of uncertainty associated with them.

8.18 We believe an investigation into the expert's hypothesis would have revealed little if any evidence to support it, and indeed would in all likelihood have revealed evidence that SIDS deaths are more likely to occur in families where there is a history of SIDS.[27] It is to be noted that when C appealed against her convictions the Court of Appeal accepted that there was evidence to suggest that the figure of one in 73 million "grossly" misrepresented the chance of two sudden deaths

[24] [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [173].

[25] Paragraph 4.46(2) above.

[26] Paragraph 4.46(1) above.

[27] It is to be noted that the report the paediatrician relied on acknowledged the possibility of other familial factors increasing the risk of a SIDS death; see *Clark (Sally) (No 2)* [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [101].

within the same family from unexplained but natural causes[28] and said that, if the question of the statistical evidence had been fully argued on appeal, it would probably have provided a distinct basis upon which to quash C's convictions.[29]

8.19 In the absence of sufficiently cogent research findings supporting the underlying hypothesis, the expert paediatrician would almost certainly not have been permitted to give his figure of one in 73 million at C's trial for murder.

8.20 Moreover, even if it had been possible for the prosecution to call a competent statistician to provide a reliable figure as to the probability of two SIDS death in one family, couched with appropriate qualifications to reflect the uncertainties and gaps in the scientific knowledge on SIDS and the dangers associated with a retrospective approach to probabilities, under our recommendations that expert would have been expected to try to formulate a counterbalancing probability reflecting the defence case. That is to say, he or she would have been expected to try to come to a figure reflecting the unlikelihood that the accused would have murdered her two children (if such a calculation were feasible).[30]

Inferring murder from unexplained infant deaths – *Cannings*

8.21 In our consultation paper we explained that the Court of Appeal quashed C's convictions for the murder of her two infant sons in *Cannings*[31] on the ground that the mere fact of two or more unexplained infant deaths in the same family could not be allowed to lead inexorably to the conclusion that murder had been committed.[32] The Court of Appeal rejected the dogmatic view held by a number of paediatricians that murder could confidently be inferred from two or more unexplained deaths.[33] Fresh evidence suggested that multiple cot (SIDS) deaths in the same family could have an underlying genetic cause; and a report relating to the largest follow-up study of cot-death families concluded that "the occurrence of a second unexpected infant death within a family is … usually from natural causes".[34]

8.22 Under our proposed reforms, the defence would presumably have challenged the evidentiary reliability of the paediatricians' hypothesis during the pre-trial proceedings on the ground that it was insufficiently supported by data generated by sound empirical research. Given the prosecution's dependence on the hypothesis and opinion evidence founded on it, the judge would no doubt have

[28] [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [178].

[29] [2003] EWCA Crim 1020, [2003] 2 FCR 447 at [178] to [180]. The Court of Appeal pointed out (at [176]) that if the paediatrician's figure of one in 73 million was correct the purpose of the Care of Next Infant scheme, designed to provide guidance and to monitor the possibility of a second SIDS death in the same family, was "wasted effort" because the risk could "effectively be discounted". See also A Coghlan, "Infant deaths: Justice for the innocents" (2005) 187 *New Scientist* (issue 2510), 6, citing *The Lancet* (2004) vol 365, 29 referring to a study which found that a second similar death in the same family was nine times as likely to be natural as inflicted.

[30] Paragraph 7.21(2)(c) and paras 7.22 to 7.25 above.

[31] [2004] EWCA Crim 1, [2004] 1 WLR 2607.

[32] Consultation Paper No 190, para 2.20.

[33] [2004] EWCA Crim 1, [2004] 1 WLR 2607 at [18] to [20].

[34] [2004] EWCA Crim 1, [2004] 1 WLR 2607 at [141]. See also fn 29 above.

accepted that there was an issue of evidentiary reliability to be addressed and a pre-trial hearing would have been arranged, during which the extent and quality of the underlying research data and the associated margins of uncertainty would have been considered along with other relevant factors such as peer review, differences of opinion in the expert community and research findings supporting an alternative hypothesis (such as a genetic contribution).[35]

8.23 If our admissibility test had been applied, the trial judge would have permitted the prosecution experts to give opinion evidence at trial only to the extent justified by the available data and ongoing uncertainties.[36] If the judge had ruled that the experts could not give an opinion that the deaths were almost certainly non-accidental, and if the judge concluded that there was no independent evidence to suggest non-accidental deaths, the case would not have proceeded to trial.[37]

Inferring a non-accidental cause from intra-cranial injuries – *Harris*

8.24 Until the appeal in *Harris and others*[38] the prosecution could secure a murder (or serious assault) conviction on the basis of expert opinion evidence that a non-accidental head injury to an infant child could confidently, in effect always, be inferred from the presence of a particular triad of intra-cranial injuries[39] (and that, accordingly, the accused's exculpatory explanation could be disregarded as untrue). So, a person charged with murdering a child could be convicted solely on the basis of evidence of shaken baby syndrome ("SBS").[40]

8.25 However, as we explained in our consultation paper,[41] the evidence base for the hypothesis of SBS when the appellants in *Harris and others* were tried has been described as an inverted pyramid "with a very small database (most of it poor-quality original research, retrospective in nature, and without appropriate control

[35] In *Cannings* [2004] EWCA Crim 1, [2004] 1 WLR 2607 at [138] the Court of Appeal acknowledged that there was a "substantial body of research" which suggested that infant deaths "can and do occur naturally, even when they are unexplained". As noted already, the court referred to a study (the CONI study) which found that a second SIDS death in a family is usually from natural causes. The court went on to accept (at [142]) that even three unexpected and apparently unexplained infant deaths in the same family could have natural causes.

[36] We do of course appreciate the difficulties of experimental research in this area because of the rarity of multiple infant deaths and the inability to conduct experiments to test a hypothesis.

[37] In *Cannings* [2004] EWCA Crim 1, [2004] 1 WLR 2607 at [178] to [179], the Court of Appeal took the view that, until all known causes of death had been excluded, the cause should remain unknown and, accordingly, parents should not be prosecuted if experts disagreed over causation (that is, a reasonable body of experts opined that the deaths were natural) and there was no other evidence to suggest murder.

[38] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5.

[39] Acute encephalopathy (a disorder of the brain), subdural haemorrhage (bleeding around the brain) and retinal haemorrhage (bleeding in the retinas).

[40] See Editorial, *British Medical Journal* 29 July 2010 (issue 2771): "For 40 years, mainstream medical experts who give evidence in court have largely agreed that shaken baby syndrome can be unambiguously diagnosed by a triad of symptoms at post-mortem … . Murder convictions are often secured on the basis of these alone, even in the absence of other signs of abuse … ."

[41] Consultation Paper No 190, fn 31 to para 2.24.

groups) spreading to a broad body of somewhat divergent opinions".[42] The same paper concluded that there "was inadequate scientific evidence to come to a firm conclusion on most aspects of causation, diagnosis, treatment, or any other matters pertaining to SBS".[43]

8.26 If our proposed admissibility test had been in force at the time when the prosecution was seeking to rely on the triad of intra-cranial injuries as compelling evidence of a non-accidental head injury – and assuming for the sake of argument that our test would not have deterred the prosecution's medical experts from wishing to give an opinion that the presence of the triad standing alone justified a diagnosis of non-accidental head injury – the defence would presumably have challenged the reliability of the opinion evidence (or the judge would have raised the matter of his or her own motion) and the question of evidentiary reliability would have been addressed at a pre-trial hearing.

8.27 At the hearing, the hypothesis that the triad of intra-cranial injuries was sufficient evidence to justify a conviction for murder or a serious assault would have been critically appraised. The judge would have scrutinised the prosecution experts' opinion evidence for reliability, with reference to the nature and extent of the empirical research underpinning the hypothesis of SBS.

8.28 The prosecution experts would have had to show that their hypothesis was supported by sufficient observational data and/or simulations. There would need to have been properly conducted research showing a sound correlation between the intra-cranial injuries and a non-accidental cause (from independent evidence) and demonstrating the absence of such injuries in cases where there have been accidents (such as choking or small falls) or congenital conditions.[44] Given the strength and importance of the opinion evidence proffered for admission, the observational data consistent with the hypothesis (and the absence of observational data inconsistent with it) would need to have been considerable to justify the proffered evidence being admitted.

8.29 In short, the judge would have permitted a prosecution expert to give opinion evidence only to the extent that any opinion could be justified by the research data available.[45] The expert opinion evidence in support of the prosecution assertion of a non-accidental injury would have been modified or weakened to reflect the uncertainties associated with the hypothesis of SBS, the quality and

[42] M Donohoe, "Evidence-based Medicine and Shaken Baby Syndrome" (2003) 24 *American Journal of Forensic Medicine and Pathology* 239, 241. See also D Tuerkheimer, "The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts" (2009) 87 *Washington University Law Review* 1, 12 to 14 and 17 to 18.

[43] M Donohoe, "Evidence-based Medicine and Shaken Baby Syndrome" (2003) 24 *American Journal of Forensic Medicine and Pathology* 239, 241.

[44] See M Donohoe, "Evidence-based Medicine and Shaken Baby Syndrome" (2003) 24 *American Journal of Forensic Medicine and Pathology* 239: "Genuine hypothesis testing requires use of appropriate research methodologies, including collection of relevant control data, and suitable statistical analysis. The interpretation of individual study findings may be constrained by factors such as whether the cohort examined was adequately representative of the patient population in general. Replication across studies and in independent research centres is a key factor in the reliability of evidence."

[45] As the Court of Appeal recently acknowledged in *Henderson* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [6]: "the strength of a proposition in medicine depends upon the strength of the medical evidence on which it is based".

extent of the research underpinning it, evidence suggesting that the triad could result from another cause generally and any evidence in the instant case suggesting an accidental or congenital cause.

8.30 Given the limited research data supporting the hypothesis, and evidence that the triad could have some other cause, the judge would not have allowed prosecution experts to give opinion evidence that, standing alone, the triad of injuries was certain proof of non-accidental trauma; and the judge would not have permitted the prosecution to seek a conviction solely on the basis that the infant exhibited the triad of intra-cranial injuries associated with SBS.[46]

A HYPOTHETICAL CASE

8.31 Under this heading we apply our proposed framework to a hypothetical case of alleged murder, relating to an infant child who died unexpectedly while alone with his mother (D). In this case, however, we focus on defence evidence, developing a point we made in our consultation paper[47] and drawing on the facts of a recent case in civil proceedings.[48]

8.32 The deceased child was found to have the triad of intra-cranial injuries associated with violent shaking, including subdural and retinal haemorrhages (bleeding around the brain and in the retinas) but no external injuries. The prosecution will allege that D violently assaulted the child and will seek to rely on expert opinion evidence relating to the triad in tandem with extraneous circumstantial evidence of D's guilt (evidence that D assaulted the child on previous occasions).

8.33 D's defence is that she did not injure the child and was asleep when he died. In support of her defence, D will seek to call an expert witness to opine that the cause of the child's subdural and retinal haemorrhages could have been severe

[46] However, a conviction would have been possible on the basis of the triad of intra-cranial injuries in association with other sufficiently cogent circumstantial evidence of the accused's guilt (such as separate injuries consistent with abuse). In *Harris and others* [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 the Court of Appeal noted evidence which suggested that the triad of injuries could be caused, albeit only rarely, by a minor fall or non-violent handling. The court therefore held that, without more, the mere presence of the triad could not automatically or necessarily lead to a diagnosis of non-accidental head injury, but the court also maintained that the triad was a "strong pointer" to non-accidental head injury. See also *Henderson* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [6]: the triad is "strong prima facie evidence of shaking". Of course the cogency of the triad as strong prima facie evidence of shaking would be profoundly weakened by circumstantial evidence suggesting some other (innocent) cause; see *Butler* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24 at [84] to [118]. Note also the Crown Prosecution Service's updated guidance for prosecutors, explaining that it is unlikely a charge of murder, attempted murder or assault will be justified if the only evidence against the accused is the triad of injuries; see CPS, *Non-Accidental Head Injury Cases (NAHI, formerly referred to as Shaken Baby Syndrome [SBS]) – Prosecution Approach,* http://www.cps.gov.uk/legal/l_to_o/non_accidental_head_injury_cases/ (last visited 26 January 2011).

[47] Consultation Paper No 190, para 6.56.

[48] *A Local Authority v S* [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560.

hypoxia (oxygen deficiency in the tissues) resulting from choking.[49] The defence expert proposes to rely on the "Geddes III" hypothesis[50] and a recent research paper co-authored by a Dr C which the expert says supports it. The prosecution will counter that the hypothesis is invalid and that the research paper does not support it, relying on a recent judgment of the Family Division of the High Court, *A Local Authority v S*,[51] where Dr C's paper was criticised. The prosecution will therefore submit that there should be a hearing on evidentiary reliability.

8.34 Given the evidence on Geddes III before the Court of Appeal in *Harris and others*,[52] and the court's critical comments on the hypothesis in that case,[53] the trial judge in our hypothetical case would no doubt decide that the question of evidentiary reliability must be addressed at a pre-trial hearing. The court would focus on the scientific validity of Geddes III (that hypoxia could have caused the haemorrhages) and the research paper the defence expert wishes to rely on in support of that hypothesis.

8.35 The case of *A Local Authority v S* was an application made by a local authority for a care order[54] in respect of a three-year-old child, S. The proceedings arose out of the death of S's sibling, Z, who died at the age of 13 weeks. The local authority brought proceedings alleging that Z died as the result of a shake or impact injury inflicted by the mother, as evidenced by the triad of intracranial injuries;[55] and, while the majority of experts in the case considered the most likely cause of Z's death to be a non-accidental injury, two experts, Dr C[56] and Dr S,[57]

[49] According to this hypothesis, the lack of oxygen causes the brain to swell and this swelling increases the pressure on the brain causing haemorrhages. This was a central feature of the "unified hypothesis" known as "Geddes III", a summary of which can be found in *A Local Authority v S* [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [32]. In Consultation Paper No 190, fn 64 to para 6.56, we explained that Geddes III is regarded as invalid, even by its proponent, and was originally published merely to stimulate debate. See *Harris and others* [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 at [57], [58] and [66] to [69]. One criticism of the hypothesis is that, if it were correct, there would be far more children showing the triad, but this is not the case.

[50] Above.

[51] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560.

[52] [2005] EWCA Crim 1980, [2006] 1 WLR 2607 at [58] and [68].

[53] [2005] EWCA Crim 1980, [2006] 1 WLR 2607 at [69]: "In our judgment … [Geddes III] can no longer be regarded as a credible or alternative cause of the triad of injuries." See also *A Local Authority v S* [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [207] to [210] referring to a research paper published in 2007 following a study of 82 foetuses, infants and toddlers, which showed no causal link between hypoxia and subdural haemorrhage, leading the authors to conclude that Geddes III "can no longer be regarded as a credible alternative cause of the triad of injuries". (It is to be noted, however, that the High Court judge criticised the inclusion of foetuses in the researchers' cohort.)

[54] Under s 31 of the Children Act 1989.

[55] *A Local Authority v S* [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [29].

[56] A consultant paediatric histopathologist.

[57] A consultant neuropathologist.

subscribing to Geddes III, opined that hypoxia could have been the cause of Z's haemorrhages.[58]

8.36 In *A Local Authority v S* the court noted that Drs C and S's support for Geddes III was controversial and contrary to "the mainstream of current thinking and the analysis of the Court of Appeal in *R v. Harris*".[59] In the same paragraph of the court's judgment, mention was made of the fact that there were only about three or four experts in the country (including Drs C and S) who subscribe to Geddes III. The court explained that Drs C and S regarded themselves as having built on Dr Geddes' original work; but the court went on to consider the legitimacy of their belief in Geddes III, referring to their use of research material, their deference to experts in another field, their tendency to opine on matters beyond their expertise and the question of factual accuracy.[60]

8.37 Dr C had co-authored a paper in 2009 in which the authors concluded that subdural haemorrhage was not an unusual finding where children had died from a non-traumatic cause and that this was "confirmatory of Geddes III".[61] However, having heard expert evidence which was highly critical of the way the research had been conducted and the conclusions drawn from the data, the court noted that Dr C could not explain why clinicians, forensic pathologists and neurosurgeons are not finding subdural haemorrhages in cases of pure hypoxia;[62] and the court went on to hold that, as evidence, the paper provided nothing beyond confirmation of what was already known, namely that a number of small babies have subdural haemorrhages following the traumatic process of birth.[63] The court noted that Dr C and her co-author had focused exclusively on foetuses and babies who had lived no longer than 19 days, even though the preponderant medical view is that a cohort of foetuses cannot provide useful data, on account of differences between foetuses and live children, and because subdural haemorrhages are not unusual in babies up to 19 days old. The court went on to conclude that Dr C and her co-author had been selective in the way they had chosen children for their study and that this "must inevitably undermine the value of the study".[64]

8.38 The court then listed other concerns regarding the paper and Dr C's evidence: (1) it was disingenuous of Dr C to suggest that her research provided confirmation of Geddes III; (2) the results were entirely at odds with other research on a larger

[58] *A Local Authority v S* [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [43]. All the experts in the case accepted that a non-accidental head injury was a possible cause of Z's death, but Drs C and S considered this to be an unlikely explanation in the absence of any independent evidence of trauma (see [44] and [58]). Dr C was of the view that the triad can be used as a diagnostic tool to prove non-accidental injury only if there are also injuries associated with trauma such as grip marks (bruises) or fractures (or eye-witness testimony); Dr S refused to acknowledge that the triad was any evidence of a non-accidental injury in the absence of independent evidence of serious trauma (see [63] and [198]).

[59] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [199].

[60] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [204] and [205].

[61] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [209] and [214].

[62] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [219].

[63] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [223].

[64] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [224] and [225].

cohort where there had been no selection; (3) Dr C's findings were at odds with the experience of all the clinicians who gave evidence; (4) Dr C's conclusions were reached without examining the babies for retinal haemorrhages; (5) the paper was predicated on the soundness of Geddes III; and (6) Dr C had claimed in her evidence that there were research papers confirming a link between hypoxia and retinal haemorrhages, contrary to the evidence of the ophthalmic expertise before the court.[65]

8.39 The court also criticised Dr S's evidence because she had relied heavily, but selectively, upon other research material and, in respect of one paper, had made an unfounded assumption.[66] The court commented that expert witnesses must display professionalism and rigour, meaning "not only drawing the court's attention to research that is contrary to their view, but [also being] rigorous in the use they make of research papers."[67] The court added that Dr S should at the very least have drawn attention to the fact that the cases she relied on involved a child who had been shaken and one who was regarded as the victim of a non-accidental injury (resulting in the child being taken into care);[68] and the court felt compelled to conclude that her use of the research material had been "disingenuous".[69]

8.40 Returning now to our hypothetical criminal case, if the reliability of Geddes III and Dr C's paper as purported support for the hypothesis were to be examined at a pre-trial hearing, it is possible, likely even, that the judge would conclude that the defence expert's opinion evidence should be ruled inadmissible. For the defence expert to be able to opine that D's child might plausibly have died as a result of haemorrhaging caused by choking, generating a reasonable doubt as to D's guilt, it would be necessary to show that Geddes III was supported by sound, properly conducted scientific research. The evidence presented in *A Local Authority v S* suggests there is no such empirical support. On the contrary, what research there is, and the widespread absence of the triad in cases where there has been no trauma, critically undermine the validity of the hypothesis.

8.41 As we explained earlier in this report,[70] a minority opinion (even a lone voice) could be admissible for the defence in criminal proceedings if our test is taken forward into legislation. But to be admissible any such opinion would need to be based on the rigorous application of sound scientific principles. Hypotheses unsupported by appropriate research, and undermined by what research has been undertaken, are hardly likely to provide a sound basis for expert opinion evidence in criminal proceedings.

[65] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [225].

[66] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [226] to [235] and [247].

[67] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [247].

[68] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [247].

[69] [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [248].

[70] Paragraph 3.104.

8.42 Finally, it should always be borne in mind that an expert may not even be permitted to provide evidence at all if he or she has become so wedded to a hypothesis that he or she has lost the essential quality of impartiality.[71]

[71] Doctors C and S were also criticised in *A Local Authority v S* for opining beyond their areas of expertise, and Dr S was criticised for making an unwarranted assumption to plug a gap in their hypothesis, thereby demonstrating a lack of scientific rigour. Further criticisms were made in relation to factual inaccuracies in their evidence and for being experts who have "developed a scientific prejudice". See [2009] EWHC 2115 (Fam), [2010] 1 FLR 1560 at [249] to [285].

PART 9
SUMMARY OF RECOMMENDATIONS

A NEW RELIABILITY TEST

9.1 We recommend that there should be a statutory admissibility test which would provide that an expert's opinion evidence is admissible in criminal proceedings only if it is sufficiently reliable to be admitted ("the reliability test").

Paragraph 3.36

9.2 We recommend a rule which would provide, for the reliability test, that if there is any doubt on the matter expert evidence presented as evidence of fact should be treated as expert opinion evidence.

Paragraph 3.39

9.3 We recommend that trial judges should be provided with a single list of generic factors to help them apply the reliability test and that these factors should be set out in the primary legislation containing the test.

Paragraph 3.62

9.4 We recommend that the trial judge should be directed to take into consideration the factors which are relevant to the expert opinion evidence under consideration and any other factors he or she considers to be relevant.

Paragraph 3.63

9.5 We recommend that:

(1) criminal courts should have a limited power to disapply the reliability test so that it does not have to be applied routinely and unnecessarily;

(2) but, equally, the power to disapply must not be such that the reliability test becomes only a nominal barrier to the adduction of unreliable expert opinion evidence.

Paragraph 3.77

9.6 We recommend for our proposed reliability test that, where the test is applied, the party wishing to adduce the expert opinion evidence should bear the burden of demonstrating that it is sufficiently reliable to be admitted.

Paragraph 3.88

9.7 We recommend that there should be a single framework in primary legislation governing the admissibility of all expert evidence in criminal proceedings.

Paragraph 3.136

CODIFICATION OF THE COMMON LAW

9.8 We recommend that primary legislation should provide that expert evidence is admissible in criminal proceedings only if:

(1) the court is likely to require the help of an expert witness; and

(2) it is proved on the balance of probabilities that the individual claiming expertise is qualified to give such evidence.

9.9 We also recommend that this legislation should provide that expert evidence is inadmissible if there is a significant risk that the expert has not complied with, or will not comply with, his or her duty to provide objective and unbiased evidence, unless the court is nevertheless satisfied that it is in the interests of justice to admit the evidence.

Paragraphs 4.8 and 4.9

9.10 We recommend that the Criminal Procedure Rules be amended to include the following additional requirements:

(1) before giving oral evidence, an expert witness should be referred to his or her overriding duty to give expert evidence which is

(a) objective and unbiased, and

(b) within his or her area (or areas) of expertise;

(2) the trial judge or magistrates' court should rule on the expert witness's area (or areas) of expertise before he or she gives evidence and monitor the position to ensure that he or she does not give expert evidence on other matters.

Paragraphs 4.46

THE RELIABILITY TEST

9.11 We recommend for criminal proceedings:

(1) a statutory provision in primary legislation which would provide that expert opinion evidence is admissible only if it is sufficiently reliable to be admitted;

(2) a provision which would provide our core test that 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;

(3) a provision which would set out the following key (higher-order) examples of reasons why an expert's opinion evidence is *not* sufficiently reliable to be admitted:

(a) the opinion is based on a hypothesis which has not been subjected to sufficient scrutiny (including, where appropriate, experimental or other testing), or which has failed to stand up to scrutiny;

(b) the opinion is based on an unjustifiable assumption;

(c) the opinion is based on flawed data;

(d) the opinion relies on an examination, technique, method or process which was not properly carried out or applied, or was not appropriate for use in the particular case;

(e) the opinion relies on an inference or conclusion which has not been properly reached.

(4) a provision which would direct the trial judge to consider, where relevant, more specific (lower-order) factors in a Schedule to the Act and to any unspecified matters which appear to be relevant.

Paragraph 5.17

9.12 We recommend that a trial judge who has to determine whether an expert's opinion evidence is sufficiently reliable to be admitted should be directed to have regard to:

(1) the following factors (insofar as they appear to be relevant):

(a) the extent and quality of the data on which the expert's opinion is based, and the validity of the methods by which they were obtained;

(b) if the expert's opinion relies on an inference from any findings, whether the opinion properly explains how safe or unsafe the inference is (whether by reference to statistical significance or in other appropriate terms);

(c) if the expert's opinion relies on the results of the use of any method (for instance, a test, measurement or survey), whether the opinion takes proper account of matters, such as the degree of precision or margin of uncertainty, affecting the accuracy or reliability of those results;

(d) the extent to which any material upon which the expert's opinion is based has been reviewed by others with relevant expertise (for instance, in peer-reviewed publications), and the views of those others on that material;

(e) the extent to which the expert's opinion is based on material falling outside the expert's own field of expertise;

(f) the completeness of the information which was available to the expert, and whether the expert took account of all relevant information in arriving at the opinion (including information as to the context of any facts to which the opinion relates);

(g) whether there is a range of expert opinion on the matter in question; and, if there is, where in the range the expert's opinion lies and whether the expert's preference for the opinion proffered has been properly explained;

(h) whether the expert's methods followed established practice in the field; and, if they did not, whether the reason for the divergence has been properly explained;

(2) approved factors, if any, for assessing the reliability of the particular type of expert evidence in question (insofar as they appear to be relevant); and

(3) any other factors which appear to be relevant.

Paragraph 5.35

9.13 We recommend the following for criminal proceedings:

(1) there should be a presumption that expert opinion evidence tendered for admission is sufficiently reliable to be admitted, but this presumption would not apply if:

(a) it appears to the court, following a reasoned challenge, that the evidence might not be sufficiently reliable to be admitted, or

(b) the court independently rules that the presumption should not apply;

(2) if the presumption no longer applies, the court should direct that there be a hearing to resolve the question of evidentiary reliability, unless the question can be properly resolved without a hearing; and

(3) for Crown Court jury trials, the reliability hearing should ordinarily take place before the jury is sworn, but, exceptionally, it should be possible to hold a hearing during the trial in the absence of the jury.

Paragraph 5.56

9.14 We recommend that, if challenged on appeal, the trial judge's ruling under the reliability test should be approached by the appellate court as the exercise of a legal judgment rather than the exercise of a judicial discretion.

Paragraph 5.94

COURT-APPOINTED EXPERTS

9.15 We recommend that a Crown Court judge (for a trial on indictment) should be provided with a statutory power to appoint an independent expert to assist him or her when determining whether a party's proffered expert opinion evidence is sufficiently reliable to be admitted.

9.16 We recommend that this power should permit a Crown Court judge to appoint an independent expert only if he or she is satisfied that it would be in the interests of justice to make an appointment, having regard to:

(a) the likely importance of the expert opinion evidence in the context of the case as a whole;

(b) the complexity of that evidence, or the complexity of the question of its reliability; and

(c) any other relevant considerations.

9.17 We recommend that the judge should make his or her appointment from a shortlist of individuals prepared by an independent panel of legal practitioners, chaired by a Circuit Judge, reflecting the interests of both the prosecution and the defence.

Paragraphs 6.78 to 6.80

PROCEDURAL MATTERS

Expert reports

9.18 We recommend that Part 33 of the Criminal Procedure Rules be amended to include the following:

(1) a rule requiring an appendix to the expert's report, setting out –

(a) sufficient information to show that the expertise and impartiality requirements are satisfied; and

(b) a focused explanation of the reliability of the opinion evidence with reference to the test and relevant examples and factors in our draft Bill, concisely set out in a manner which would be readily understood by a trial judge, along with a summary of:

(i) other cases (if any) where the expert's opinion evidence has been ruled admissible or inadmissible after due enquiry under the reliability test; and

(ii) other judicial rulings after due enquiry which the expert is aware of (if any) on matters underlying the expert's opinion evidence;

(2) a rule requiring an expert's report to include –

(a) a statement explaining the extent to which the expert witness's opinion evidence is based on information falling outside his or her own field of expertise and/or on the opinions of other (named) experts;

(b) a schedule identifying the foundation material underpinning the expert witness's inferences and conclusions; and

(c) a rule that where an expert witness is called by a party to give a reasoned opinion on the likelihood of an item of evidence under a proposition advanced by that party, the expert's report must also include, where feasible, a reasoned opinion on the likelihood of the item of evidence under one or more alternative propositions (including any proposition advanced by the opposing party);

(3) an extension of rule 33.4(2) of the Criminal Procedure Rules so that, if a party seeking to adduce expert evidence does not comply with the above requirements, the evidence would be inadmissible unless all the parties agree that it should be admitted or the court gives leave for it to be admitted.

Paragraph 7.21

Other pre-trial disclosure requirements

9.19 We recommend that the Criminal Procedure Rules should require pre-trial disclosure by the parties of the following matters to the other parties and to the court:

(1) information relevant to the application of the expertise and impartiality tests;

(2) if requested, information relevant to the application of the reliability test (including, in particular, the evidence underpinning the expert's opinion); and

(3) information which could substantially undermine the credibility of the experts being relied on.

9.20 We also recommend, in line with the current position under rule 33.4(2) of the Criminal Procedure Rules 2010, that a party's failure to comply with the requirements of sub-paragraph (1) or with a request for disclosure under sub-paragraph (2), should render that party's expert evidence inadmissible, unless the judge gives leave (or all the parties agree that the evidence should be admitted).

Paragraph 7.37 and 7.38

Developing rule 33.6 of the Criminal Procedure Rules

9.21 We recommend that:

(1) Part 33 of the Criminal Procedure Rules be amended to make explicit provision for a judge-led meeting of the parties' legal representatives and experts if there is a dispute on the expert issues and the judge believes that such a meeting would be beneficial in resolving or reducing the dispute; and

(2) this power be supported by a provision similar to that now set out in rule 33.6(4) of the Rules.

Paragraphs 7.52

Directing the jury

9.22 We recommend that the Criminal Procedure Rules should provide that, for trials on indictment (before a judge and jury), if the judge determines at the end of the trial that the prosecution case depends wholly or substantially on disputed expert opinion evidence, the judge should:

(1) consider whether to provide the jury with a cautionary warning in relation to that evidence; and

(2) if a cautionary warning is thought to be appropriate, provide the jury with an appropriate warning tailored to the facts of the case.

Paragraph 7.61

(*Signed)* JAMES MUNBY, *Chairman*
ELIZABETH COOKE
DAVID HERTZELL
DAVID ORMEROD
FRANCES PATTERSON

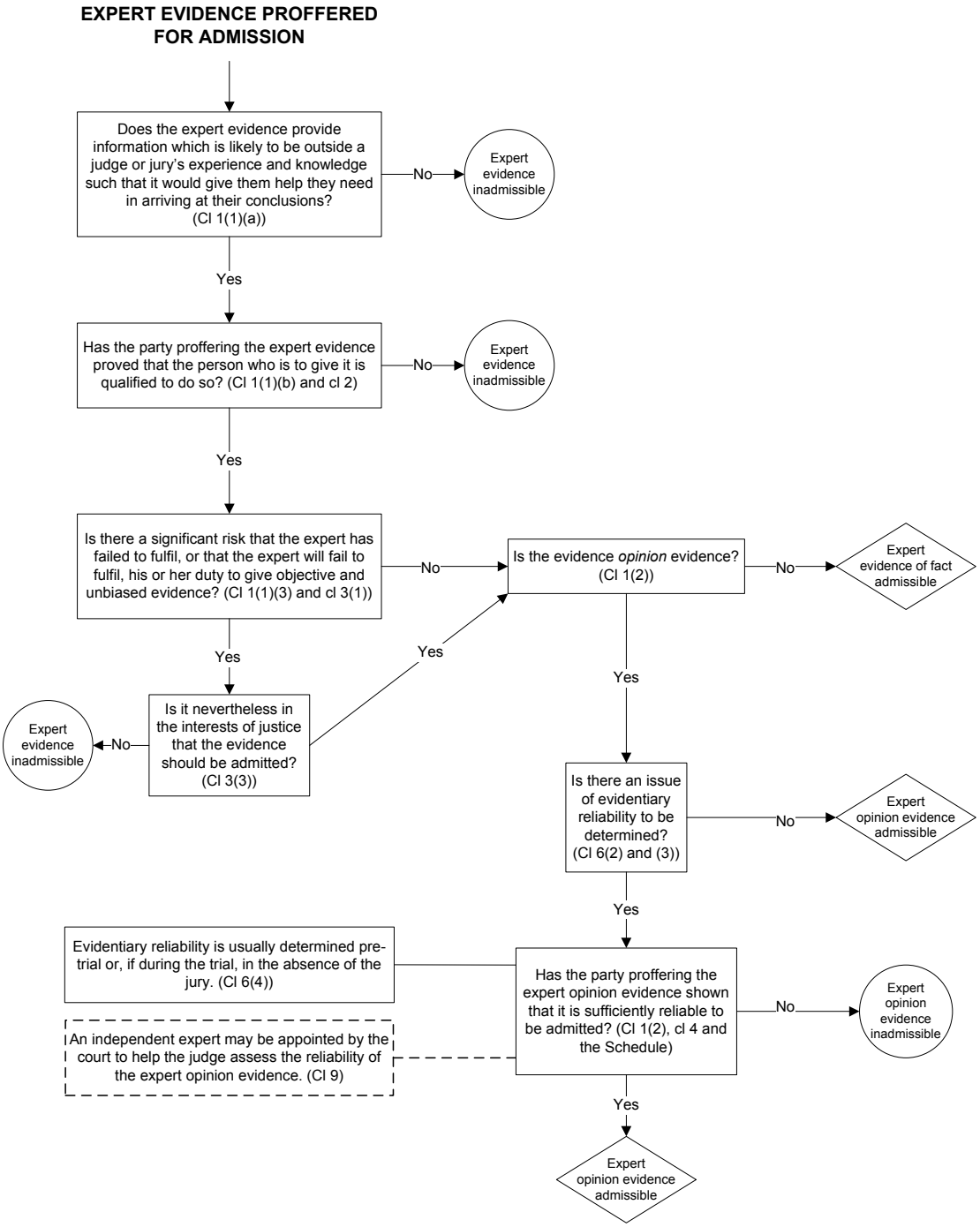
MARK ORMEROD, *Chief Executive*
21 February 2011

APPENDIX A

Criminal Evidence (Experts) Bill

CONTENTS

Admissibility of expert evidence in criminal proceedings: the basic framework



DRAFT

OF A

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TO

Make provision about expert evidence in criminal proceedings.

BE IT ENACTED by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

Admissibility

1 Basic rules

(1) Expert evidence is admissible in criminal proceedings only if—

(a) the court is satisfied that it would provide information which is likely to be outside a judge or jury's experience and knowledge, and which would give them help they need in arriving at their conclusions,

(b) the person who gives it is qualified to do so (see section 2), and

(c) the evidence is not made inadmissible as a result of section 3 (impartiality).

(2) In addition, expert opinion evidence is admissible in criminal proceedings only if it is sufficiently reliable to be admitted (see section 4).

(3) If there is a doubt about whether an expert's evidence is evidence of fact or is opinion evidence, it is to be taken to be opinion evidence.

2 "Qualified to do so"

(1) For the purposes of section 1(1)(b), a person may be qualified to give expert evidence by virtue of study, training, experience or any other appropriate means.

(2) The court must be satisfied on the balance of probabilities that the person is so qualified.

EXPLANATORY NOTES

A.1 This draft Bill would make provision about expert evidence in criminal proceedings, but only in England and Wales.[1]

Clause 1

A.2 Clause 1(1) sets out the basic admissibility rules for expert evidence in criminal proceedings, whether the evidence is expert opinion evidence or expert evidence of fact:[2]

- Paragraph (a) in effect restates the common law "*Turner* test".[3] The reference to "a judge or jury's experience and knowledge" is a reference to a notional judge or jury, so the test would be applied in magistrates' courts, in Crown Court trials (or appeals) without a jury and in Crown Court trials with a jury.

- Paragraph (b) provides that expert evidence can be given only by an individual who is an expert, in accordance with clause 2.

- Paragraph (c) provides that expert evidence cannot be admitted if rendered inadmissible by clause 3 (which sets out the impartiality requirement).

A.3 Clause 1(2) provides, in addition, that expert *opinion* evidence is admissible in criminal proceedings only if it is sufficiently reliable to be admitted (in accordance with clauses 4 and 6 and the Schedule to the Bill).

A.4 Clause 1(3) provides (for the purposes of clause 1(2)) that expert evidence presented as evidence of fact is nevertheless to be regarded by the court as expert opinion evidence if there is any doubt on the matter.

Clause 2

A.5 Clause 2 addresses the question of expertise, replacing the common law requirement of (expert) competence.[4] An individual must be "qualified" before he or she is able to provide expert evidence in criminal proceedings (clause 1(1)(b)).

A.6 Clause 2(1) lists key examples of the ways in which an individual claiming expertise can satisfy the requirement in clause 1(1)(b).

A.7 Clause 2(2) provides that the standard of proof to be applied when assessing whether or not an individual is qualified to be an expert is the balance of probabilities (that is, more likely than not). Although this subsection does not expressly provide that the burden of proof lies with the party wishing to adduce the individual's evidence, it is implicit.

1 Clause 11(6).

2 Clause 10.

3 From *Turner* [1975] QB 834; see paras 2.3 to 2.5 of this report.

4 The word "competence" is already used in the Youth Justice and Criminal Evidence Act 1999 to mean witness competence generally, so it is not used in this Bill.

3 Impartiality

(1) An expert has a duty to the court to give objective and unbiased expert evidence for the purpose of criminal proceedings.

(2) That duty overrides any obligation to the person from whom the expert receives instructions or by whom the expert is paid.

(3) If it appears to the court that there is a significant risk that the expert will not comply (or has not complied) with that duty in connection with the proceedings, the expert evidence is not admissible unless the court is satisfied that it is in the interests of justice that it should be admitted.

(4) The fact that the expert has an association (for example, an employment relationship) which could make a reasonable observer think that the expert might not comply with that duty does not in itself demonstrate a significant risk.

(5) Criminal Procedure Rules may make further provision in connection with that duty.

4 Reliability: meaning

(1) 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.

(2) Any of the following, in particular, could provide a reason for determining that expert opinion evidence is not sufficiently reliable—

(a) the opinion is based on a hypothesis which has not been subjected to sufficient scrutiny (including, where appropriate, experimental or other testing), or which has failed to stand up to scrutiny;

(b) the opinion is based on an unjustifiable assumption;

(c) the opinion is based on flawed data;

(d) the opinion relies on an examination, technique, method or process which was not properly carried out or applied, or was not appropriate for use in the particular case;

(e) the opinion relies on an inference or conclusion which has not been properly reached.

(3) When assessing the reliability of expert opinion evidence, the court must have regard to—

(a) such of the generic factors set out in Part 1 of the Schedule as appear to the court to be relevant;

(b) if any factors have been specified in an order made under Part 2 of the Schedule in relation to a particular field, such of those factors as appear to the court to be relevant;

(c) anything else which appears to the court to be relevant.

5 Reliability: reconsideration on appeal

(1) This section applies if the court hearing an appeal ("the appellate court") must determine, or thinks it appropriate to determine, whether or not a ruling to which subsection (2) applies involved an error.

EXPLANATORY NOTES

Clause 3

A.8 Subsections (1) and (2) set out the overriding duty to the court all experts have to give objective and unbiased evidence, in accordance with the position at common law[5] and as currently required by rule 33.2 of the Criminal Procedure Rules 2010.[6]

A.9 Clause 3(3) provides that where there is a significant risk that an expert will not comply, or has not complied, with his or her duty to the court in relation to the instant proceedings, the expert's evidence is inadmissible unless the court rules that it is in the interests of justice to admit it. An example of an exceptional situation where an expert's evidence might be admitted, despite a significant risk of bias, could be where the risk is relatively low (but significant), the expert's evidence would materially support the accused's defence if believed, evidentiary reliability is not in dispute and there is a dearth of alternative expert evidence for the accused to draw upon.

A.10 Clause 3(4) provides that the mere appearance of bias or partiality on account of the *fact* of an association (such as an employment relationship) does not in itself demonstrate a significant risk of the type described in clause 3(3). So, although there may be an association which might "make a reasonable observer think" that the expert might not comply with his or her overriding duty, this fact alone does not give rise to a "significant risk that the expert will not comply (or has not complied) with that duty in connection with the [instant] proceedings". The rule of inadmissibility in clause 3(3) would arise only if the particular factual nature of the association is such that it appears to the court that there is a real, significant risk of non-compliance with that duty.

A.11 Clause 3(5) provides the Criminal Procedure Rules Committee with the power to create further rules relating to the expert's overriding duty.

Clause 4 (and the Schedule)

A.12 Clause 4(1) sets out the basic reliability test for expert opinion evidence (see clause 1(2)).

A.13 Clause 4(2) provides five key reasons for ruling that a party's expert opinion evidence is insufficiently reliable to be admitted. The list in this subsection is not exhaustive.

A.14 Clause 4(3) directs the court to consider relevant factors in Part 1 of the Schedule (and relevant "specified" factors for a particular field, if any) when determining whether or not a party's expert opinion evidence is sufficiently reliable to be admitted. The court is also directed to have regard to anything else which appears to be relevant. Part 1 of the Schedule lists eight generic factors which have a bearing on the evidentiary reliability of expert opinion evidence, supplementing the higher-level reasons listed in clause 4(2).

Clause 5

A.15 Clause 5 sets out the rules for the situation where a magistrates' court or Crown Court ruling on the admissibility of expert opinion evidence under clause 1(2) (with reference to clause 4) is addressed by an appellate court.[7] The rules apply whether the appellate court has to determine the issue or simply decides in its discretion to consider the issue.[8]

5 *Harris* [2005] EWCA Crim 1980, [2006] 1 Cr App R 5 at [271]; *Bowman* [2006] EWCA Crim 417, [2006] 2 Cr App R 3 at [176].

6 Rule 33.2(1)–(2) would be removed from the Rules if this draft Bill is enacted, but r 33.2(3) would remain (albeit amended to encompass expert evidence of fact as well as expert opinion evidence). Part 33 of the 2010 Rules is set out as Appendix B to this report.

7 See cl 5(2).

8 See cl 5(1).

(2) This subsection applies to a ruling made by a magistrates' court or the Crown Court ("the original court") as to whether expert opinion evidence was, or was not, sufficiently reliable to be admitted in particular criminal proceedings.

(3) For the purposes of subsection (2) it does not matter whether the ruling was express, or was implied by the original court's admission of the evidence.

(4) The appellate court is to make its own determination of whether or not the evidence was (or, as the case may be, is) sufficiently reliable to be admitted.

(5) So far as that determination is inconsistent with the ruling made by the original court, the appellate court is to be taken to have determined that the ruling is wrong in law (and may exercise its powers to dispose of the appeal accordingly).

(6) In this section—

"appeal" means an appeal or application to the High Court, the criminal division of the Court of Appeal or the Supreme Court, other than an application for judicial review, and

references to a ruling made by the Crown Court include a ruling made by a judge of the Crown Court.

Procedural matters

6 Reliability: procedural matters

(1) This section applies if a party to criminal proceedings proposes to adduce expert opinion evidence.

(2) If a representation is made to the court that the evidence is not sufficiently reliable to be admitted, and it appears to the court that it might not be, it is for the party proposing to adduce the evidence to show that it is.

(3) As a condition of allowing the party to adduce the evidence, the court may of its own motion require the party to show that it is sufficiently reliable to be admitted.

(4) In the Crown Court, in a trial on indictment with a jury, if the question whether or not expert evidence is sufficiently reliable to be admitted has not been determined before the jury is sworn, it is to be determined in the absence of the jury.

7 Reliability: procedure in magistrates' courts

(1) A magistrates' court which determines the question whether or not expert opinion evidence is sufficiently reliable to be admitted in criminal proceedings ("the question") must be composed of a District Judge (Magistrates' Courts)—

(a) when it determines the question, and

(b) during any subsequent part of the proceedings.

(2) If the question arises in circumstances in which the court could hold a pre-trial hearing on it, the court must do so unless it appears to the court that it would not be in the interests of justice to make a ruling on the question at such a hearing.

(3) Criminal Procedure Rules may make further provision about the composition of a magistrates' court which determines the question, including—

A.16 Clause 5(4) provides that, when a ruling on the evidentiary reliability of expert opinion evidence is addressed on appeal,[9] the question is not whether the ruling was a reasonable one for the court to have made but whether or not the evidence was (or is)[10] sufficiently reliable to be admitted. So, importantly, the ruling will not be addressed on appeal as one made pursuant to the exercise of a judicial discretion.

A.17 Clause 5(5) provides that if the appellate court's conclusion is different from the ruling, the ruling is wrong in law. The appellate court will then act accordingly to rectify the error.

Clause 6

A.18 Clause 6(2) provides that it is for the party seeking to adduce expert opinion evidence to show that it is sufficiently reliable to be admitted, but only if it appears to the court, following a party's representation, that the evidence might not be sufficiently reliable to be admitted. For the purposes of this subsection, there is a weak presumption of sufficient reliability (in respect of admissibility) which stands until a party presents a credible argument for setting it aside. It will be set aside if it appears to the court that the opinion evidence might not be sufficiently reliable to be admitted.

A.19 No such presumption applies in subsection (3).[11] This provision allows the court to require the party proffering the expert opinion evidence to show that it is sufficiently reliable to be admitted even though the requirements of subsection (2) have not been met. The courts are unlikely to exercise this power very often, but they will do so if there is an appearance of unreliability which has not been raised by a party or perhaps if there is a morass of confusing information which needs to be properly marshalled.

A.20 If the party proffering expert opinion evidence is required to show that it is sufficiently reliable to be admitted, there is no requirement that this be proved to any particular standard of proof; but that party must demonstrate to the court's satisfaction that the opinion is "soundly based"[12] and that the strength of the opinion is warranted having regard to its basis.[13] Evidentiary reliability will ordinarily be addressed at a pre-trial hearing ("before the jury is sworn"),[14] but if the issue needs to be addressed during the trial, the jury must not be present.[15]

Clause 7

A.21 Clause 7 sets out the procedure for magistrates' courts. Subsections (1) to (3) provide that where it appears to the court that proffered expert opinion evidence might not be sufficiently reliable to be admitted, then (subject to exceptions in the Criminal Procedure Rules) the question will be addressed by a District Judge (Magistrates' Courts), usually at a pre-trial hearing, and that judge will then try the case.[16]

[9] An appeal to the High Court, Court of Appeal (Criminal Division) or the Supreme Court; see cl 5(6).

[10] For interlocutory appeals.

[11] That is, cl 6(3) allows the court to set aside the presumption in clause 6(2).

[12] Clause 4(1)(a).

[13] Clause 4(1)(b).

[14] Clause 6(4).

[15] Clause 6(4).

[16] For the meaning of pre-trial hearing, see cl 7(6), referring to s 8A of the Magistrates' Courts Act 1980. Clause 7(2) refers to the "interests of justice" test in s 8A(3)(c) of the 1980 Act.

(a) exceptions in relation to subsection (1),

(b) provision specifying circumstances in which a trial which has begun otherwise than before a District Judge (Magistrates' Courts) may be terminated, and a new trial started before a District Judge (Magistrates' Courts).

(4) Provision made by virtue of subsection (3) may confer a discretion on a court.

(5) Section 121(6) of the Magistrates' Courts Act 1980 is not to be taken to prevent the making under subsection (3)(a) of provision for the court to be composed of a District Judge (Magistrates' Courts) during part, but not the whole, of the proceedings before it.

(6) In this section—

"pre-trial hearing" has the same meaning as in section 8A of the Magistrates' Courts Act 1980;

"trial" includes a trial of the facts following a plea of guilty.

8 Disclosure

(1) Criminal Procedure Rules may include—

(a) provision for the disclosure by a party to criminal proceedings of information relevant to the question whether expert evidence which the party proposes to adduce in the proceedings is admissible by virtue of section 1(1)(b) or (c) or (2),

(b) provision for the disclosure by a party to criminal proceedings of information that might reasonably be thought capable of substantially detracting from the credibility of an expert on whom the party proposes to rely,

(c) provision prohibiting (except in such circumstances, if any, as are specified in the Rules) a party who fails to comply with a requirement imposed by virtue of paragraph (a) or (b) from adducing the expert evidence in question in the proceedings.

(2) The information in relation to which provision may be made by virtue of subsection (1)(a) and (b) includes information that would otherwise be privileged from disclosure on the ground that it is contained in a communication made in connection with or in contemplation of legal proceedings and for the purposes of such proceedings.

(3) But no provision may be made by virtue of subsection (2) in relation to information contained in a communication from a defendant, or a person acting on a defendant's behalf, to an expert.

Court-appointed experts

9 Court-appointed experts

(1) Subsections (2) to (7) apply where the Crown Court has to determine whether expert opinion evidence which a party proposes to adduce in a trial on indictment is sufficiently reliable to be admitted.

(2) The court may appoint another expert to help it determine that question if satisfied that it would be in the interests of justice to do so, having regard to—

A.22 Subsections (3) to (5) of clause 7 set out new powers for the Criminal Procedure Rules Committee to create procedural rules, including exceptions to the rule in subsection (1). These exceptions could in certain circumstances permit:

- a bench of magistrates (rather than a District Judge) to determine evidentiary reliability;[17]
- a bench of magistrates to try the case once a District Judge has determined evidentiary reliability;
- a bench of magistrates to terminate a trial and rule that it be restarted before a District Judge (who would then determine evidentiary reliability and try the case in accordance with subsection (1)).[18]

A.23 The reference in subsection (6) to "a trial of the facts following a plea of guilty" refers to a *Newton* hearing. A *Newton* hearing is a hearing to determine the facts where there is a dispute following a guilty plea (so that an appropriate sentence can be passed).

Clause 8

A.24 Clause 8(1)(a) and (b) provides the Criminal Procedure Rules Committee with the power to create rules requiring the pre-trial disclosure of information relevant to the admissibility of expert evidence (under clause 1(1)(b), clause 1(1)(c) or clause 1(2)) and information which could have a substantial adverse impact on an expert's credibility.

A.25 By virtue of clause 8(2), this power would permit the creation of rules which would require the disclosure of such information in communications currently protected from disclosure by "litigation privilege" (but not if the communications are from the party or the party's agent to the expert[19] or if the information is protected by another head of privilege). A legal representative would therefore have to disclose information which had been communicated to him or her by an expert witness – for example, evidence that the expert is biased or untruthful or facts suggesting that the expert's opinion is unreliable – even if it was communicated in confidence.

A.26 Clause 8(1)(c) would allow the Criminal Procedure Rules Committee to create a rule prohibiting the adduction of expert evidence by a party who has failed to comply with disclosure rules made under this clause.

Clause 9

A.27 This clause would allow a Crown Court judge for a trial on indictment to call upon a further expert witness (a court-appointed expert) in a hearing convened to determine the evidentiary reliability of a party's proffered expert opinion evidence.

A.28 Clause 9(2) provides the "interests of justice" test which would determine whether the case is one which warrants having a court-appointed expert.

[17] The magistrates would be guided by their legal adviser.

[18] Clause 7(3)(b).

[19] Clause 8(3).

(a) the likely importance of the evidence in the context of the case as a whole,
(b) the complexity of the evidence or of the question of its reliability, and
(c) any other relevant considerations.

(3) The other expert must be a person nominated for the purpose of the particular proceedings—
(a) by a selection panel established by the Lord Chancellor, and
(b) in accordance with any procedure specified by the Lord Chancellor.

(4) The selection panel must if practicable nominate a number of persons, and if it does the court may appoint any of them.

(5) The remuneration to be paid to an expert appointed under this section is to be determined by the Lord Chancellor, and is to be paid out of central funds.

(6) The nomination and appointment of experts under this section, and the procedure to be followed in relation to their evidence, are subject to any further provision in Criminal Procedure Rules.

(7) The duty in section 3(1) applies to experts appointed under this section, but otherwise sections 1 to 8 do not apply in relation to their evidence.

(8) The Crown Court has no power apart from this section to appoint an expert to help it determine the question mentioned in subsection (1); and a magistrates' court has no such power in relation to criminal proceedings before it.

Final provisions

10 Interpretation

In this Act—

"criminal proceedings" means criminal proceedings in relation to which the strict rules of evidence apply;

references to an expert are to a person who gives, or is to give, expert evidence;

references to expert evidence, however expressed, include all such evidence, in any form and however given.

11 Short title, commencement, application and extent

(1) This Act may be cited as the Criminal Evidence (Experts) Act 2011.

(2) Section 10 and this section come into force on the day on which this Act is passed, but otherwise this Act comes into force on such day as the Lord Chancellor may by order made by statutory instrument appoint.

(3) An order made under subsection (2) may appoint different days for different purposes.

(4) Nothing in this Act affects—
(a) any power of the court to exclude expert evidence at its discretion (whether by preventing questions from being put or otherwise), or
(b) any rule of law (except so far as inconsistent with the provisions of this Act), or any other enactment, so far as either relates to the admissibility of expert evidence.

A.29 Subsections (3) to (6) of clause 9 set out rules, or the power to create procedural rules, relating to the appointment process and payment of fees. In particular, subsections (3) and (4) provide that a selection panel must be convened and that the panel must (if practicable) nominate a shortlist of experts from which list the trial judge would make his or her appointment.

A.30 Clause 9(7) provides that, save for one exception, clauses 1 to 8 of the Bill do not apply to the evidence of court-appointed experts, the reason being that the selection panel will scrutinise any such individual for his or her expertise and the court-appointed expert's opinion is not one which (in the present context) is being tendered for admission before a jury or equivalent fact-finding magistrates' court.

A.31 The one exception mentioned in the previous paragraph is that a court-appointed expert is under the same duty as any other expert to provide evidence which is objective and unbiased (see clause 3(1)).

A.32 Clause 9(8) provides that there is no other power beyond the new rule in this clause to appoint an expert to assist in the determination of evidentiary reliability (under the admissibility test in clauses 1(2) and 4), whether in the Crown Court or in a magistrates' court. The subsection expressly provides that a magistrates' court has no power at all to appoint an expert in this context.

Clause 10

A.33 Clause 10 explains some expressions used in the Bill:

- in line with the evidence provisions in the Criminal Justice Act 2003, the term "criminal proceedings" is limited to criminal proceedings to which the strict rules of the law of evidence apply (including criminal trials and *Newton* hearings);[20]

- an expert is a person who is to give (or gives) expert evidence in criminal proceedings;

- references to expert evidence and expert opinion evidence "include all such evidence, in any form and however given", so "expert evidence" includes expert evidence of fact or opinion (or both), and any reference to expert evidence or expert opinion evidence includes such evidence given orally in court or in a written report.

Clause 11

A.34 Save for subsection (4), this clause is self-explanatory.

A.35 Subsection (4) provides that the provisions in the Bill do not affect other existing statutory or common law rules relating to the admissibility of expert evidence (such as the rules governing the admissibility of hearsay evidence). The subsection also provides that the judicial discretions criminal courts currently have at common law or under statute to exclude evidence continue to operate in relation to expert evidence.

[20] See *Bradley* [2005] EWCA Crim 20, [2005] 1 Cr App R 24 at [29] and [36]. For *Newton* hearings, see para A.23 above.

(5) This Act does not affect criminal proceedings in which any person has entered a plea before sections 1 to 8 have come fully into force.

(6) This Act extends to England and Wales only.

SCHEDULE

Section 4(3)

RELIABILITY: FACTORS

PART 1

GENERIC FACTORS

1 The factors referred to in section 4(3)(a) are as follows.

(a) The extent and quality of the data on which the opinion is based, and the validity of the methods by which they were obtained.

(b) If the opinion relies on an inference from any findings, whether the opinion properly explains how safe or unsafe the inference is (whether by reference to statistical significance or in other appropriate terms).

(c) If the opinion relies on the results of the use of any method (for instance, a test, measurement or survey), whether the opinion takes proper account of matters, such as the degree of precision or margin of uncertainty, affecting the accuracy or reliability of those results.

(d) The extent to which any material upon which the opinion is based has been reviewed by others with relevant expertise (for instance, in peer-reviewed publications), and the views of those others on that material.

(e) The extent to which the opinion is based on material falling outside the expert's own field of expertise.

(f) The completeness of the information which was available to the expert, and whether the expert took account of all relevant information in arriving at the opinion (including information as to the context of any facts to which the opinion relates).

(g) Whether there is a range of expert opinion on the matter in question; and, if there is, where in the range the opinion lies and whether the expert's preference for the opinion proffered has been properly explained.

(h) Whether the expert's methods followed established practice in the field; and, if they did not, whether the reason for the divergence has been properly explained.

2 These factors are not arranged in any hierarchical order.

PART 2

FACTORS FOR SPECIFIC FIELDS

3 The Lord Chancellor may by order made by statutory instrument provide for other factors relevant to specific fields of expertise.

4 An order made under paragraph 3 must—

(a) state the field to which the factors are relevant, and

(b) set out the factors in question.

5 A statutory instrument containing an order made under paragraph 3 is subject to annulment in pursuance of a resolution of either House of Parliament.

PART 3

AMENDMENT OF PART 1 FACTORS

6 The Lord Chancellor may by order made by statutory instrument amend paragraph 1 of this Schedule so as to add, omit or amend any factor.

7 A statutory instrument containing an order under paragraph 6 may not be made unless a draft of the instrument has been laid before and approved by a resolution of each House of Parliament.

APPENDIX B
PART 33 OF THE CRIMINAL PROCEDURE RULES 2010

PART 33

EXPERT EVIDENCE

Contents of this Part

[Note. For the use of an expert report as evidence, see section 30 of the Criminal Justice Act 1988(**a**)*.]*

Reference to expert

33.1. A reference to an 'expert' in this Part is a reference to a person who is required to give or prepare expert evidence for the purpose of criminal proceedings, including evidence required to determine fitness to plead or for the purpose of sentencing.

[Note. Expert medical evidence may be required to determine fitness to plead under section 4 of the Criminal Procedure (Insanity) Act 1964(**b**)*. It may be required also under section 11 of the Powers of Criminal Courts (Sentencing) Act 2000*(**c**)*, under Part III of the Mental Health Act 1983*(**d**) *or under Part 12 of the Criminal Justice Act 2003*(**e**)*. Those Acts contain requirements about the qualification of medical experts.]*

Expert's duty to the court

33.2.—(1) An expert must help the court to achieve the overriding objective by giving objective, unbiased opinion on matters within his expertise.

(**a**) 1988 c. 33; section 30(4A) was inserted by section 47 of, and paragraph 32 of Schedule 1 to, the Criminal Procedure and Investigations Act 1996 (c. 25) and is repealed by section 41 to, and paragraph 60(1) and (6) of Schedule 3 and Schedule 37 to, the Criminal Justice Act 2003 (c. 44), with effect from a date to be appointed.

(**b**) 1964 c. 84; section 4 was substituted, together with section 4A, for section 4 as originally enacted, by section 2 of the Criminal Procedure (Insanity and Unfitness to Plead) Act 1991 (c. 25), and amended by section 22 of the Domestic Violence, Crime and Victims Act 2004 (c. 28).

(**c**) 2000 c. 6.

(**d**) 1983 c. 20.

(**e**) 2003 c. 44.

(2) This duty overrides any obligation to the person from whom he receives instructions or by whom he is paid.

(3) This duty includes an obligation to inform all parties and the court if the expert's opinion changes from that contained in a report served as evidence or given in a statement.

Content of expert's report

33.3.—(1) An expert's report must—

(a) give details of the expert's qualifications, relevant experience and accreditation;

(b) give details of any literature or other information which the expert has relied on in making the report;

(c) contain a statement setting out the substance of all facts given to the expert which are material to the opinions expressed in the report, or upon which those opinions are based;

(d) make clear which of the facts stated in the report are within the expert's own knowledge;

(e) say who carried out any examination, measurement, test or experiment which the expert has used for the report and—

(i) give the qualifications, relevant experience and accreditation of that person,

(ii) say whether or not the examination, measurement, test or experiment was carried out under the expert's supervision, and

(iii) summarise the findings on which the expert relies;

(f) where there is a range of opinion on the matters dealt with in the report—

(i) summarise 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;

(h) contain a summary of the conclusions reached;

(i) contain a statement that the expert understands his duty to the court, and has complied and will continue to comply with that duty; and

(j) contain the same declaration of truth as a witness statement.

(2) Only sub-paragraphs (i) and (j) of rule 33.3(1) apply to a summary by an expert of his conclusions served in advance of that expert's report.

[Note. Part 27 contains rules about witness statements. Declarations of truth in witness statements are required by section 9 of the Criminal Justice Act 1967(**a**) *and*

(**a**) 1967 c. 80; section 9 was amended by section 56 of and paragraph 49 of Schedule 8 to, the Courts Act 1971 (c. 23), section 69 of the Criminal Procedure and Investigations Act 1996 (c. 25), section 168 of, and paragraph 6 of Schedule 9 to, the Criminal Justice and Public Order Act 1994 (c. 33) and regulation 9 of, and paragraph 4 of Schedule 5 to S.I. 2001/1090. It is amended by section 72 of, and paragraph 55 of Schedule 5 to, the Children and Young Persons Act 1969 (c. 54), section 65, and paragraph 1 of Schedule 4 to, the Courts Act 2003 (c. 39) and sections 41 and 332 of, and paragraph 43 of Schedule 3 and Part 4 of Schedule 37 to, the Criminal Justice Act 2003 (c. 44), with effect from a date to be appointed.

section 5B of the Magistrates' Courts Act 1980(**a**)*. A party who accepts another party's expert's conclusions may admit them as facts under section 10 of the Criminal Justice Act 1967*(**b**)*. Evidence of examinations etc. on which an expert relies may be admissible under section 127 of the Criminal Justice Act 2003*(**c**)*.]*

Service of expert evidence

33.4.—(1) A party who wants to introduce expert evidence must—

(a) serve it on—

(i) the court officer, and

(ii) each other party;

(b) serve it—

(i) as soon as practicable, and in any event

(ii) with any application in support of which that party relies on that evidence; and

(c) if another party so requires, give that party a copy of, or a reasonable opportunity to inspect—

(i) a record of any examination, measurement, test or experiment on which the expert's findings and opinion are based, or that were carried out in the course of reaching those findings and opinion, and

(ii) anything on which any such examination, measurement, test or experiment was carried out.

(2) A party may not introduce expert evidence if that party has not complied with this rule, unless–

(a) every other party agrees; or

(b) the court gives permission.

[Note. Under section 81 of the Police and Criminal Evidence Act 1984(**d**)*, and under section 20(3) of the Criminal Procedure and Investigations Act 1996*(**e**)*, rules may—*

(a) require the disclosure of expert evidence before it is introduced as part of a party's case; and

(b) prohibit its introduction without the court's permission, if it was not disclosed as required.]

Expert to be informed of service of report

33.5. A party who serves on another party or on the court a report by an expert must, at once, inform that expert of that fact.

(**a**) 1980 c. 43; section 5B was inserted by section 47 of, and paragraph 3 of Schedule 1 to, the Criminal Procedure and Investigations Act 1996 (c. 25), and is amended by section 72(3) of, and paragraph 55 of Schedule 5 to, the Children and Young Persons Act 1969 (c. 54), with effect from a date to be appointed. It is repealed by sections 41 and 332 of, and paragraph 51(1) and (3) of Schedule 3 and Schedule 37 to, the Criminal Justice Act 2003 (c. 44), with effect from a date to be appointed.

(**b**) 1967 c. 80.

(**c**) 2003 c. 44; section 127 was amended by article 3 of, and paragraphs 45 and 50 of the Schedule to, S.I. 2004/2035.

(**d**) 1984 c. 60; section 81 was amended by section 109(1) of, and paragraph 286 of Schedule 8 to, the Courts Act 2003 (c. 39).

(**e**) 1996 c. 25; section 20(3) was amended by section 109(1) of, and paragraph 378 of Schedule 8 to, the Courts Act 2003 (c. 39).

Pre-hearing discussion of expert evidence

33.6.—(1) This rule applies where more than one party wants to introduce expert evidence.

(2) The court may direct the experts to—

(a) discuss the expert issues in the proceedings; and

(b) prepare a statement for the court of the matters on which they agree and disagree, giving their reasons.

(3) Except for that statement, the content of that discussion must not be referred to without the court's permission.

(4) A party may not introduce expert evidence without the court's permission if the expert has not complied with a direction under this rule.

[Note. At a pre-trial hearing, a court may make binding rulings about the admissibility of evidence and about questions of law under section 7 of the Criminal Justice Act 1987(**a**)*; sections 31 and 40 of the Criminal Procedure and Investigations Act 1996*(**b**)*; and section 45 of the Courts Act 2003*(**c**)*.]*

Court's power to direct that evidence is to be given by a single joint expert

33.7.—(1) Where more than one defendant wants to introduce expert evidence on an issue at trial, the court may direct that the evidence on that issue is to be given by one expert only.

(2) Where the co-defendants cannot agree who should be the expert, the court may—

(a) select the expert from a list prepared or identified by them; or

(b) direct that the expert be selected in another way.

Instructions to a single joint expert

33.8.—(1) Where the court gives a direction under rule 33.7 for a single joint expert to be used, each of the co-defendants may give instructions to the expert.

(2) When a co-defendant gives instructions to the expert he must, at the same time, send a copy of the instructions to the other co-defendant(s).

(3) The court may give directions about—

(a) the payment of the expert's fees and expenses; and

(b) any examination, measurement, test or experiment which the expert wishes to carry out.

(4) The court may, before an expert is instructed, limit the amount that can be paid by way of fees and expenses to the expert.

(**a**) 1987 c. 38; section 7 was amended by section 168(1) of, and paragraph 30 of Schedule 9 to, the Criminal Justice and Public Order Act 1994 (c. 33) and section 80 of, and paragraph 2 of Schedule 3 and Schedule 5 to, the Criminal Procedure and Investigations Act 1996 (c. 25). It has been further amended by sections 45 and 310 of, and paragraphs 52 and 53 of Schedule 36 to, the Criminal Justice Act 2003 (c. 44), for certain purposes, with effect from 24 July 2006, and for remaining purposes from a date to be appointed).

(**b**) 1996 c. 25; section 31 was amended by sections 310, 331 and 332 of, and paragraphs 20, 36, 65 and 67 of Schedule 36 and Schedule 37 to, the Criminal Justice Act 2003 (c. 44).

(**c**) 2003 c. 39.

(5) Unless the court otherwise directs, the instructing co-defendants are jointly and severally liable for the payment of the expert's fees and expenses.

Court's power to vary requirements under this Part

33.9.—(1) The court may—

(a) extend (even after it has expired) a time limit under this Part;

(b) allow the introduction of expert evidence which omits a detail required by this Part.

(2) A party who wants an extension of time must—

(a) apply when serving the expert evidence for which it is required; and

(b) explain the delay.

APPENDIX C

The admissibility of expert evidence in criminal proceedings in England and Wales

Lead department or agency:
The Law Commission
Other departments or agencies:
Ministry of Justice

Impact Assessment (IA)
IA No: LAWCOM0002
Date: 22 March 2010
Stage: Final
Source of intervention: Domestic
Type of measure: Primary legislation
Contact for enquiries on this project: Raymond Emson: 020 3334 0272

Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

The admissibility of expert evidence in criminal trials is governed by an unduly liberal, common law "relevance and reliability" test; and judges have little, if any, guidance on how they should determine reliability. Expert evidence can therefore be admitted without sufficient enquiry into its reliability, which means that juries may rely on unreliable expert evidence in reaching their verdicts. There have been a number of wrongful convictions involving unreliable expert evidence in recent years, suggesting a real, ongoing problem. Government intervention is required to replace the common law approach with a more robust admissibility test, and to provide judges with the guidance they need in order to apply it.

What are the policy objectives and the intended effects?

The policy objectives for our proposals are:

- to provide a more robust admissibility test, so that only reliable expert evidence is admitted;
- to provide judges with uniform criteria against which to assess reliability; and
- to encourage parties to tender only reliable expert evidence for admission.

The effects will be:

- to improve the reliability of expert evidence used in criminal proceedings; and
- to avoid wrongful convictions and acquittals based on unreliable expert evidence.

What policy options have been considered? Please justify preferred option (further details in Evidence Base)

Option 0: Do nothing.

Option 1: Judicial assessment of evidentiary reliability (including both 1A and 1B). Codification of the uncontroversial common law admissibility requirements for expert evidence, a new statutory reliability test to govern the admissibility of expert opinion evidence and guidelines to assist the judge when determining the evidentiary reliability of expert opinion evidence.

1A: Amendments to the rules on pre-trial disclosure and the introduction of a judge-led meeting of experts (with parties).

1B: New judicial power to appoint a further expert witness to assist in the determination of evidentiary reliability and the introduction of a selection system to guarantee the suitability of such experts; but the power to be used only exceptionally, if it is in the interests of justice.

Option 1 is the preferred option because it offers the best solution to the problems and was broadly supported by consultees.

Option 2: Judicial assessment of evidentiary reliability (including 1A, but excluding 1B).

When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?	It will not be reviewed
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	Not applicable

Chair's Sign-off For final proposal stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Chair:..... Date:.....

URN 10/899 Ver. 1.0 04/10

Summary: Analysis and Evidence

Policy Option 1

Description: Judicial assessment of evidentiary reliability (including 1A and 1B).

Price Base Year 09/10	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: +£16.641	**High: -£45.379**	**Best Estimate: +£3.565**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£0.473	5	£0.000	**£0.473**
High	£1.177		£9.547	**£80.222**
Best Estimate	£0.766[1]		£2.582	**£22.151**

Description and scale of key monetised costs by 'main affected groups'

Criminal justice system – **Transitional costs**: JSB (training of legal professionals): £5,000 in year 0; CPS/LSC/HMCS (increased appeals over 5 years): £65,000 annually; experts (experts' appendices) (1A): £468,000 in year 0. **Ongoing costs**: Experts/Police/CPS/LSC/HMCS (annual increase in pre-trial hearings under the new test): £1,607,097; (increase in judge-led pre-trial meetings) (1A): £1,607,097; MoJ/HMCS (costs of panel and fees for witnesses) (1B): £13,209.

Other key non-monetised costs by 'main affected groups' None

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	£0	0	£2.060	**£17.114**
High	£0		£4.205	**£34.843**
Best Estimate	£0		£3.101	**£25.716**

Description and scale of key monetised benefits by 'main affected groups'

Criminal justice system – **Ongoing benefits**: Individuals/HMCS/LSC/CPS/Police (reduction in trials): £1,472,800; (shorter trials if less evidence is tendered): £775,108; (savings in experts' fees if fewer reports are commissioned): £19,917; (reduction in appeals): £50,000; (reduction in trial time from judge-led meetings) (1A): £542,867; (reduction in pre-trial discussions) (1A): £234,989; (shorter trials from court appointed expert) (1B): £20,798.

Other key non-monetised benefits by 'main affected groups'

Criminal justice system: improved justice with fewer wrongful convictions, fewer wrongful acquittals; enhanced public confidence; increased clarity, consistency and uniformity of law; benefits to the lives and wellbeing of persons who would otherwise be wrongly convicted (and their families).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5%

Key assumptions: Appeals are heard by the Court of Appeal and each costs £25,000. 95% of expert evidence tendered in the Crown Court and 98% tendered in the magistrates' courts will pass the new test. An item of expert evidence adds three hours to the trial in the Crown Court and one hour in a magistrates' court. Experts are paid £156 per hour. A wrongful conviction costs at least £123,548.

Sensitivities: Between 0 and 5 (2 best) additional appeals in years 1 to 5. Between 1 and 3 (2 best) fewer appeals annually. Between 0% (low) and 40% (high) of expert evidence which would not pass the test will still be tendered for admission. Pre-trial hearings will take 0.5 to 3 days (1 best) in the Crown Court and 1 hour to 1 day (0.5 days best) in a magistrates' court. Judge-led meetings of experts will take 0.5 to 1 day (1 best). Judge-led meetings of experts will be used in 0% to 2.5% (2% best) of cases where expert evidence is tendered. The power under 1B to appoint an independent expert will be used between 0 and 10 (5 best) times a year.

Risks: Possible increase in appeals under the new test, increasing costs. The test could reveal deficiencies in documentation, and corrections to meet its requirements would result in higher costs for businesses. Judge-led, pre-trial hearings under 1A might be used more often and the power exercised under 1B might also be used more often. The independent panel selecting court-appointed experts might not work on a voluntary basis, resulting in higher costs.

Direct impact of business(Equivalent Annual £m)			In scope of OOIO	Measure qualifies as:
Costs: £0.468	**Benefits:** £0	**Net:** -£0.468	In	In

[1] Figures reflect the present value of transitional costs, not the annual transitional cost.

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			England and Wales		
From what date will the policy be implemented?			Unknown		
Which organisation(s) will enforce the policy?			The Judiciary of England and Wales and lay magistrates.		
What is the annual change in enforcement cost (£m)?			£0		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			Yes		
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** 0	**Non-traded:** 0	
Does the proposal have an impact on competition?			No		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			**Costs:** 100%	**Benefits:** 100%	
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	**Micro** £0	**< 20** £0	**Small** £0	**Medium** £0	**Large** £0
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on…?	**Impact**	**Page ref within IA**
Statutory equality duties[2] Statutory Equality Duties Impact Test guidance	No	203
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	203
Small firms Small Firms Impact Test guidance	Yes	203
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	204
Wider environmental issues Wider Environmental Issues Impact Test guidance	No	204
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	Yes	204
Human rights Human Rights Impact Test guidance	Yes	Throughout
Justice system Justice Impact Test guidance	Yes	Throughout
Rural proofing Rural Proofing Impact Test guidance	No	204
Sustainable development Sustainable Development Impact Test guidance	No	204

[2] Race, disability and gender impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the relevant provisions of the Equality Act 2010 come into force.

Summary: Analysis and Evidence

Policy Option 2

Description: Judicial assessment of evidentiary reliability (including 1A but excluding 1B)

Price Base Year 09/10	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: +£16.641	High:-£45.867	Best Estimate: +£3.504

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£0.473	5	£0	**£0.473**
High	£1.177		£9.501	**£79.841**
Best Estimate	£0.766[3]		£2.569	**£22.040**

Description and scale of key monetised costs by 'main affected groups'

Criminal justice system – **Transitional costs**: JSB (training of legal professionals): £5,000 in year 0; CPS/LSC/HMCS (increased appeals over 5 years): £65,000 annually; experts (experts' appendices) (1A): £468,000 in year 0.

Ongoing costs: Experts/CPS/Police/LSC/HMCS (annual increase in pre-trial hearings under the new test): £962,122; (increase in judge-led pre-trial meetings) (1A): £1,607,097.

Other key non-monetised costs by 'main affected groups' None

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	£0	0	£2.060	**£17.114**
High	£0		£4.050	**£33.974**
Best Estimate	£0		£3.079	**£25.544**

Description and scale of key monetised benefits by 'main affected groups'

Criminal justice system – **Ongoing benefits**: Individuals/HMCS/LSC/CPS/Police (reduction in trials): £1,472,800; (shorter trials if less evidence is tendered): £775,108; (savings in experts' fees if fewer reports are commissioned): £19,917; (reduction in appeals): £50,000; (reduction in trial time from judge-led meetings) (1A): £542,867; (reduction in pre-trial discussions) (1A): £234,989.

Other key non-monetised benefits by 'main affected groups'

Criminal justice system: improved justice with fewer wrongful convictions and acquittals and enhanced public confidence; increased clarity, consistency and uniformity of law; benefits to the lives and wellbeing of persons who would otherwise be wrongly convicted (and their families).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5%

Key assumptions: Appeals are heard by the Court of Appeal and each costs £25,000. 95% of expert evidence tendered in the Crown Court and 98% tendered in the magistrates' courts will pass the new test. An item of expert evidence adds three hours to the trial in the Crown Court and one hour in a magistrates' court. Experts are paid £156 per hour. A wrongful conviction costs at least £123,548.

Sensitivities: 0 and 5 (2 best) additional appeals in years 1 to 5. Between 1 and 3 (2 best) fewer appeals. Between 0% (low) and 40% (high) of expert evidence which would not pass the test will still be tendered for admission. Pre-trial hearings will take 0.5 to 3 days (1 best) in the Crown Court and 1 hour to 1 day (0.5 days best) in a magistrates' court. Judge-led meetings of experts will take 0.5 to 1 day (1 best). Judge-led meetings of experts will be used in 0% to 2.5% (2% best) of cases where expert evidence is tendered.

Risks: Possible increase in appeals under the new test, increasing costs. The test could reveal deficiencies in documentation, and corrections to meet its requirements would result in higher costs for businesses. Judge-led, pre-trial hearings under 1A might be used more often.

Direct impact of business(Equivalent Annual £m)			In scope of OIOO:	Measure qualifies as:
Costs: £0.468	**Benefits:** £0	**Net:** -£0.468	Yes	In

[3] Figures reflect the present value of transitional costs, not the annual transitional cost.

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			England and Wales		
From what date will the policy be implemented?			Unknown		
Which organisation(s) will enforce the policy?			The Judiciary of England and Wales and lay magistrates.		
What is the annual change in enforcement cost (£m)?			£0		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			Yes		
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** 0	**Non-traded:** 0	
Does the proposal have an impact on competition?			No		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			**Costs:** 100%	**Benefits:** 100%	
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	**Micro** £0	**< 20** £0	**Small** £0	**Medium** £0	**Large** £0
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

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[4] Race, disability and gender impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the relevant provisions of the Equality Act 2010 come into force.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in References section.

References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final).

No.	Legislation or publication
1	Expert Evidence in Criminal Proceedings in England and Wales (2011) Law Commission No 325
2	The Admissibility of Expert Evidence in Criminal Proceedings in England and Wales (2009) Law Commission Consultation Paper No 190.

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	Y_8	Y_9
Transition costs	£0.473	£0.065	£0.065	£0.065	£0.065	£0.065	£0	£0	£0	£0
Annual recurring cost	£0	£2.582	£2.570	£2.570	£2.570	£2.570	£2.570	£2.570	£2.570	£2.570
Total annual costs	£0.473	£2.647	£2.635	£2.635	£2.635	£2.635	£2.570	£2.570	£2.570	£2.570
Transition benefits	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Annual recurring benefits	£0	£3.101	£3.082	£3.086	£3.090	£3.094	£3.094	£3.094	£3.094	£3.094
Total annual benefits	£0	£3.101	£3.082	£3.086	£3.090	£3.094	£3.094	£3.094	£3.094	£3.094

* For non-monetised benefits please see summary pages and main evidence base section

Microsoft Office
Excel Worksheet

Evidence Base

1. Introduction

Background to the problem

Expert evidence in criminal trials can have a persuasive effect, particularly in cases where the field of expertise is difficult to understand. This is not necessarily problematic, if the evidence is reliable; but clearly the admission of unreliable expert evidence is likely to be harmful. The real possibility of jury deference to expert opinion evidence means that the admission of unreliable expert evidence is likely to distort the jury's understanding of the facts, adversely affect its deliberations and result in erroneous conclusions, as evidenced by a number of wrongful convictions in recent years. In the past eight years, there have been at least 11 wrongful convictions caused by (or involving) unreliable prosecution expert evidence, suggesting a real, ongoing problem. The most well-known cases are *Dallagher*,[5] *Clark (Sally)*,[6] *Cannings*[7] and *Harris and others*.[8]

Such cases demonstrate that unreliable expert evidence can be admitted too readily. A further problem is that the trial process does not provide sufficient safeguards which would prevent miscarriages of justice in cases where unreliable evidence is admitted. In particular, cross-examination may not be an effective tool for bringing out weaknesses in the foundation material underpinning an expert's opinion evidence.

Problem under consideration

The current law on the admissibility of expert opinion evidence in criminal proceedings is unsatisfactory. Although there are the four common law admissibility requirements (assistance, expertise, impartiality and evidentiary reliability), a *laissez-faire* attitude exists in relation to the question of evidentiary reliability. The absence of effective scrutiny before expert opinion evidence is placed before juries in criminal trials means that unreliable evidence can be admitted too freely. This problem is compounded by the absence of a clear test or guidelines which would help trial judges assess evidentiary reliability.

Insufficient judicial scrutiny and the possibility that juries may base their verdicts on unreliable expert evidence means there is a "pressing danger" of wrongful convictions.[9] There may also be wrongful acquittals if the accused is allowed to adduce unreliable expert opinion evidence with a view to undermining a credible prosecution case. A further problem is that an otherwise reputable expert may stray outside his or her field of expertise and put forward, unchallenged, an unreliable hypothesis, meaning that the jury will ultimately reach a verdict based in part on flawed evidence. This can also lead to miscarriages of justice.

In the absence of reform through government intervention, the pressing danger of wrongful convictions, and the risk of wrongful acquittals, will remain. Reform in the form of a new approach to the admissibility of expert evidence would address these problems and safeguard public confidence in the criminal justice system.

Rationale for intervention

The reason why expert evidence is admitted in criminal trials is to help jurors (or the other fact-finding individuals) come to a correct decision on the facts of the case before them. Given the risk of jury deference and the increasing complexity of much expert evidence, a strong case for reform can be made on the principled ground that only expert opinion evidence which has been properly screened for reliability should be considered by a jury in a criminal trial. Although there is a

[5] [2002] EWCA Crim 1903, [2003] 1 Cr App R 12.
[6] [2003] EWCA Crim 1020, [2003] 2 FCR 447.
[7] [2004] EWCA Crim 1, [2004] 1 WLR 2607.
[8] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5.
[9] D Ormerod and A Roberts, "Expert evidence: where now? What next?" (2006) 5 *Archbold News* 5.

common law reliability test for expert evidence, certainly for evidence of a scientific nature,[10] judges have been given little if any guidance on how it should be applied in practice, and the common law test is in any event far from robust.[11]

The case for reform can also be made on the ground that the judiciary should have the tools and guidance they need to do what they are already duty-bound to do at common law, at least for evidence of a scientific nature.

The conventional *economic* approach to government intervention, to resolve a problem, is based on efficiency or equity arguments. The Government may consider intervening if there are strong enough failures in the way markets operate (for example, monopolies overcharging consumers) or if there are strong enough failures in existing interventions (for example, waste generated by misdirected rules). In both cases the proposed intervention should avoid creating a further set of disproportionate costs and distortions. The Government may also intervene for equity (fairness) and redistributional reasons (for example, to reallocate goods and services to more needy groups in society).

In economic terms, there is currently a failure in the "market" for expert evidence because judges and juries will often have insufficient information to address its reliability. Expert evidence could therefore be said to be a "credence good".[12] Unreliable expert evidence may be relied on because the jury is not in a position to determine whether or not the evidence is reliable. As explained above, this could lead to wrongful convictions and wrongful acquittals.

Policy objectives

Our policy objectives are to ensure:

- that where unreliable expert opinion evidence is tendered for admission in criminal proceedings it is not admitted, which would be achieved by providing judges with a new, robust reliability test and the guidance required to apply it;
- that the common law admissibility requirements in relation to assistance, expertise and impartiality are clarified, publicised and properly enforced, which would be achieved through codification;
- that judges and parties in criminal proceedings have access to the information they need to determine whether the admissibility requirements for expert evidence are satisfied in a given case, which would be achieved by enhanced disclosure requirements;
- that judges have the tools to be able properly to manage expert evidence in advance of trials, which would be achieved by the foregoing and by a new power permitting judge-led hearings with the experts (and parties) to narrow the disputed expert issues;
- that judges have access to the best available help when applying the reliability test to extremely complex expert evidence, which would be achieved by providing judges with a new power to call upon a further expert witness who has been independently screened for impartiality and expertise;
- that, as a result of the above:
    - only reliable expert evidence is tendered for admission in criminal proceedings;
    - only reliable expert evidence is admitted in criminal proceedings;
    - clarity, certainty and consistency are brought to the law;
    - the risk of wrongful convictions and wrongful acquittals is reduced; and

[10] *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [111]: "expert evidence of a scientific nature is not admissible where the scientific basis on which it is advanced is insufficiently reliable for it to be put before the jury".

[11] *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23 at [111]: there is "no enhanced test of admissibility", even for evidence of a scientific nature.

[12] A "credence good" is a term used in economics for something whose utility impact is difficult or impossible for the consumer to ascertain, even after consumption.

- public confidence in the criminal justice system is strengthened.

As intimated above, any reform measure designed to address the problems associated with expert evidence in criminal proceedings must be a proportionate response to the problem. We have borne this in mind when formulating our recommendations to achieve our policy objectives.

Scale and scope

There is information on the use and procurement of expert evidence generally, but it is very difficult to quantify the scale of the problem associated with unreliable expert evidence in criminal proceedings for a number of reasons. First, there is no central collection of data on the number of cases in which expert evidence is tendered or admitted, or on the number of cases in which an expert opinion has wrongly been allowed to go before a criminal court. Secondly, and more to the point, it is impossible to ascertain the number of cases where a wrongful conviction has occurred *because* of unreliable expert evidence. This is in part due to the adversarial nature of our legal system and in part due to the secrecy which surrounds the deliberations of juries in criminal trials. In short, there is no way of knowing whether or not, or to what extent, a jury has relied on expert evidence to reach its verdict; so, in a case where unreliable expert evidence was placed before the jury, it is not possible to know whether the same verdict would have been reached if that evidence had not been admitted. The available, relevant information is presented below.

Structure of the industry

The UK Register of Expert Witnesses lists over 2,500 experts. Many experts provide evidence in criminal courts in addition to their other work. A recent bi-annual survey of experts suggests that about 85% of experts work on their own and the remaining 15% work as part of a group. Even the larger forensic science companies rarely employ more than about 50 people.

Key stakeholders

Key stakeholders in the present context include: the judiciary, magistrates, HM Court Service, the Crown Prosecution Service (and other prosecuting bodies), the police, expert evidence organisations and the professional bodies representing solicitors and barristers.

Forensic Science Service (FSS)

The Forensic Science Service accounts for most of the forensic science market in England and Wales. It has been estimated that for the year 2009/10 the FSS was involved in approximately 84,500 cases and 1,300 court attendances. In 2005 the FSS was transformed from a Government agency to a company wholly owned by the Government.[13]

Police

Individual forces and providers, previously using bilateral contracts, are now encouraged to sign up to the National Forensic Framework Agreement, managed and supported by the National Policing Improvement Agency (NPIA). Police forces contract for packages of work by experts. Evidence relating to preparation for a trial is usually paid for by the police, whereas evidence which relates to the trial process is usually paid for by the prosecution. In addition to procuring expert evidence, the police employ their own fingerprint experts.

Crown Prosecution Service (CPS)

The CPS has procurement arrangements with LGC Forensics, FSS and Document Evidence Ltd. These arrangements stipulate fees for expert witnesses but occasionally the CPS negotiates a price in advance with an expert. Between April 2009 and 2010, of 110,000 Crown Court finalised defendant cases[14] and 873,000 magistrates' courts finalised defendant cases,[15] there were 5,420

[13] The Government has, however, recently announced that the FSS is to be wound up by 2012.

[14] Finalised defendant case figures refer to prosecutions completed within a specified time period. They include cases proceeding to trial or guilty plea in the Crown Court, together with cases discontinued or dropped after the defendant has been committed or sent for trial.

invoices to the CPS for expert witnesses. The total cost of expert witnesses and forensic services was £6,296,305. The average invoice was for £1,176.66. The invoices do not give a breakdown of time spent between report writing and court attendance. Nor do they give the hours spent working.

It has been estimated that, on average, 1.7 prosecution expert witnesses give evidence in a trial involving expert witnesses. In half of such trials, however, only one expert witness is used by the prosecution. The CPS's approved rates for expert witnesses appear in Table 1, below. The CPS also occasionally commissions experts in specific areas. Fees are negotiated independently. In addition, the CPS has negotiated rates with its three main providers.

Table 1: CPS fees for expert witnesses (September 2008 rates)

Category of expert and work	**Minimum**	**Maximum**
Consultant medical practitioner, psychiatrist, pathologist		
Preparation (per hour)	£70	£100
Attendance at court (full day)	£346	£500
Fire expert (assessor), explosives expert		
Preparation (per hour)	£50	£75
Attendance at court (full day)	£255	£365
Forensic Scientist, surveyor, accountant, medical practitioner, meteorologist, architect, engineer, document examiner, veterinary surgeon		
Preparation (per hour)	£47	£100
Attendance at court (full day)	£226	£490
Fingerprint expert		
Preparation (per hour)	£32	£52
Attendance at court (full day)	£153	£256

Source: *Crown Prosecution Service, Expert Witnesses – Scale of Guidance (September 2008)*

Central Funds

The Legal Services Commission (LSC) and the courts' central funds share responsibility for paying for defence experts. We do address funding in this project, but a brief discussion may provide useful background information.

Where an expert is used in a way which assists the court, such as in the preparation of a psychiatric report, the expert's fee will usually be paid by the courts' central funds. Payment to a witness attending to give expert evidence (and for associated preparatory work) is made from central funds via the courts. Part V of the Costs In Criminal Cases (General) Regulations 1986 provides that expenses properly incurred by an expert witness attending court to give evidence in criminal proceedings will be allowed out of central funds (unless the court directs that the expenses are not to be paid out of central funds). Paragraph 5.49 of the LSC's Standard Crime Contract Specification stipulates that payment to a witness attending court to give evidence in criminal proceedings cannot be claimed from the LSC unless there is a direction from the court that the witness expenses may not be claimed from central funds and they are not recoverable from any other source.

[15] This figure comprises all defendants whose case was completed in a magistrates' court during the period, including cases tried, guilty pleas, cases discontinued, and cases which could not proceed. Cases committed or sent for trial in the Crown Court are not included.

The scale of payments for expert witnesses is set out in the *Guide to Allowances* under Part V of the Costs in Criminal Cases (General) Regulations 1986. This scale follows Table 1, above. We have been informed that, since this rates have not been increased since 2003, in practice experts are sometimes paid at a higher rate.

We do not have any more information on the average rates paid out of central funds, or on the number of experts paid, so we have used the information from the LSC as a proxy for all expert witnesses called by the defence.

Legal Services Commission (LSC)

As explained above, the LSC does not pay all the fees for experts appearing on behalf of the defendant. If during preparation a defendant applies to the LSC for prior authority to use an expert and the authority is granted, then the LSC will cover those fees. This is often the case.

Information on expert witnesses is available from HM Court Service's witness monitoring surveys (information on all witnesses involved in a four-week period for a given year). In one of its surveys, witnesses may be counted more than once if they are requested to attend on more than one day and, as there are no unique witness identifiers in the dataset, there is no way of knowing how many times one witness has been counted. Estimates based on the survey data for the number of expert witnesses appearing in 2009 are presented below, in Table 2. For context, in 2009 approximately 94,600 cases committed and sent for trial were closed in the Crown Court.

Table 2: estimated number of expert witnesses appearing in court in 2009

	Total number of witnesses expected	*Witnesses expected but did not attend*	*Witnesses who attended but did not give evidence*	*Witnesses who gave evidence*
Crown Court				
Defence	1,413	0	299	1,115
		0%	*21%*	*79%*
Prosecution	7,266	319	1,652	5,295
		4%	*23%*	*73%*
Magistrates Court				
Defence	1,322	119	559	644
		9%	*42%*	*49%*
Prosecution	3,526	441	1,593	1,492
		13%	*45%*	*42%*
Total	13,527	879	4103	8546

Source: *HMCS Witness Monitoring Survey, 2009*

We have assumed that when experts were expected at court and did not attend, or did attend but did not give evidence, it was because their evidence was not challenged at trial or because there was a late guilty plea. In calculating the impact of our proposals we use the numbers of witnesses who attended and gave evidence because this evidence is more likely to be controversial and, perhaps, unreliable.

Note that there is a difference between the number of witnesses who gave evidence for the prosecution and the number of invoices received by the CPS. This is probably due to the fact that the police pay for certain evidence used by the prosecution.

In cases where expert witnesses were used, an average of 1.2 expert witnesses gave evidence for the defence. Applying that to the estimated attendance of 1,759 defence expert witnesses, it is further estimated that expert witnesses for the defence appeared in 1,466 cases in 2009. As with prosecution witnesses, in half of all trial cases involving expert witnesses for the defence only one

expert witness was used.

The Ministry of Justice (MoJ) conducted a file review in 2010 which looked at a sample of 4,566 expert witness invoices collected by one regional office between 26 April and 23 July. From this review it is estimated that the average hourly rate the LSC pays an expert is £96.41 and the average total cost for an expert in a criminal case is £1,155.34.

The Bond Solon and Legal Services Commission Expert Witness Survey reports the average costs for experts, for writing reports and attending court. Experts are also divided between legal aid and non-legal aid cases, although the average cost is the same.

Table 3: average cost of experts' time for court appearances and report writing (2009/10 prices)

	Writing reports	*Attending court*	***Average***
Legal Aid	£142	£168	£156
Non-Legal Aid	£155	£157	£156
Average	£148	£162	£156

Source: *Bond Solon and Legal Services Commission Expert Witness Survey*[16]

Wrongful convictions and wrongful acquittals

A wrongful conviction can have a significant impact on the lives of the convicted person and his or her family, as well as on the victim and the victim's family. These impacts can relate to matters such as liberty, an individual's health and mental wellbeing, family life and financial wellbeing. If no crime has been committed, but an individual has been wrongfully convicted, there is an additional cost to the criminal justice system and the prison service. The state may have to pay compensation where an individual has been wrongfully convicted. Where an individual has been wrongly convicted for a crime committed by another individual, or there has been a wrongful acquittal, it may be the case that the perpetrator is free to offend again, exposing the public to increased risk and the financial consequences of further crime. Equally, a wrongful acquittal can have a significant impact on the victim. It may also potentially increase the risk of reoffending. Importantly, wrongful convictions and acquittals can also have an adverse impact on society and society's perception of the efficacy of the criminal justice system.

It is difficult to know how many wrongful convictions and wrongful acquittals there have been as a result of unreliable expert evidence going before juries. There were *at least* two successful appeals in 2002, one in 2003, two in 2004, two in 2005, one in 2007, two in 2008 and one in 2010, so in recent years there have certainly been wrongful convictions caused by, or at least involving, unreliable prosecution expert evidence. Consider the following two examples:

1. In *Clark (Sally)*,[17] part of the prosecution case was opinion evidence provided by an expert paediatrician. That expert, who was not a statistician, had formulated his opinion on the assumption that there were no genetic or environmental factors affecting the likelihood of cot death. He gave evidence that there was only a one in 73 million chance that two natural cot deaths would occur in the same family. The Court of Appeal took the view that the figure grossly misrepresented the chance of two sudden deaths within a family from natural causes.

2. Until the judgment in *Harris and others*,[18] the prosecution had been allowed to rely on a hypothesis that a non-accidental head injury to a young child could confidently be inferred from nothing more than the presence of a particular triad of intra-cranial injuries. The

[16] Bond Solon and Legal Services Commission Expert Witness Survey 2008, www.legalservices.gov.uk/docs/about_us_main/2008surveyanalysis.pdf (last visited 9 February 2011), p 3. See also, JS Publications, *Expert Witnesses Survey* (2007), www.jspubs.com/Surveys/feesurveys.cfm (last visited 1 February 2011).

[17] [2003] EWCA Crim 1020, [2003] 2 FCR 447.

[18] [2005] EWCA Crim 1980, [2006] 1 Cr App R 5.

prosecution had in effect been able to rely on nothing more than expert opinion evidence based on the triad to secure convictions for very serious offences, including murder.[19] This was the case even though the diagnosis of a violent assault was predicated on empirical research which has been criticised as comprising only a small, poor-quality database.[20]

Despite the limitations in assessing the scope and scale of the problem, this is an area of law that has been highlighted as being in need of urgent reform and our recommendations are aimed at ensuring, as far as possible, that only reliable expert evidence will be put before a jury. Our recommendations would minimise the number of wrongful convictions and wrongful acquittals and maintain or enhance public confidence in the criminal justice system.

Consultation

Our Consultation Paper (CP), *The Admissibility of Expert Evidence in Criminal Proceedings in England and Wales*, was published in April 2009 and the consultation process took place between April and July. During that period, individuals could also post their views on an online forum. In our CP we asked for comments on whether the benefits of our provisional proposals, if implemented, would outweigh the financial costs in the medium to long term and whether or not the potential benefits would outweigh the potential costs when compared with the alternative proposals set out the CP (including the cost of doing nothing).

Responses to the consultation were received from a wide range of consultees including judges, academics, experts, legal practitioners, expert organisations and prosecuting bodies. There was broad support for our core proposal to codify the uncontroversial common law requirements and to introduce a more robust reliability-based admissibility test with guidelines to help the judiciary apply it (Option 1). The broad consensus was that the potential benefits of our proposals would outweigh the potential costs.

There was also considerable support for the proposal that a judge should be able to call upon an independent expert in cases involving exceptionally complex scientific evidence (now, in a revised form, 1B), although a number of consultees expressed some concern about practicalities as we explain below. In the light of these concerns, further advice was sought from four experienced individuals as to how this proposal might work in practice (two barristers, a solicitor and a judge). Three of these consultees provided very positive responses.

There was little, if any, support for the other options set out in the CP (exclusionary discretion without guidance, exclusionary discretion with guidance and consensus amongst experts (deference)). Accordingly, those options have not been discussed in our final report. Nor are they addressed any further in this impact assessment.

In the final stages of the project, we conducted further consultations with experts, academics, judges and practitioners to gauge opinion on our draft recommendations and on the reliability test set out in our draft Criminal Evidence (Experts) Bill. These further consultations also elicited broad support for what we proposed to recommend.

Description of options considered

Two options for reform, in addition to the "do nothing" case, have been considered.[21]

Option 0: do nothing

This is the "base case" against which the other options are compared; it demonstrates the costs of

[19] See Editorial, *British Medical Journal* 29 July 2010 (issue 2771): "For 40 years, mainstream medical experts who give evidence in court have largely agreed that shaken baby syndrome can be unambiguously diagnosed by a triad of symptoms at post-mortem … . Murder convictions are often secured on the basis of these alone, even in the absence of other signs of abuse … ."

[20] See M Donohoe, "Evidence-based Medicine and Shaken Baby Syndrome" (2003) 24 *American Journal of Forensic Medicine and Pathology* 239, 241. See also D Tuerkheimer, "The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts" (2009) 87 *Washington University Law Review* 1, 12 to 14 and 17 to 18.

[21] The options in this impact assessment are numbered differently from those originally described in the CP.

non-intervention. It would bring no change to the current common law position or the current disclosure requirements and procedural provisions.

Common law admissibility test

At common law, four requirements need to be satisfied before expert evidence can be admitted in criminal proceedings:

1. *Assistance*. Expert evidence is admissible only if it would provide the court with information which is likely to be outside a judge or jury's knowledge and experience, such that it would give the court the help it needs in forming its conclusions. This issue is determined by the judge or magistrates at or in advance of the trial.
2. *Expertise*. An individual can give evidence as an expert only if he or she is sufficiently qualified to do so, on account of knowledge, experience or training in the relevant field. A witness wishing to give expert evidence must give details in his or her report of the "qualifications, relevant experience and accreditation" relied on to satisfy this requirement.[22] The threshold for demonstrating expertise is quite low, however,[23] although logically there must (we suggest) be a minimum requirement of proof of expertise on the balance of probabilities. It would seem to be the case in practice that, so long as the information set out in the report suggests that the witness has relevant expertise on the back of formal qualifications or relevant experience, he or she will ordinarily be regarded as an expert and allowed to give expert evidence in a criminal trial.
3. *Impartiality*. There is authority for the view that, at common law, an expert can provide expert evidence only if he or she is able to provide impartial, objective evidence on the matters within his or her field of expertise.[24] There is also a common law duty of impartiality which has been repeated in rule 33.2 of the Criminal Procedure Rules 2010. The mere appearance of bias is an insufficient reason for ruling that an expert's evidence is inadmissible in criminal proceedings; and there is little evidence in the case law to suggest that experts are often prevented from giving evidence on the ground that they are biased.
4. *Reliability.* The expert's opinion evidence must pass a threshold of acceptable reliability, certainly for evidence of a scientific nature,[25] but this requirement of threshold reliability merely requires that the field of expertise is "sufficiently well-established to pass the ordinary tests of relevance and reliability".[26]

The issue of evidentiary reliability in criminal proceedings prior to a trial on indictment may be addressed at a plea and case management hearing (PCMH), a preparatory hearing (for complex, serious or lengthy cases) or at some other pre-trial hearing following disclosure of expert reports. If the trial has already started, a "voir dire" (trial-within-the-trial) will be held in the absence of the jury. It is possible for magistrates' courts to consider the admissibility of expert evidence during the summary trial itself or at a pre-trial hearing.

Procedure

Part 33 of the Criminal Procedure Rules 2010 sets out requirements on the content of any expert report a party intends to rely on as evidence and also the parties' obligation to disclose and serve their reports in advance of the trial. Part 33.6 permits the trial judge to direct the parties' experts to meet and discuss the "expert issues" and part 33.7 permits the court to direct that co-defendants call a joint expert.[27]

[22] Criminal Procedure Rules 2010, r 33.3(1)(a).
[23] *R (Doughty) v Ely Magistrates' Court* [2008] EWHC 522 (Admin) at [24].
[24] *Field v Leeds City Council* [2000] 1 EGLR 54; *Toth v Jarman* [2006] EWCA Civ 1028, [2006] 4 All ER 1276.
[25] *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23; *Weller* [2010] EWCA Crim 1085; *Henderson and others* [2010] EWCA Crim 1269, [2010] 2 Cr App R 24.
[26] *Dallagher* [2002] EWCA Crim 1903, [2003] 1 Cr App R 12; *Luttrell* [2004] EWCA Crim 1344, [2004] 2 Cr App R 31.
[27] We refer to a meeting of experts under part 33.6 as a pre-hearing discussion.

Court-appointed experts

There is a common law power for judges in criminal cases to call a witness of fact during a trial, if this is in the interests of justice.[28] The power is used only sparingly, but it is probably flexible enough to allow a judge to call an expert witness to assist him or her in the determination of evidentiary reliability as a matter bearing on admissibility (although we are unaware of any case where this has happened). This common law power provides no mechanism for ensuring that a court-appointed expert is fit for the role, or for ensuring transparency or for safeguarding the parties' interests.

Option 1: judicial assessment of evidentiary reliability

1: Statutory admissibility test

Our central recommendation is that there should be a robust reliability test in primary legislation (an Act of Parliament) to replace the current common law "relevance and reliability test". Our new test would provide that an expert's opinion evidence is admissible only if sufficiently reliable to be admitted, meaning that the opinion must be soundly based and its strength must be warranted having regard to the grounds on which it is based. Our draft Bill sets out a number of guiding examples and factors designed to help the judge determine whether or not an expert's opinion evidence is sufficiently reliable to be admitted. However, the trial judge would ordinarily apply the new test and investigate reliability only if it appeared to him or her that the expert's opinion evidence might not be sufficiently reliable to be admitted. If the reliability test is applied, the judge would ordinarily call a pre-trial hearing to resolve the matter.

The statutory test would make it clear to the expert, and the party wishing to call the expert, what is required for the expert's evidence to be admitted, which would encourage better practice in the preparation of expert evidence, dissuading any existing practice whereby unreliable evidence is tendered for admission in the expectation that it will be admitted (under the *laissez-faire* common law test).

We also recommend that the uncontroversial common law admissibility requirements should be codified in the same Act of Parliament. The assistance requirement would be codified without change; the expertise ("competence") requirement would be codified with an explicit obligation on the party calling the 'expert' to prove his or her expertise on the balance of probabilities; and the impartiality requirement would be codified with reference to the duty in rule 33.2 of the Criminal Procedure Rules 2010, but with an "interests of justice" inclusionary discretion. It would then be clear to all concerned that expert witnesses must demonstrate their expertise (on the balance of probabilities) and that their evidence would probably be excluded if there is a real risk that they are not impartial.

Since we recommend no significant changes to the law on assistance, expertise and impartiality, we anticipate that codification will be largely cost-neutral.

Under our recommendations, all four requirements in the statutory test would need to be satisfied, otherwise the evidence would be inadmissible. If the judge is satisfied that the evidence is sufficiently reliable to be admitted, the trial would commence and the expert evidence would be adduced in the usual way. The expert witness would be challenged in cross-examination and no doubt contradicted by the adduction of contrary expert evidence.

As well as discouraging the proffering of expert opinion evidence of doubtful reliability, our recommendations would deter dubious challenges to admissibility. It would ordinarily be for a party challenging the admissibility of an expert's opinion evidence to provide a coherent argument that the evidence is insufficiently reliable to be admitted. But where a challenge is well-founded, and it appears to the court that an expert's opinion evidence might not be sufficiently reliable to be admitted, the party seeking to rely on the evidence would have to show that it is sufficiently reliable to be admitted. If the party proffering the evidence cannot show that it is sufficiently reliable to be admitted it will be inadmissible. Unreliable expert evidence would be kept from the jury, reducing the possibility of an erroneous verdict.

[28] *Roberts* (1984) 80 Cr App R 89; *R v Haringey Justices ex parte DPP* [1996] QB 351.

1A: changes to the procedural regime

The current disclosure requirements for expert evidence are set out in Part 33 of the Criminal Procedure Rules 2010.

Our recommendations also include new pre-trial disclosure requirements designed to ensure that:

1. the admissibility requirements in our draft Bill would work in practice (by allowing matters bearing on the admissibility of proffered expert evidence to be properly aired and investigated before the trial);
2. the parties would be properly equipped to challenge admissible expert evidence placed before the jury;
3. the parties would not proffer unreliable expert opinion evidence or call unreliable witnesses to give expert evidence;
4. there would be effective pre-trial case management.

We recommend enhanced pre-trial disclosure requirements (for the defence as well as the prosecution) and rules which would allow the judge to chair a meeting of the experts to reduce the issues and the potential for conflict during the trial. An expert witness would also have to summarise in an appendix to his or her report the reasons why his or her evidence is admissible, with reference to the new statutory requirements.

1B: court-appointed expert witness

When considering the reliability of very complex expert opinion evidence under our reliability test, a judge might in exceptional cases require the assistance of an additional expert witness. There exists a common law power for a judge in criminal proceedings to call a witness during a trial and our recommendation builds on this by providing for the selection and appointment of an expert witness to provide evidence in a hearing to address the evidentiary reliability of a party's expert opinion evidence. We recommend an independent, non-governmental selection panel which would liaise with relevant professional bodies to compile a list of possible experts from which the trial judge would make his or her selection. The appointments system would be transparent and would ensure that any court-appointed expert is properly screened for expertise and impartiality. However, the power would be available only for trials on indictment (in the Crown Court) and only if the interests of justice warrant an appointment by virtue of the complexity of the opinion evidence, the likely importance of the evidence in the trial and any other relevant circumstances.

Option 2: *judicial assessment of evidentiary reliability (including 1A but excluding 1B)*

Option 2 includes all the proposals in Options 1 and 1A, but excludes our proposals for court-appointed experts as outlined in 1B.

Although we are recommending Option 1 (including 1A and 1B), we recognise that concerns have been expressed about the practicalities of selection and the possible costs associated with setting up a panel with appropriate administrative support. 1B is therefore a stand-alone option; and the relevant clause in our draft Bill (clause 9) is also free-standing and severable from the rest of our reform package. Our draft Bill in all other respects and our recommended changes to Part 33 of the Criminal Procedure Rules could therefore be taken forward immediately, but clause 9 could be brought into force at some later date, if the Government determines that there is a real need for this measure for cases involving very complex expert opinion evidence.

Summary

Under our preferred option (Option 1), the current procedural framework and rights of appeal would continue to operate and our proposals, if taken forward, would fit into this existing framework.[29] A recent case illustrates current practice, the judiciary's support for the reforms we are recommending and why government intervention is necessary. In *Reed*,[30] the Court of Appeal held, in line with the central proposal in our consultation paper, that expert opinion evidence "of a

[29] See Appendix B of CP 190.

[30] [2009] EWCA Crim 2689, [2010] 1 Cr App R 23.

scientific nature" should not be admitted if "the scientific basis on which it is advanced is insufficiently reliable for it to be put before the jury".[31]

However, the court's judgment also highlights the ongoing rationale for statutory intervention. The court reaffirmed the traditional *laissez-faire* approach to admissibility which has developed at common law,[32] and provided no guidance which would help trial judges determine whether or not expert opinion evidence "of a scientific nature" has a sufficiently reliable scientific basis (or indeed whether any other expert opinion evidence is sufficiently reliable to be admitted).

2. Cost benefit analysis

This impact assessment identifies both monetised and non-monetised impacts of intervention, with the aim of understanding the overall impact on society and the wider environment. The costs and benefits of each option are measured against the "do nothing" option. Impact assessments place a strong emphasis on valuing the costs and benefits in monetary terms (including estimating the value of goods and services that are not traded). However there are important aspects that cannot sensibly be monetised. These might include impacts on equity and fairness, either positive or negative, or enhanced (or diminished) public confidence.

The impact assessment process requires that we make an assessment of the quantifiable costs and benefits even when there is insufficient material on which to base those calculations. Where possible we have spoken to practitioners to inform our view of the number of cases likely to be affected by aspects of the policy and have used this as the basis for our calculations. Where it has not been possible to obtain a rough indication of numbers in this way we have had to make a realistic estimate. In such cases we have taken a conservative approach and have tended to use figures that we considered likely to under-estimate benefits and over-estimate costs.

In the absence of sufficient data we have used ranges of estimates in our calculations. Some of the assumptions apply in both the cost and benefit calculations. Since the net present value (NPV) has been calculated by subtracting the low costs from the low benefits, and the high costs from the high benefits, it is important that the same assumptions underlying the calculation of the low costs apply to the calculations of the low benefits, etc. This has resulted in some values in the lower benefits column being greater than those in the high benefits column. In addition our high NPVs are negative, as they are calculated using the high estimates of costs, which are not offset by high benefits. Our low NPVs are positive.

When calculating the NPVs for the impact assessment we have used a time frame of ten years, with the current year (2011) being year 0.[33] With the exception of the increased cost of appeals we have assumed that the transitional costs and benefits occur in year 0, and ongoing costs and benefits accrue in years 1 to 10. In the case of the cost of appeals – which we have identified as a transition cost lasting over a five year period – we have discounted the values accordingly. A discount rate of 3.5% has been used in all cases in accordance with HM Treasury guidance. Unless stated, all figures are in 2009/10 prices, and have been uprated using the GDP deflator.

A summary analysis and evidence sheet is available for our preferred Option 1 (with a separate cost/benefit assessment of 1A and 1B) and also for Option 2 (Option 1 including 1A, but excluding 1B).

Option 0: do nothing

Option 0 is the base case against which our other options are measured. Because the do-nothing option is compared against itself, its costs and benefits are of course zero, as is its NPV. While there would not be any additional costs, current costs incurred would continue to be incurred. These are discussed below to provide context for the assessment of the other options.

[31] [2009] EWCA Crim 2689, [2010] 1 Cr App R 23 at [111].
[32] The court held at [111] that there is "no enhanced test of admissibility" for expert evidence of a scientific nature.
[33] The net present value is the discounted stream of benefits less the discounted stream of costs. The present value of an annual cost is the discounted stream of that cost.

Costs

There would continue to be no accepted means by which trial judges are able to assess the evidentiary reliability of expert evidence. This means expert evidence would not be adequately assessed before it is presented to the jury in many criminal trials.

The risk would be that unreliable expert evidence would continue to contribute to wrongful convictions and wrongful acquittals. We cannot estimate how many miscarriages of justice are caused by unreliable expert evidence, but we can say that a wrongful conviction involves significant costs to individuals, government and society in general, and has been estimated (below) to cost at least **£123,548**. The costs, which have not all been monetised, include:

- loss of liberty for the individual (most obviously if the individual receives a custodial sentence);
- loss in earnings and potential earnings (with a concomitant impact on the welfare system);
- loss of an individual's home and possessions (with a concomitant impact on the welfare system);
- adverse impact on the private life of the individual as well as on that of his or her family;
- adverse health impact and wellbeing of the individual (with a possible impact on the NHS); and
- stigma and possibly ostracism.

Wrongful convictions adversely affect the criminal justice system and can seriously erode public confidence in the system. They use up time and resources, and yet the Court of Appeal is already overstretched. In the year 2009/10, 3,346 applications before the Court of Appeal (Criminal Division) were outstanding with an average waiting time of just over 10.1 months for appeals against conviction and 5 months for appeals on sentencing.[34]

If there is a wrongful conviction but an offence was committed, the real perpetrator is not punished and society does not benefit from the incapacitation of the offender. The same problems arise in cases where there has been a wrongful acquittal.

Benefits

The only benefit is the avoidance of the cost of reform.

Option 1: judicial assessment of evidentiary reliability (including 1A and 1B)

1: Statutory admissibility test

Costs

Transitional costs

1. Training

Training is required for two reasons: to inform judges about the new law and procedure; and to guide judges in the practical application of the reliability test. The training and education of practitioners and the judiciary was recommended by the House of Commons' Science and Technology Committee, which also recommended that the judiciary receive an annual update on scientific developments relevant to their work.[35]

Responsibility for training the judiciary rests with the Lord Chief Justice and is exercised through the Judicial Studies Board (JSB), an independent body chaired by Lady Justice Hallett. The JSB recognises the benefits which would come from ensuring that judges have the relevant training to be able to apply the reliability test we recommend.

[34] HMCS, *The Court of Appeal Criminal Division Review of the Legal Year 2009 to 2010* (2010), http://www.judiciary.gov.uk/media/media-releases/2010/jco-news-release-coa-crim-div-review-legal-yr (last visited 1 March 2011), p 1.

[35] House of Commons' Science and Technology Committee, *Forensic Science on Trial* (2004–2005) HC 96-1, p 78.

Under our recommendations, training would need to be provided to District Judges (Magistrates' Courts)[36], Crown Court judges and appeal court judges (for criminal appeals). In England and Wales in 2010, there were 143 District Judges (Magistrates' Courts), 1,233 recorders, 680 Circuit Judges, 72 Queen's Bench Judges and 37 Lord Justices of Appeal.[37]

The JSB has indicated that one possible way in which Circuit Judges and recorders could be trained is at the annual Circuit Criminal Seminars, which are provided for all judges of the Crown Court. This would incur no additional costs, unless an outside speaker were to be invited to attend (generating a cost of about £500 per session for 19 sessions a year). Similarly, training could be provided to District Judges (Magistrates' Courts) during their annual training events, and if this were done, the only additional cost would be for the hire of any speakers, as outlined above.

Training High Court judges would be dependent on the direction of the senior judiciary. If they perceived a need for training, and High Court judges were able to be released for one day, the cost for 74 Queen's Bench Division judges would be around £3,700, based on a price of £50 per individual, excluding any additional speaker costs (if required). Taking speaker costs into account, we have estimated the cost to be £5,000. There is potential scope for some High Court judges to be included in the Circuit Criminal Seminars (but only if judicial release time is agreed with the senior judiciary).

The costs associated with training legal professionals would be borne by the practitioners (or their employers) who choose to undertake training to assist their work in this regard. It is unlikely that this training would add significant cost or time to the training already required by the Solicitors Regulation Authority and the Bar Standards Board in order for barristers and solicitors to maintain their practising certificates (although one solicitor told us that courses could be expensive if they involved the attendance of experts). In any case, the CPS informed us that training would be cost-beneficial for prosecutors in the long term. We would expect defence practitioners to be of the same view.

It should be noted that practitioners and the judiciary should receive training on the determination of evidentiary reliability in any event, certainly in relation to evidence "of a scientific nature", given the Court of Appeal's recent judgment in *Reed*.[38]

We should stress, however, that no guarantees relating to judicial training on evidentiary reliability can be provided. Any final decision must depend on competing priorities and available resources.

The low and best estimates for the total training cost are **£5,000**. However, to take account of the low risk of an outside speaker being invited to attend Circuit Criminal Seminars, we also include a high estimate of £9,500 (£500 x 19 sessions).

2. Increase in appeals

During the first five years there could be a temporary increase in the number of appeals as practitioners and judges come to terms with the new reliability test. This additional cost would be mitigated, however, by a concomitant improvement in standards. That is to say, in the medium to long term the quality of the expert evidence tendered for admission in criminal trials should improve.

Although this project addresses criminal trials heard in magistrates' courts, most serious crimes are heard in the Crown Court, and appeals against conviction in the Crown Court are heard by the Court of Appeal (Criminal Division). In this impact assessment we have assumed that any additional appeals will be heard in the Court of Appeal. There is no current data on the average cost of an appeal to the Court of Appeal. We do, however, have the following data:

- The estimated cost of a day's sitting for the Court of Appeal (Criminal Division) in 2009/10 is £16,635.

[36] Given that the number of challenges in the magistrates' courts is likely to be low we consider that it would be disproportionate to train lay magistrates in addition to district judges.

[37] The Judiciary of England and Wales, *Judicial Statistics 2010* (2010), http://www.judiciary.gov.uk/publications-and-reports/statistics/judges/judicial-statistics (last visited 1 February 2011).

[38] [2009] EWCA Crim 2689, [2010] 1 Cr App R 23.

- A simple model of the average cost to the criminal justice system of an appeal against a conviction or sentence imposed by the Crown Court is £20,821 (in 2009/10 prices).[39]
- If leave is refused on the papers, the court will not sit and the cost will be far lower. However, an application for leave to appeal potentially increases the workload for those who handle the leave applications – the judges and staff of the Crown Court – and for those who handle the appeals against the refusal of leave, namely the judges and staff of the Court of Appeal (Criminal Division), even if leave is refused. We have estimated that an application for leave to appeal costs £3,000.

The figure of £20,821 for the cost of an appeal includes legal aid costs and costs to the CPS. It does not include any private costs to the defendant and so the figure might be an underestimate. To account for this we have used the estimate of £25,000 for the cost of an appeal in the Court of Appeal.

We have estimated between 0 and 10 additional applications for leave to appeal per year, and that an appeal will be heard in 0 to 5 of these cases. The best estimate is 5 applications for leave to appeal and 2 for an appeal hearing. Relevant calculations are provided in Table 4 below. To calculate the present value we have assumed that the additional appeals would start in year 1 and end in year 5.

Table 4: annual total cost of additional appeals and present value over 5 years

	Low	*Best*	*High*
Applications for leave to appeal	0	5	10
Cost of applications	£0	£15,000	£30,000
Number of appeals heard	0	2	5
Cost of appeals	£0	£50,000	£125,000
Annual cost	*£0*	*£65,000*	*£155,000*
Present value	**£0**	**£293,478**	**£699,833**

The best estimate of the cost of additional appeals over the five-year period (annual total cost and present value) is **£65,000 per year** and **£293,478 in total**.

3. Legislative costs

Excluded from the cost estimates are the additional legal costs associated with the creation of a new Act of Parliament and rules of criminal procedure. By introducing statutory reform there would be the initial cost of enacting primary legislation. This cost should be quite low, however, because a draft Bill accompanies our recommendations.

The Criminal Procedure Rules Committee has started a revision of all of the Criminal Procedure Rules, which should be finished in 2015. As they are reviewing the rules in any event, no additional work would be required to incorporate our recommendations, so there would be no additional cost in this respect.

Ongoing costs

1. Court costs

Where there is a legitimate doubt as to the reliability of an expert's opinion evidence, the trial judge would have the power to convene a pre-trial hearing to assess the issue. Our recommendations would put experts on notice that they might be required to provide sufficient material to

[39] R Harries, *Cost of Criminal Justice* (Home Office Research, Development and Statistics Directorate Research Findings No 103, 1999). This research has excluded some costs, such as compensation.

demonstrate the reliability of their opinion evidence. Because of this, there would be fewer instances of unreliable expert evidence being tendered for admission in criminal proceedings. Nevertheless, if a judge were to convene a pre-trial hearing to assess the reliability of expert opinion evidence, the cost of the trial (in terms of court time, judicial time and the time of legal representatives) could increase.

The Bond Solon and Legal Services Commission Expert Witness Survey (above) estimated that for 2009 there were a total of 6,410 experts who gave evidence in the Crown Court and 2,136 in magistrates' courts.

In order to calculate the number of additional pre-trial hearings (Table 5) we have used the following assumptions:

- 5% of all expert opinion evidence currently tendered for admission in the Crown Court, and 2% in magistrates' courts, might not pass the new test. The difference comes from the different types of expert evidence proffered for admission in the Crown Court and magistrates' courts.
- Of this, between 0% (low estimate), 20% (best estimate) and 40% (high estimate) would still be tendered if the new reliability test was in place.
- Of the evidence not tendered or found inadmissible, 50% would be replaced by weaker opinion evidence given by the same expert.
- Of the unreliable evidence tendered for admission, we assume that 100% would be challenged (by a party or the by the judge applying the test of his or her own motion).
- There would be challenges to reliable evidence (including the replacement weaker opinion evidence). We have estimated that an additional 0% to 2% (best estimate 1%) of all reliable expert opinion evidence would be challenged.
- In 65% to 90% (best estimate 80%) of these cases a pre-trial hearing would be necessary. In the remaining cases the judge would be able to decide the question of admissibility without a hearing.
- We have made our calculations using the number of witnesses who attended court and gave evidence. We assume that the evidence of those who were not expected at court, or who did not attend and give evidence, was likely to have been accepted and was therefore more likely to be reliable.

Table 5: additional pre-trial hearings

	Magistrates' Courts			**Crown Court**		
	Low	*Best*	*High*	*Low*	*Best*	*High*
Total expert evidence tendered		2,136			6,410	
% of evidence unreliable		2%			5%	
Pieces of unreliable evidence		43			321	
% of unreliable evidence tendered	0%	20%	40%	0%	20%	40%
Unreliable evidence challenged	0	9	17	0	64	128
% of reliable evidence challenged	0%	1%	2%	0%	1%	2%
Reliable evidence challenged	0	21	42	0	62	125
Total challenges	0	30	59	0	127	253
% of challenges requiring hearings	65%	80%	90%	65%	80%	90%
Total hearings	**0**	**24**	**53**	**0**	**101**	**228**

In order to calculate the cost of a pre-trial hearing (Table 6) we have used the following assumptions:

- On average a pre-trial hearing on reliability would take between half a day and three days (best estimate one day) in the Crown Court and between one hour and one day (best estimate half a day) in a magistrates' court.
- A Crown Court sitting occupies a whole day (4.45 hours on average) and costs £4,454 on average. A session in a magistrates' court takes only half a day (2.5 hours) and costs £2,005 on average.[40] Consequently, there is one Crown Court sitting per day and two sessions per day in a magistrates' court. A full day in a magistrates' court is estimated to cost £4,010.
- We have assumed that each side will employ an expert in a pre-trial hearing. We have used the *Bond Solon and Legal Services Commission Expert Witness Survey* figures throughout and assumed that the average hourly fee of an expert witness is £156.[41] Per side, the expert evidence fee for half a day is £390 (£156 x 2.5). The estimate for a full day is £780 (£156 x 5), and for three days is £2,340 (£156 x 15).
- We have assumed throughout that for every hour an expert witness presents evidence in court, they spend one hour preparing. This is also costed at £156 per hour.

The Advocate Graduated Fee Funding Summary lists fees claimable from the LSC. We make the following assumptions:

- The fees payable for these additional hearings would be identical to those under the hearings relating to the admissibility of evidence generally.
- The costs to the CPS would be identical to that of the LSC.
- As a best estimate in the Crown Court 50% of cases would be presented by a junior advocate alone (£143 half day, £263 full day) and 50% would be presented by a junior led by a Queen's Counsel (£430 half day, £812 full day). We have assumed that in the magistrates' courts all cases will be presented by a junior advocate working alone.
- LSC fees in the paragraph above will be reduced in April 2011 and April 2012 by 4.5%.

Table 6: costs of a pre-trial hearing

	Magistrates' Courts			**Crown Court**		
	Low	*Best*	*High*	*Low*	*Best*	*High*
Time	1 hour	0.5 days	1 day	0.5 days	1 day	3 days
Court costs	£802	£2,005	£4,010	£2,227	£4,454	£13,362
Expert fees	£312	£780	£1,560	£780	£1,560	£4,680
Expert preparation work	£312	£780	£1,560	£780	£1,560	£4,680
LSC & CPS costs 2011	£109	£273	£502	£547	£1,026	£3,078
Total costs 2011	**£1,535**	**£3,838**	**£7,632**	**£4,334**	**£8,600**	**£25,800**
LSC & CPS costs 2012	£104	£261	£480	£523	£980	£2,939
Total costs 2012	**£1,530**	**£3,826**	**£7,610**	**£4,310**	**£8,554**	**£25,661**

[40] Assumed by HMCS to be a total of 5 working hours over two sessions per day.

[41] Bond Solon and Legal Services Commission Expert Witness Survey 2008, www.legalservices.gov.uk/docs/about_us_main/2008surveyanalysis.pdf (last visited 9 February 2011), p 3. See also, JS Publications, *Expert Witnesses Survey* (2007), www.jspubs.com/Surveys/feesurveys.cfm (last visited 1 February 2011).

The calculations in Table 5 and Table 6 have been combined in Table 7 to provide the total costs of the change.

Table 7: total costs to criminal justice sector of additional pre-trial hearings

	Low	*Best*	*High*
Costs in 2011	£0	£962,122	£6,287,072
Costs in 2012 and beyond	£0	£957,155	£6,254,302
Present value of costs	**£0**	**£7,965,082**	**£52,046,221**

We have assumed that 100% of unreliable evidence tendered will be challenged. In further calculations we have assumed that unreliable expert evidence which is challenged will not be admitted. Reliable expert evidence which is challenged will pass the new test.

2. Prison costs

If our recommendations were to reduce the number of wrongful acquittals, there would be an increase in the demand for prison spaces. We know that the estimated average annual cost for a prison space in 2009/10 is **£44,703**. However we do not know how many wrongful acquittals may be prevented, and we have no reliable data which we could use to estimate a figure. For this reason we have not quantified this cost. In any event, it should be borne in mind that this cost would be offset by the benefit which would come from fewer wrongful convictions.

Cost summary

The costs have financial implications for HM Court Service, the Crown Prosecution Service and other prosecuting authorities, individual defendants and the LSC. The Criminal Bar Association told us that they envisaged higher defence costs because of the need for more pre-trial court attendances by experts, meetings between solicitors and experts and further research. The CBA also expressed the view that the LSC would have to adjust its funding arrangements so that the defence would not be prejudiced. Professor Paul Roberts also felt that public funding would need to be made available to enable the prosecution and defence advocates to provide the court with the assistance needed to make a properly informed ruling. For their part, the LSC expressed concern that our proposals could have a significant cost impact on the legal aid budget because of the possible need for more information to be provided in expert reports and the possible increase in time spent in court proceedings (and therefore an increase in lawyers' costs and fees paid to expert witnesses).

Benefits

Transitional benefits

We do not foresee any transitional benefits of Option 1.

Ongoing benefits

A clearer admissibility test would bring clarity, consistency and uniformity to the admissibility of expert evidence in criminal trials. Hearings would be conducted in a more structured, efficient and cost-effective manner. An important benefit of the provisions in our draft Bill is that they would provide guidance for judges, helping them determine evidentiary reliability for expert opinion evidence (something they are now required to do at common law for evidence of a scientific nature).[42] At present, judges have no clear test or guidance to help them assess the reliability of expert opinion evidence, notwithstanding the importance of such evidence and the clear dangers associated with the admission of unreliable expert opinion evidence. The guidance in our draft Bill would be particularly useful for cases involving scientific expert evidence.

The prominent benefits of Option 1 are detailed below.

[42] *Reed* [2009] EWCA Crim 2698, [2010] 1 Cr App R 23.

1. Reduction in trials as a result of the exclusion of unreliable expert evidence

We estimate that as a result of our recommendations, 5% of expert evidence currently tendered for admission might be ruled insufficiently reliable to be admissible under the new test and guidance in the Crown Court, and 98% in magistrates' courts. Some of this evidence would be ruled inadmissible by the judge following a pre-trial hearing but, as practitioners become familiar with the new test, we anticipate that increasingly both the prosecution and the defence would avoid tendering unreliable expert evidence for admission at all.

In Table 8 below have assumed the following:

- 95% of expert opinion evidence tendered for admission would pass the new test in the Crown Court, and 98% in magistrates' courts;
- Between 0% and 40%, best estimate 20%, of the expert opinion evidence that might not pass the test would still be tendered for admission. It would all be challenged before the main trial proceeded and found inadmissible.
- Of the evidence not tendered or found inadmissible, 50% would be replaced by weaker opinion evidence given by the same expert.
- We therefore estimate a net reduction of expert evidence tendered for admission after the pre-trial stage of 2.5% in the Crown Court and 1% in magistrates' courts.

Table 8 below is derived from the prosecution and defence statistics in Table 2 (above). In our calculations, we only include witnesses who attended court and gave evidence. This is because their evidence was more likely to be controversial and, for that reason, unreliable.

Table 8: annual reductions of expert evidence tendered and admitted after the pre-trial stage

	Magistrates' Courts	*Crown Court*
Estimated expert evidence tendered now	2136	6410
Evidence which might not pass the test (5%)	43	321
Net reduction in expert evidence	1%	2.5%
Reduction in expert evidence tendered	21	160

In a number of the cases where expert opinion evidence is found not to satisfy the new reliability test, the party's case would be fatally undermined. If the party is the prosecution, and its case depends fundamentally or critically on the expert opinion evidence – such that without it there would no longer be a realistic prospect of a conviction – no evidence would be offered against the defendant in accordance with the Code for Crown Prosecutors. If a vital piece of defence expert evidence were to be considered unreliable under the new test, the defendant might still legitimately put the prosecution to proof (that is, see if the prosecution is able to prove its case) in which case the trial would proceed, at least to the end of the prosecution evidence. Alternatively the defendant might decide to plead guilty given the reduction in sentence available for an early guilty plea.

Because there is a significant cost in instructing an expert in a criminal trial, it is fair to assume that an expert's opinion evidence is of vital importance in many of the trials in which such evidence is used. In estimating how many trials would fail to proceed as a result of the early identification of unreliable expert evidence, we have worked on the basis that between 40% and 60% (best estimate 50%) of expert opinion evidence found to be unreliable under the new test would be so important to the party seeking to adduce it that the trial would not proceed.

We have calculated the savings from a reduction in trials by multiplying the cost per hour in court (Table 9) by the average trial length. We have used the MoJ's estimate of 12.94 hours as the best

estimate of the average hearing time in the Crown Court when a not guilty plea is entered. This is likely to be an under-estimate since trials involving expert evidence tend to be more complex than average. In the event that the defendant chose to plead guilty as a result of expert evidence being unreliable under the new test these savings in time would be offset slightly by the time to deal with a guilty plea. We have estimated that the average hearing length in a magistrates' court is half a day, or 2.5 hours. Note that the trial lengths do not include the length of a pre-trial hearing, which is costed separately.

We have assumed that an expert will appear on each side, each appearing for 3 hours in the Crown Court and 1 hour in a magistrates' court. We have assumed that for each hour in court an expert requires one hour's preparation. We have assumed that the experts are not present for each other's presentations.

Table 9: costs per trial in magistrates' courts and the Crown Court

	Magistrates' courts	*Crown Court*
Length of trial (hours)	2.5	12.94
Court Costs per hour	£802	£1,000
Hours of evidence presentation	2	6
Expert: hour in court	£156	£156
Expert: hour of preparation	£156	£156
LSC & CPS costs per hour 2011	£109	£246
Costs per trial 2011	**£2,902**	**£17,994**
LSC & CPS costs per hour 2012 and beyond	£104	£235
Costs per trial 2012 and beyond	**£2,890**	**£17,851**

The savings from a reduction in trials are calculated in the tables below.

Table 10A: savings from trials avoided in magistrates' courts

	Low	*Best*	*High*
Reduction in expert evidence tendered	21	21	21
% of cases where trial does not proceed	40%	50%	60%
Cases where trial does not proceed	9	11	13
Savings from trials avoided in 2011	£24,796	£30,995	£37,194
Savings from trials avoided in 2012	£24,691	£30,863	£37,036
Present value of savings	**£205,445**	**£256,806**	**£308,167**

Table 10B: savings from trials avoided in the Crown Court

	Low	*Best*	*High*
Reduction in expert evidence tendered	160	160	160
% of cases where trial does not proceed	40%	50%	60%
Cases where trial does not proceed	64	80	96
Savings from trials avoided in 2011	£1,153,445	£1,441,806	£1,730,167
Savings from trials avoided in 2012	£1,144,265	£1,430,331	£1,716,397
Present value of savings	**£9,525,268**	**£11,906,585**	**£14,287,901**

The range of annual savings in 2011 is £1,178,240 (low), **£1,472,800** (best) and £1,767,361 (high). The range of the total present value of savings is £9,730,713 (low), **£12,163,391** (best) and £14,596,069 (high).

2. Reduction in trial time

If the trial goes ahead in the absence of an expert opinion which fails the new admissibility test, or a different (weaker) opinion is admitted instead, the shorter trial would lead to savings. We have estimated that each expert opinion which is not tendered will save three hours of court time in the Crown Court and one hour in a magistrates' court.[44] In the case of the replacement weaker expert evidence no new report would be commissioned. Because the opinion is weaker the presentation of that opinion, in terms of examination in chief and cross examination, would take half as long as the original opinion.

The savings per hour in court are set out in Table 11 below. We have assumed that experts would be paid for their reports and pre-trial attendance, but there would be a saving on expert fees as they would not attend the trial. We have assumed that the opposing party's expert would not have been present when an expert gave evidence at trial, and so there would be no saving in respect of their fees.

Table 11: savings in per hour in magistrates' courts and Crown Court

	Magistrates' Courts	*Crown Court*
	Best	*Best*
Court Costs per hour	£802	£1,000
Expert: hour in court	£156	£156
Expert: hour of preparation	£156	£156
LSC & CPS costs per hour 2011	£109	£246
Costs per hour 2011	**£1,223**	**£1,558**
LSC & CPS costs per hour 2012 and beyond	£104	£235
Costs per hour 2012 and beyond	**£1,218**	**£1,547**

The estimated annual savings are set out in Tables 12A and 12B below, based on the magistrates' courts / Crown Court breakdown in Table 2 (above).

[44] This figure is conservative and reflects the fact that it can take anything from a few minutes to adduce undisputed expert opinion evidence to more than a week for complex expert opinion evidence (eg in a murder trial).

Table 12A: savings in trial time in magistrates' courts

	Low	*Best*	*High*
Items tendered		2,136	
Net reduction in evidence tendered		1%	
Items failing the test		21	
Percentage of trials still proceeding	60%	50%	40%
Items not tendered	13	11	9
Hours saved per item		1	
Hours saved as less tendered	13	11	9
Number of replacement opinions		21	
Hours saved per item		0.5	
Hours saved with weaker opinions	11	11	11
Total hours saved	23	21	19
Total annual savings 2011	*£28,742*	*£26,129*	*£23,516*
Total annual savings 2012	*£28,626*	*£26,024*	*£23,421*
Present value of savings	**£238,183**	**£216,530**	**£194,877**

Table 12B: savings in trial time in the Crown Court

	Low	*Best*	*High*
Items tendered		6,410	
Net reduction in evidence tendered		2.5%	
Items failing the test		160	
Percentage of trials still proceeding	60%	50%	40%
Items not tendered	96	80	64
Hours saved per item		3	
Hours saved as less tendered	288	240	192
Number of replacement opinions		160	
Hours saved per item		1.5	
Hours saved with weaker opinions	240	240	240
Total hours saved	529	481	433
Total annual savings 2011	*£823,877*	*£748,979*	*£674,081*
Total annual savings 2012	*£818,025*	*£743,659*	*£669,293*
Present value of savings	**£6,808,842**	**£6,189,857**	**£5,570,871**

The low estimate of total annual savings is £852,619, the best estimate is **£775,108** and the high estimate is £697,597. The low estimate of the present value of total savings is £7,047,025, the best estimate is **£6,406,387** and the high estimate is £5,765,748.

3. Saving in experts' fees from reduction in evidence commissioned

We anticipate that the new admissibility test under Option 1 would encourage a cultural shift over time such that the parties would seek to rely on expert opinion evidence of questionable reliability less often. We estimate a net reduction of expert evidence adduced, after some strong evidence is replaced with weaker opinion, of between 2.5% in the Crown Court and 1% in magistrates' courts (compared with current levels). Initially the reduction would come from judicial findings of unreliability at pre-trial hearings and by parties coming to their own assessment of reliability in the light of their experts' reports, but with time this cultural shift would lead to a reduction in requests for certain types of expert evidence. We anticipate that there would be a reduction in respect of requests for expert opinion evidence of a type which has previously been held to be unreliable, and this reduction would bring concomitant savings. We estimate that in year 1 there would be a reduction of 10%, 20% in year 2, 30% in year 3, 40% in year 4, and 50% in year 5 and beyond.

We have assumed that it typically takes six hours to prepare and adduce an item of expert evidence in the Crown Court and two hours in a magistrates' court. By deducting the cost of preparing and adducing evidence from the average invoiced total typically paid by LSC, we can estimate the cost of preparing an expert's report. We have been conservative in calculating savings, and have deducted six hours, not two, to calculate the savings per report in the magistrates' courts.

The average hourly rate that the LSC pays is £96.41, and the average total cost of an expert in a criminal case is £1,155.34. To be cautious, and consistent with our earlier approach, we will use an average hourly rate of £156. We have used the average value of the invoice from the LSC to calculate the cost of a report, because it is possible that the average invoice to the CPS (£1,176.66) does not reflect the complete cost of the expert witness. This is because the police may be responsible for paying part of the expert's fees. The saving from each report no longer commissioned would be £1,155.34 – (£156 x 6) = £219.34.

Table 13: annual in reductions of expert evidence reports

	Total
Estimated expert reports commissioned now (magistrates' courts)	2,136
Evidence which might not pass the test (2%)	43
Estimated expert reports commissioned now (Crown Court)	6,410
Evidence which might not pass the test (5%)	321
Total evidence which might not pass	363
Evidence converted to weaker opinion (50%)	182
Evidence liable for challenge	182
Savings per report	£219
Savings year 1	*£3,983*
Savings year 2	*£7,967*
Savings year 3	*£11,950*
Savings year 4	*£15,934*
Annual Savings year 5 and beyond	*£19,917*
Net present value of savings	**£128,436**

4. Reduction in the number of appeals on the basis of unreliable expert opinion evidence

The admission of unreliable evidence at the trial stage may result in costs in the form of appeals. Screening expert opinion evidence for reliability before it is admitted in criminal proceedings could result in a decrease in the number of appeals, thereby reducing court costs.

Appeals against conviction in the Crown Court are heard by the Court of Appeal (Criminal Division). The Court of Appeal is already overstretched. In the year 2009/10, 3,346 applications before the court were outstanding, with an average waiting time of 10.1 months for appeals against conviction and about 5 months for appeals on sentencing.[45] An appeal against conviction based on unreliable expert evidence would cause further delays for other court users.

The appeal process itself has cost implications for the appellant, whether he or she is privately funded or publicly funded, and also for the court service and prosecution authorities. As discussed above, we have estimated the costs of an appeal to be £25,000.

We do not know how many appeals will be prevented if our recommendations were to be taken forward, so we have used a range of scenarios. The low estimate is that the reforms will save one appeal annually; the best estimate is that two would be saved and the high estimate is that three would be saved. The savings are set out below:

- Low estimate: **£25,000** annually and **£207,915** over 10 years.
- Best estimate: **£50,000** annually and **£415,830** over 10 years.
- High estimate: **£75,000** annually and **£623,745** over 10 years.

Note that these savings are offset against the initial increase in appeals. For the sake of clarity we have separated the costings of the long-term decrease in appeals and the initial increase in appeals.

5. Increased confidence in the criminal justice system

A reduction in the number of wrongful convictions and fewer appeals would bring a concomitant increase in public confidence in the criminal justice system. It is impossible to quantify this crucial benefit.

1A: Changes to the procedural regime

Costs

Transitional costs

1. Appendix to expert reports

The addition of an appendix to an expert's report on the admissibility criteria would be a transitional cost. The underlying basis of an expert's opinion evidence (and the evidence of his or her expertise) is unlikely to be case-specific, so it should be possible for the expert to use the same material in his or her appendix in any subsequent case. The Expert Witness Institute told us that expert witnesses would initially spend extra time preparing reports, but the guiding factors in our draft Bill would provide a framework for experts to follow. Accordingly, the Institute did not think our "proposed changes would increase costs in any significant way since an expert witness's particular responses to the criteria are unlikely to change markedly from case to case".

If experts are already conforming to best practice, we anticipate that it will not take them much more than one hour each to compile the appendix of the sort we recommend. The average cost per hour for an expert's time is £156, and so, assuming 3000 experts, the total transitional cost is **£468,000**. We have used this as a low, best, and high estimate.

With regard to the Criminal Procedure Rules, Jonathan Solly from the MoJ Rules Committee informed us there will be a complete revision of the Rules to be completed in 2015. No additional work should be required to incorporate our recommended changes into the Rules, so there would

[45] HMCS, *The Court of Appeal Criminal Division Review of the Legal Year 2009 to 2010* (2010), http://www.judiciary.gov.uk/media/media-releases/2010/jco-news-release-coa-crim-div-review-legal-yr (last visited 1 March 2011), p 1.

be no additional costs in this respect.

2. Increase in challenges

It is possible that there would be an increase in the number of challenges to expert evidence tendered for admission, which could result in longer proceedings in some cases. However, we believe that after an initial increase, challenges would soon drop back close to present levels.

Ongoing costs

1. Judge-led pre-trial meetings with experts

There is already a power in the Criminal Procedure Rules 2010 to direct experts to meet, discuss expert issues and prepare a joint statement on areas of agreement and disagreement. Our recommendation would complement this. A judge would be able to order a meeting of experts, chaired by the judge. We estimate that such a judge-led meeting would occur in 0% to 5% (best estimate 2.5%) of cases where expert evidence is tendered for admission, and in half of those cases they would replace a pre-hearing discussion under the existing rules (see below).

Using the figures from the Bond Solon and Legal Services Commission Expert Witness Survey (Table 2), in 2009 there were 6,410 experts who gave evidence in the Crown Court and 2,136 who gave evidence in magistrates' courts.

A judge-led meeting of experts is estimated to take between half a day and one day (best estimate one day). The cost inputs are nearly identical to those for pre-trial adversarial hearings: each party would bring an expert and the CPS and LSC's costs would be the same. Since the judge-led meetings would require fewer overheads, we estimate that court costs would be about 10% lower than the costs associated with a pre-trial reliability hearing.

Our calculations are set out in Tables 14A, B and C below.

Table 14A: annual total costs of judge-led meetings

	Low	*Best*	*High*
Annual costs 2011	*£0*	*£1,607,097*	*£3,214,194*
Annual costs 2012	*£0*	*£1,599,354*	*£3,198,708*
Present value	**£0**	**£13,308,678**	**£26,617,356**

Table 14B: annual total costs of judge-led meetings in magistrates' courts

	Low	*Best*	*High*
Estimated expert evidence tendered		2136	
Judge-led meetings (0%, 2.5%, 5%)	0	53	107
Length of meeting (days)	0.5	1	1
Cost per meeting 2011	£3,454	£6,869	£6,869
Cost per meeting 2012	£3,443	£6,849	£6,849
Annual costs 2011	*£0*	*£366,810*	*£733,620*
Annual costs 2012	*£0*	*£365,723*	*£731,447*
Present value	**£0**	**£3,042,627**	**£6,085,253**

Table 14C: annual total costs of judge-led meetings in Crown Courts

	Low	*Best*	*High*
Estimated expert evidence tendered		6410	
Judge-led meetings (0%, 2.5%, 5%)	0	160	321
Length of meeting (days)	0.5	1	1
Cost per meeting 2011	£3,901	£7,740	£7,740
Cost per meeting 2012	£3,879	£7,698	£7,698
Annual costs 2011	*£0*	*£1,240,287*	*£2,480,575*
Annual costs 2012	*£0*	*£1,233,631*	*£2,467,261*
Present value	**£0**	**£10,266,051**	**£20,532,102**

Benefits

Transitional benefits

We do not anticipate any transitional benefits.

Ongoing benefits

1. Overall reduction in trial time

Our recommendations would encourage further pre-trial disclosure of matters relevant to the issue of evidentiary reliability. Such disclosure would ensure that the parties and the trial judge are properly equipped to scrutinise expert evidence for reliability before the trial.

Due to the narrowing of issues preceding the trial in judge-led meetings, we have estimated that the time taken to adduce expert opinion evidence would be reduced by around one third. Assuming that it takes on average three hours to adduce an expert's opinion evidence in the Crown Court and one hour in a magistrates' court, this would translate to an hour per opinion in the Crown court and 20 minutes in a magistrates' court. Assuming that judge-led meetings would tend to be used where there are experts for both the prosecution and the defence, this would be a saving of two hours / 40 minutes. We also assumed an equal saving in experts' preparation time.

The savings calculations are presented in Table 15, below. The savings per hour in court are shown in Table 11.

Table 15: savings from shorter trials (Crown and magistrates' courts)

	Low	*Best*	*High*
Estimated expert evidence tendered		8546	
Judge-led meetings (0%, 2.5%, 5%)	0	214	427
Trial hours saved	0	356	712
Savings 2011	*£0*	*£542,867*	*£1,085,735*
Savings 2012	*£0*	*£539,145*	*£1,078,290*
Present value	**£0**	**£4,487,454**	**£8,974,909**

2. Reduction in pre-hearing discussions under rule 33.6 of the Criminal Procedure Rules 2010

Currently it is possible to hold pre-hearing discussions between experts under rule 33.6 of the 2010 Rules. The intended outcome of these discussions is a statement for the court explaining the matters on which the experts agree and the areas of disagreement. A pre-hearing discussion can

be ordered by the judge when more than one party tenders expert evidence. The discussion might reveal areas of disagreement and result in a judge-led meeting under our recommendations. When it is apparent that there are areas of significant disagreement, we anticipate that the judge will order a judge-led meeting instead of a pre-hearing discussion.

We have assumed that 50% of the new judge-led meetings will replace a pre-hearing discussion. In such cases there would be a saving of the cost of a pre-hearing discussion to be offset against the cost of the judge-led meeting.

On the advice of the CPS we have assumed that a pre-hearing discussion will involve experts and legal representatives, but no court fees will be incurred. We have assumed that they will meet to discuss for 2 hours, and spend one hour writing up the statement for the court together. Experts will also prepare for 3 hours each. To be conservative we have assumed that, although Queen's Counsel may attend judge-led meetings and pre-trial hearings, legal representatives at pre-hearing discussions will typically be junior advocates. The savings are set out in the tables below.

Table 16: costs per discussion

Hours of experts' time	12
Costs of expert per hour	£156
Length of discussion	3
LSC & CPS costs per hour 2011	£109
Costs per discussion 2011	**£2,200**
LSC & CPS costs per hour 2012 and beyond	£104
Costs per discussion 2012 and beyond	**£2,185**

Table 17: savings from reduced pre-trial discussions under 1A

	Low	*Best*	*High*
Judge-led meetings	0	214	427
Reduction in pre-hearing discussions	0	107	214
Cost of discussion 2011	£2,200	£2,200	£2,200
Costs per discussion 2012	£2,185	£2,185	£2,185
Annual savings 2011	*£0*	*£234,989*	*£469,978*
Annual savings 2012	*£0*	*£233,413*	*£466,827*
Present value	**0**	**£1,942,729**	**£3,885,458**

3. Enhanced pre-trial scrutiny of expert evidence

This would strengthen the operation of the recommendations made under Option 1, contributing to the increased likelihood that unreliable expert evidence would be tendered for admission less often. There would be fewer wrongful convictions and acquittals; there would be fewer appeals; and there would be greater public confidence in the criminal justice system.

1B: Court-appointed expert witness

Costs

Transitional costs

Initial costs involved in setting up the panel are assumed to be negligible as we anticipate the legal

professionals involved would donate their time on a *pro bono* basis.

The initial costs associated with setting up the scheme could include recruiting panel members, drafting procedures and assembling preliminary lists of potential court-appointed experts for various fields. While this could be done *pro bono*, some administrative support would be required.

Ongoing costs

1. Administrative costs

Under 1B the judge would have the power to appoint an independent expert in cases where a party's expert opinion evidence is exceptionally complex. We recommend that the selection of court-appointed experts would be undertaken by an independent panel, which would be self-governing. A small *ad hoc* panel composed of voluntary members would meet when required to identify an appropriate expert. The administrative support for the panel would be handled by the MoJ.

Whenever a judge called upon the independent panel to fulfil its task, MoJ staff would be required to arrange a meeting room, liaise with the panel and take minutes during meetings. The staff might also have to draft correspondence and maintain records. It might be possible to incorporate much of the cost into existing budgets, using this department's existing resources (meeting rooms, information technology support, filing and so on). If so, this would reduce costs further.

Notwithstanding the scope for limiting costs through voluntary arrangements and by utilising existing resources, we have proceeded on the assumption that there would be administrative costs.

We assume the panel would be called upon to appoint an independent expert 0 (low estimate) to 10 (high estimate) times a year (best estimate 5 times). We also assume that 8 hours of administrative staff time would be used whenever the panel is convened:

- Correspondence: 5 hours
    - Between judge and administrator: 1.5 hours
    - Between administrator and panel: 2 hours
    - Between administrator and 2 experts (includes substitute expert): 1 hour
    - Administrator to sign-off on completed tasks: 0.5 hours
- Minutes of panel meeting: 3 hours

The median gross hourly pay of people working in administrative occupations in 2009 was £9.61, so a meeting of the panel would incur an administrative staff cost of £77. Total annual administrative staff costs would range between £0 and £769 (best estimate **£384**). The present value ranges between £0 (low estimate) and £6,394 (high estimate), the best estimate being **£3,197**.

2. Fees for panel members

If panel members were to act in a voluntary capacity, fees would be **£0**. This is a best and low estimate.

If fees are payable, we work on the basis that there would be five members of any *ad hoc* panel. The chairperson would be a Circuit Judge and the remaining four members would be experienced legal practitioners. The MoJ assigns an annual salary of £128,296 to a Circuit Judge as of 1 April 2010. Taking a simple average, this is approximately £10,691 per month and £535 per day (assuming a 20-day month).

High-earning legal practitioners with at least 10 years' experience earn on average £80,000.[46] However, this figure masks significant variations in earnings and is likely to be rather conservative. The average earnings of panel members would very much depend on the composition of the

[46] Workgateways, *Legal Jobs UK*, http://www.workgateways.com/job-legal.html#salary (last visited 25 February 2011).

particular panel.

If the £80,000 annual income average is used, the monthly earnings, based on a simple average, would be £6,666, equivalent to £333 per day (assuming a 20-day working month).

If the panel meets for one day, ten times per year, this equates to: 10 x (£535 + [£333 x 4]) = £18,670 total annual cost. This would be a present value of £155,271 over 10 years. This is our high estimate.

3. Expenses for the panel

The members of the panel would act in a voluntary capacity but would receive reasonable out-of-pocket expenses. If we were to assume average out-of-pocket expenses per member at £30 per day, the total amount would be £150 per day (for five members). If the panel were to meet 0 to 10 times per year, for a maximum of one day each time, the total cost would range between £0 and £1,500 per year. The low estimate is that members are based in London and no meetings take place (£0).

As the meetings take place in London, the costs to attend the meeting will increase if panel members need to travel into London. If we assume three members from London and two from outside London, and we increase the average out-of-pocket expenses by 50% to £45 per day, the total would be £225 per day for all five members. If the panel were to meet for one day, 0 to 10 times per year, the total cost would range from £0 to £2,250 per year. The best estimate is a panel comprising both London- and non-London-based members with five meetings per year. This gives an annual total cost of **£1,125** and present value of **£9,356** over 10 years.

If the panel consists of all non-London-based members and we assume an increase of 100% from the London-based average to £60 per day, then between 0 and 10 meetings per year would cost between £0 and £3,000 (£24,950 best estimate), which we have used as our high estimate.

Table 18: panel expenses

Panel Members (5)	*Average daily expense*	*Cost of 0 to 10 meetings*	*Cost of 5 meetings*	*Present value of 5 meetings*
All London based	£30	£0 – £1,500	£750	£6,237
3 London/2 Non-London	£45	£0 – £2,250	£1,125	£9,356
All Non-London	£60	£0 – £3,000	£1,500	£12,475

4. Fees for court-appointed expert witnesses

Where the assistance of an independent court-appointed expert is required, the fee for this individual would come from the courts' central funds.

Using for present purposes the standard LSC rates for court attendance, the average per hour attendance and preparation fee is £156. We assume that an independent expert would be required to appear at court for one day for a pre-trial hearing (5 hours) and prepare for 10 hours, which would result in a cost of £2,340 in expert fees every time an independent expert was used. We have assumed that an independent expert would be used 0 to 10 times per year (best estimate 5).

The estimated annual cost would be between £0 and £23,400 (best estimate **£11,700**). The present value over a 10-year period ranges between £0 and £194,609, best estimate **£97,304**

The total annual cost of a panel and the present value over 10 years is summarised in Table 20.

Table 19: total cost of a panel including witness fees

Costs	*Low (No meetings)*	*Best (5 meetings)*	*High (10 meetings)*
Administrative	£0	£384	£769
Panel members' fees	£0	£0	£18,670
Panel expenses	£0	£1,125	£3,000
Experts' fees	£0	£11,700	£23,400
Total cost	*£0*	*£13,209*	*£45,639*
Present value	**£0**	**£109,854**	**£381,225**

5. Delays to the hearing

By providing Crown Court judges with a statutory power to call an independent expert witness, we do not envisage any significant lengthening of proceedings or any significant additional costs being incurred by HM Courts Service, the Crown Prosecution Service or the LSC (Ministry of Justice). The parties will wish to scrutinise the evidence provided by the court-appointed expert and possibly make representations on it following consultation with their experts, but in cases of this sort additional costs and delays are likely to result from the fact that a trial judge has ordered a pre-trial admissibility hearing on reliability.

That is to say, the infrequency with which this power would be used and the fact that the hearing would nearly always be conducted in advance of the trial, before the jury is empanelled, means that the selection process would be undertaken as part of the usual pre-trial proceedings, with no adverse impact on the trial itself. Indeed, the appointment of an independent expert could feasibly shorten the hearing or any subsequent trial or both.

Nevertheless, we accept that where the judge decides to appoint an independent expert, there could occasionally be a delay in the overall proceedings. This is because the *ad hoc* panel would have to draw up a list of potential experts, having liaised with relevant professional bodies. Delays could be minimised, however, if the panel's administrative support established early links with the various professional bodies, giving those bodies the opportunity to compile a list of potential candidates in advance of any request for assistance.

But even if additional delays are occasionally generated by the selection and appointment process, these could be significantly shorter than the delays which might occur if the trial judge were to use his or her common law power to find a suitable expert.

Benefits

Transitional benefits

We do not believe there would be any transitional benefits associated with 1B.

Ongoing benefits

An independent court-appointed expert could help judges assess the evidentiary reliability of very complex (almost certainly scientific or mathematical) expert evidence. This reform measure would help judges discharge their duty to investigate evidentiary reliability, thereby enhancing the benefits of Option 1. Bruce Houlder QC foresaw "dangers for the criminal justice process in judges *not* receiving such help." He suggested that the existence of the power would also act as a deterrent against casual science and might reduce costs in the long run by reducing the amount of unreliable expert opinion evidence being tendered for admission in criminal proceedings.

1. Lower court costs

We have estimated that the presence of court-appointed independent experts would save between 10% and 30% (best estimate 20%) of the time it takes to adduce expert evidence. Since the court-

appointed expert would be used only in cases involving complex expert evidence we have applied these percentage savings to evidence taking between 2 and 5 days to adduce, best estimate 3 days. A day is the Crown Court is 4.45 hours. The hourly cost of a trial in the Crown Court has been taken from Table 11 above.

Table 20: savings from shorter trials (Crown Court)

	Low	*Best*	*High*
Number of cases	0	5	10
Days of expert evidence	2	3	5
Hours per case	0	13.35	22.25
Total hours	0	66.75	225
Time savings	10%	20%	30%
Cost per hour 2011	£1,558	£1,558	£1,558
Cost per hour 2012	£1,547	£1,547	£1,547
Annual savings 2011	*£0*	*£20,798*	*£105,161*
Annual savings 2012	*£0*	*£20,651*	*£104,414*
Present value	**£0**	**£171,887**	**£869,091**

Net impact of Option 1

The net impact of Option 1 is presented in Table 21 below.

Table 21: net impact of Option 1

	Low estimate	*Best estimate*	*High estimate*
Transitional costs	£473,000	£766,478	£1,177,333
Ongoing costs (annual)	£0	£2,582,428	£9,547,106
Present value of costs	*£473,000*	*£22,150,815*	*£80,222,134*
Transitional benefits	£0	£0	£0
Ongoing benefits (annual)	£2,059,843	£3,100,547	£4,204,815
Present value of benefits	*£17,114,089*	*£25,716,113*	*£34,843,455*
Net present value	**£16,641,089**	**£3,565,298**	**-£45,378,678**

In addition to the monetised costs and benefits associated with our recommendation, this policy would carry significant non-monetised benefits. There have been well-publicised cases where unreliable expert evidence has been wrongly admitted in high profile criminal trials. In such cases the human costs for those convicted, and for their families, have the potential significantly to undermine public confidence in the criminal justice system.

Option 2: judicial assessment of evidential reliability (including 1A, excluding 1B)

The costs and benefits of this option are identical to the sum of the cost and benefits for option 1, excluding 1B.

The net impact of Option 2 is presented in Table 22, below.

Table 22: net impact of Option 2

	Low estimate	*Best estimate*	*High estimate*
Transitional costs	£473,000	£766,478	£1,177,333
Ongoing costs (annual)	£0	£2,569,219	£9,501,267
Present value of costs	*£473,000*	*£22,040,238*	*£79,840,910*
Transitional benefits	£0	£0	£0
Ongoing benefits (annual)	£2,059,843	£3,079,748	£4,099,654
Present value of benefits	*£17,114,089*	*£25,544,227*	*£33,974,365*
Net present value	**£16,641,089**	**£3,503,988**	**-£45,866,545**

Summary of options

This discussion is informed by the comparative table of estimated net present values for the options.

Table 23: comparative net present values

	Low estimate	*Best estimate*	*High estimate*
Option 0	£0	£0	£0
Option 1	£16,641,089	£3,565,298	-£45,378,678
Option 2	£16,641,089	£3,503,988	-£45,866,545

Option 1, complemented by 1A and 1B, is the preferred option because it would offer the best solution to the problems associated with expert evidence and it would result in the highest NPV. We believe that Option 1 would bring significant and important benefits.

We must emphasise that the inability to monetise the full extent of the benefits means that the full value of our proposals could be under-estimated in this assessment.

Nevertheless, we believe the benefits of this option would outweigh the anticipated costs. We also support implementation of 1A and 1B. The implementation of these reform measures would bring positive benefits to the criminal justice system and would complement Option 1.

At one level our proposed reforms would not place any additional financial burden on the experts and other individuals involved in criminal litigation. It is already open to a party to challenge the admissibility of an expert's opinion evidence on the ground of unreliability and for a pre-trial hearing to be convened to address the issue. Moreover, parties and their experts should not be seeking to adduce unreliable opinion evidence for admission, and should already be prepared to show why their evidence ought to be relied on by juries and magistrates in criminal proceedings. Furthermore, Part 33 of the Criminal Procedure Rules 2010 already sets out certain obligations as to what must be set out in an expert witness's written report, so the proposals introduced through 1A would not result in any significant change. Nor would our proposals require any fundamental changes to the law of criminal procedure: the current procedural framework and rights of appeal would continue to operate and the proposals would largely fit into this existing framework. In addition, our recommendations would make it easier for trial judges to do what they already have to do in appropriate cases. It is worth noting the view of Bruce Houlder QC (Director of Service Prosecutions) that "the law has for some time been moving naturally towards [the changes we recommend] and the impact will not be as great as feared".

Our recommendations are in line with the development of the common law in the past year or so,

as exemplified most starkly by the judgment of the Court of Appeal in *Reed*.[47] This development reflects the attitude of the judiciary to the problems associated with expert opinion evidence and further strengthens the value and desirability of our recommendations and draft Bill. We would be providing the courts with the guidance they need and abolishing a common law admissibility test which is generally considered to be flawed. The Court of Appeal fully recognises the desirability of an investigation into evidentiary reliability in appropriate cases, certainly for evidence of a scientific nature.

Moreover, we are confident that the potential benefits and savings generated by our proposals would outweigh the initial and ongoing financial costs and, in line with our policy objective of proportionality, an admissibility hearing would be held only if there was a legitimate doubt about the basis of an expert's opinion evidence. Over time, with widespread awareness of the rules and how they are to be applied, the costs we have outlined would fall.

The difference between Option 1 and Option 2 comes down to whether or not the proposal for court-appointed experts is introduced. Our recommendation that there should be a new power to call upon an independent witness would provide a transparent, independent selection process, offering important guarantees as to the expertise and impartiality of the court-appointed expert.

Our recommendations, if adopted, would ensure that convictions and acquittals are always founded on sound expert opinion evidence. The expert proffering the evidence would have to demonstrate the soundness of any underlying hypothesis and methodology and the soundness of his or her reasoning. The courts would focus on the strength of the expert's opinion and whether or not it is warranted by the foundation material.

Risks, assumptions and sensitivities

Key assumptions

For the purposes of this cost benefit analysis we have made several assumptions.

1. There are 3,000 expert witnesses currently working in the UK.
2. For every wrongful conviction the imprisoned individual would appeal. Most expert evidence is submitted in Crown Court cases, so we have assumed that all appeals would be heard by the Court of Appeal (Criminal Division) and that each would cost £25,000.
3. Experts who wrote reports but did not attend court or did not give evidence were excluded from our calculations as we have assumed that their evidence is likely to be uncontroversial and so less likely to be unreliable. In 2009 there were an estimated 4,103 experts who attended court but did not give evidence, compared with 8,546 who did, so some benefits and costs could be underestimated.
4. 95% of expert evidence currently tendered for admission in the Crown Court would pass the new test, as would 98% of the expert evidence currently tendered for admission in magistrates' courts.
5. 100% of unreliable evidence tendered would be challenged and would be ruled inadmissible.
6. Experts are paid at an average rate of £156 per hour, or £780 per day (5 hours). It is assumed that experts take an average of 3 hours to adduce evidence in the Crown Court and 1 hour in the magistrates' courts. In most cases we have assumed that preparation time required is equal to the length of time that the expert will be giving evidence.
7. A wrongful conviction costs at least £123,548. The average annual cost per prison space is £44,703, and an appeal against a wrongful conviction is heard after 10.1 months in prison. An imprisoned individual earns the median national wage, which we have used as a proxy for their loss of income while in prison, and it takes one year to return to work after release.

Sensitivities

In order to reduce the risk that our assumptions are incorrect we have used sensitivity ranges.

[47] [2009] EWCA Crim 2689, [2010] 1 Cr App R 23.

1. We have estimated between 0 and 10 additional applications for leave to appeal, and the appeal heard in 0 to 5 of these cases in each year over a five year period. The best estimate is 5 applications for leave to appeal each year, and the appeal heard for two of these. An increase in the number of appeals will decrease the NPV.
2. In the long term the number of appeals per year will reduce by between 1 and 3, best estimate 2.
3. 0% to 40% of expert evidence which might not pass the test will still be tendered.
4. Normal pre-trial hearings in the Crown Court take between 0.5 and 3 days (best estimate 1 day), and one hour to one day in the magistrates' courts (best estimate half a day). The new judge-led meetings of experts take between 0.5 and 1 day (best estimate 1 day). Longer pre-trial and judge-led meetings will lead to a lower NPV.
5. In 40% to 60% of cases where expert evidence is unreliable, the trial will not proceed either because it is crucial to the prosecution case or because it is crucial to the defence case and the defendant decides to plead guilty rather than put the prosecution to proof.
6. Judge-led meetings of experts will be used in 0% to 5% (best estimate 2.5%) of cases where expert evidence is tendered. The more judge-led meetings of experts there are, the lower the NPV.
7. We have assumed that the power under 1B to appoint independent experts will be used 0 to 10 times a year, best estimate 5 times. The more times the power is used, when needed, the higher the NPV.

Risks

Risks to be considered include the risk that our assumptions are incorrect. In addition there is a risk that we have under-estimated the potential increase in costs associated with our recommended changes. We believe, however, that the risk of under-estimation is low because we have used conservative figures and ranges in our costing. We set out particular risks below:

1. We have used the information from the LSC as a proxy for all expert witnesses presenting evidence for the defence. The average costs and numbers paid from the courts' central funds might be very different and hence we might have under or over estimated our costs and benefits.
2. There might be a higher than estimated increase in appeals under the new test, or the increase could continue for longer than we have estimated. The appeal itself could take longer than average.
3. We have miscalculated the impact of our proposals on the amount of expert evidence tendered for admission in criminal cases, the number of times the reliability test would be applied, and how often a pre-trial hearing would be conducted. If we have underestimated these, then the costs of our proposals might be somewhat higher than we have anticipated.
4. If experts are not currently employing best practice regarding disclosure they could take more than one hour each to compile an appendix demonstrating reliability. This could result in higher costs for businesses. There may be more than 3,000 experts compiling such appendices.
5. We have underestimated the number of times the new judge-led pre-trial hearing under 1A will be used.
6. We have assumed that the panel selecting the independent experts will be prepared to work on a voluntary basis and can meet and receive administrative support from the MoJ. If this is not the case the start-up and ongoing costs of the panel could be significantly higher.
7. There is the low risk that the power under 1B would be used when not absolutely necessary, and that costs would increase (but with concomitant benefits). However, we believe the explicit limits on the power would prevent this from happening.

One in, one out

The new procedural requirements in 1A arguably impose some costs on experts, but they clarify what experts are already expected to do. We have estimated that if experts are already following disclosure requirements the total additional cost on experts would be £468,000. The total additional costs for businesses and sole traders offering expert evidence would amount to £468,000.

3. Specific impact tests

An impact assessment must consider the specific impacts of a policy option upon various groups within society. These specific tests are carried out below and refer to the implementation of Option 1.

Statutory equality duties: gender, disability and race.

If the recommendation for a court-appointed expert (1B) is taken forward, convening an *ad hoc* appointments panel might have some impact on individuals who have a role as a carer (evening or weekend meetings might be necessary, to utilise available resources). However, because the judicial discretion to call an expert witness would be used only very rarely, we do not think the impact of this proposal would be significant. Moreover, the impact of the proposal could be minimised. For example, where a meeting of the panel is convened, members could be given alternative dates, times and venues to accommodate, as far as possible, those with caring responsibilities.

After considering the equality impact assessment initial screening questions, we believe the recommendations set out in Option 1 will have no significant impact in terms of gender, disability, or race.

Competition assessment

According to Office of Fair Trading guidance,[48] the competition assessment must consider whether in any affected market, the proposal would directly or indirectly limit the number or range of suppliers, reduce the supplier incentives to compete vigorously, or limit the ability of suppliers to compete.

The Option 1 recommendations will affect the market for expert evidence. This has to be understood in the context of the commercialisation of expert evidence in England and Wales. Our recommendations will set minimum quality standards by which experts would be expected to work. The overall effect on competition between suppliers will be negligible because the reform measures will have a marked impact on only a small number of cases, on the assumption that most expert evidence tendered for admission in criminal cases is currently reliable. Moreover, any change would apply to all criminal cases involving expert evidence and so all experts would be subject to the same standards.

Small firms impact test

The size of businesses is determined by the number of employees. Some forensic companies are small or very small businesses; they employ fewer than 50 people. At least 75% of expert witnesses do not work in a larger expert witness grouping. Implementing Option 1 would therefore have an impact on small businesses. The policy would entail increased costs to experts because they would have to undertake the necessary additional preparatory work required to be able to demonstrate their expertise, to adhere to the pre-trial disclosure requirements and to be prepared to demonstrate the evidentiary reliability of their opinion evidence. Experts would, however, be paid for this work. Moreover, we anticipate the additional cost involved would decrease over time as experts would be able to reuse prepared material in subsequent cases.

[48] Office of Fair Trading, *Completing competition assessments in Impact Assessments: Guideline for policy makers* (OFT876) (August 2007), htpp://www.oft.gov.uk/shared_oft/reports/comp_policy/oft876.pdf (last visited 9 February 2011).

The impact identified here must be placed in context. The proposed statutory test does not require experts to do anything they are not already required to do under the common law. The test would codify the existing requirements and provide factors to help judges to assess the evidentiary reliability of expert evidence.

The recommendations under 1A to amend the pre-trial requirements of experts would support the statutory admissibility test and ensure, as far as possible, that only reliable expert evidence is tendered for admission in criminal proceedings. We do not anticipate that implementing 1A would have any significant adverse impact on small businesses. There are already disclosure requirements experts must adhere to. The recommended reform measures would merely add to these existing requirements and so there would be no substantial adverse impact.

Carbon assessment

We do not foresee any impact on carbon emissions.

Other environment

We do not foresee any impact on the environment.

Health impact assessment

As outlined above, we expect that our proposals under Option 1 would have a beneficial impact on health by reducing the likelihood of wrongful convictions and acquittals. Wrongful convictions and acquittals can have a detrimental impact on the mental and physical health of many people.

Human rights

If implemented, the proposed reforms set out in Option 1 would minimise the risk of unreliable expert evidence being responsible for wrongful convictions and acquittals. This has the obvious benefit of ensuring a fairer criminal justice system and promoting the protection of human rights under the European Convention on Human Rights and the Human Rights Act 1998.

Several Convention articles relate to fairness in criminal justice systems and, above all, require any convictions and punishments to be lawfully imposed. Most obviously, article 6 (the right to a fair trial) is involved, but other rights that can also be considered, including article 3 (protection against inhuman or degrading treatment or punishment), article 5 (the right to liberty and security of person) and article 8 (respect for private and family life).

Our recommended reforms would comply with the objectives of promoting and protecting human rights under the Human Rights Act 1998.

Justice impact test

The impact on the justice system of our proposals is considered throughout this impact assessment.

Rural proofing

We do not foresee any differential impact on rural areas.

Sustainable development

We do not foresee any impact on sustainable development.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added to provide further information about non-monetary costs and benefits from Specific Impact Tests, if relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

Basis of the review: [The basis of the review could be statutory (forming part of the legislation), it could be to review existing policy or there could be a political commitment to review]; N/A
Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?] N/A
Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach] N/A
Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured] N/A
Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives] N/A
Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection systematic collection of monitoring information for future policy review] If Option 2 is implemented then the application of the test should be monitored to see whether, at some later date, 1B should be brought into force. Currently there is no central collection of data on the number of cases in which expert evidence is tendered or admitted, or on the number of cases in which an expert opinion has wrongly been allowed to go before a criminal court. Increased data collection in this area would inform any PIR.
Reasons for not planning a PIR: The Law Commission does not implement policy and does not therefore review policy implementation.

APPENDIX D
ACKNOWLEDGMENTS

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The Royal College of Psychiatrists

Royal College of Veterinary Surgeons

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Society of Expert Witnesses

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UK Accreditation Service

UK Forensic Speech Science Community

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Better Trials Unit, Ministry of Justice

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** additional response to an earlier draft provided by Penny Cooper and James Badenoch QC. Professor Cooper also provided further comments from academics at the City Law School.

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