

Tulsa Law Review

Volume 43
Issue 2 *Daubert, Innocence, and the Future of
Forensic Science*

Winter 2007

(Why) Are Civil and Criminal Expert Evidence Difference

Deirdre Dwyer

Follow this and additional works at: <https://digitalcommons.law.utulsa.edu/tlr>



Part of the [Law Commons](#)

Recommended Citation

Deirdre Dwyer, *(Why) Are Civil and Criminal Expert Evidence Difference*, 43 Tulsa L. Rev. 381 (2013).

Available at: <https://digitalcommons.law.utulsa.edu/tlr/vol43/iss2/7>

This Article is brought to you for free and open access by TU Law Digital Commons. It has been accepted for inclusion in Tulsa Law Review by an authorized editor of TU Law Digital Commons. For more information, please contact megan-donald@utulsa.edu.

(WHY) ARE CIVIL AND CRIMINAL EXPERT EVIDENCE DIFFERENT?

Déirdre Dwyer*

In the fifteen years that have passed since the United States Supreme Court's decision in Daubert v. Merrell Dow Pharmaceuticals, Inc., it would appear that the admissibility regime laid down in that case is not being applied evenly: Experience suggests that civil expert evidence is scrutinized more closely than that in criminal litigation, and that civil plaintiffs are scrutinized more than their defendants, but criminal defendants more than their prosecutors. This runs counter to our general normative expectation that the admissibility of evidence should be determined irrespective of the procedural context in which it is brought, except that perhaps there is a higher burden on the prosecution than on the criminal defense to provide reliable evidence. Instead, these actual discrepancies should be understood by having regard to both the very different types of expert evidence under examination, and also to judicial expectations about the production of expert evidence. To the extent that the discrepancies in the scrutiny of different types of expert evidence are unwarranted, these might be corrected by a change in norms of conduct for civil expert witnesses, and better quality controls for forensic laboratories and practitioners.

I. INTRODUCTION

From the eastern side of the Atlantic, the 1993 decision of the United States Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, regarding the admissibility of scientific expert evidence,¹ extended six years later in *Kumho Tire v. Carmichael* to all expert evidence,² is both appealing, in that it attempts a principled approach to the vexed question of the admissibility of expert evidence,³ and at the same time slightly troubling, in that the volume of relevant appellate decisions and academic discussion suggests that *Daubert* raises at least as many questions as it purports to

* British Academy Postdoctoral Fellow, Faculty of Law, University of Oxford, and Junior Research Fellow of Pembroke College, Oxford. Some of my thoughts in this article about the asymmetries in civil and criminal evidence emerged during discussions at the end of 2005 with the late Professor Henrik Zahle of the University of Copenhagen. I would like to thank Mr. Binyamin Blum of Stanford Law School for his comments on an earlier draft of this paper.

1. 509 U.S. 579 (1993).

2. 526 U.S. 137 (1999).

3. See e.g. Paul Roberts, *Tyres with a 'Y': An English Perspective on Kumho Tire and Its Implications for the Admissibility of Expert Evidence*, 1 Intl. Commentary Evid. (1999) (available at www.bepress.com/ice/vol1/iss2/art5).

answer.⁴ Fifteen years ago there were concerns in both the United States and in England that the civil justice system would be overwhelmed by a sea of expertise, often unnecessary and often of questionable probative value.⁵ While the Supreme Court implemented *Daubert* hearings to test admissibility, the English senior judiciary, with the assistance of the Department for Constitutional Affairs (now the Ministry of Justice), reformed the way in which experts could be instructed before trial, as part of a much wider, case-management led, reform of civil procedure.⁶ While in England, the rules of evidence in civil and criminal litigation have been diverging, particularly over the last thirty-five years,⁷ in the United States a unity appears to have been maintained, thanks in large part to unified codification under the Uniform Rules of Evidence of 1974 and the Federal Rules of Evidence of 1975. One of the consequences of this unity is that *Daubert*, as an interpretation of FRE 702, is applicable equally to criminal and civil litigation. This provides us with an example of one of the areas in which *Daubert* seems to raise more questions than it answers, because although *Daubert* may be equally applicable, it is not equally applied.

At first glance, the difficulty is that the expert evidence presented in civil litigation is more closely scrutinized than that presented in criminal litigation.⁸ However, in 2000, Michael Risinger published a study of reported cases in which *Daubert* had been cited.⁹ This showed that there were also marked variations between prosecutor/plaintiff and defendant. He identified one hundred and twenty criminal appeal cases in which *Daubert* had been cited.¹⁰ Of these, sixty-seven represented cases of challenged government expertise, and the prosecution prevailed in sixty-one of these. In only one of the six which were found for the defense, was the expertise actually found to be generally undependable, rather than the appeal failing on some other procedural irregularity.¹¹ In marked contrast, of fifty-four complaints by criminal defendants that their expertise was improperly excluded, the defendant lost forty-four.¹² Of the ten that succeeded, seven related to a failure to hold a *Daubert* hearing, and only one case was actually remanded for retrial.¹³ In civil litigation, however, ninety percent of *Daubert* appeals were by the defendants, against the admission of the plaintiff's expertise, and the

4. We might begin with the fundamental philosophical difficulties that surround the Supreme Court's approach. See e.g. Susan Haack, *Trial and Error: The Supreme Court's Philosophy of Science*, 95 Am. J. Pub. Health S66 (2005).

5. *Natl. Inst. Compania v. Prudential Assurance Co.* [1993] 2 Lloyds Rep 68 (popularly known as "*The Ikarian Reefer*"); Lord Woolf, *Access to Justice: Interim Report* 23:17 (HMSO 1995).

6. Civil Procedure Rules 1998 (CPR). CPR pt. 35 concerns the use of "Experts and Assessors."

7. See Civil Evidence Act 1995; Civil Evidence Act 1972; Civil Evidence Act 1968; Criminal Justice Act 2003; Police and Criminal Evidence Act 1984.

8. See e.g. Erica Beecher-Monas, *Evaluating Scientific Evidence: An Interdisciplinary Framework for Intellectual Due Process* (Cambridge U. Press 2007); Margaret A. Berger, *Expert Testimony in Criminal Proceedings: Questions Daubert Does Not Answer*, 33 Seton Hall L. Rev. 1125 (2003); Peter J. Neufeld, *The (Near) Irrelevance of Daubert to Criminal Justice and Some Suggestions for Reform*, 95 Am. J. Pub. Health S107 (2005).

9. D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?* 64 Alb. L. Rev. 99 (2000).

10. *Id.* at 105.

11. *Id.*

12. *Id.* at 106.

13. *Id.* at 106-07.

defendants prevailed two-thirds of the time.¹⁴ Similar results were found in published first instance decisions.¹⁵ There are significant methodological difficulties with inferring general trial conduct from reported decisions, and particularly where those decisions are appellate.¹⁶ The published reports do broadly support the anecdotal evidence of the unequal application of *Daubert*. It would seem that the expert evidence of civil plaintiffs, particularly in toxic tort cases, is subject to greater scrutiny than that of civil defendants, while the expert evidence of criminal prosecutors is subject to less scrutiny than that of criminal defendants, or than that of civil parties.

Risinger also identified marked variations in the courts' approach to different types of expertise. In criminal litigation, the commonly given example is identification evidence, although this covers a number of disciplines, employing for example, latent fingerprints, DNA typing, hair, and bite marks. Of these, only DNA typing is based on a theory that has been developed and peer-reviewed outside the context of forensic investigation, and only DNA testing laboratories are subject to external quality assurance. There are significant theoretical and methodological issues about the use of long-established techniques, including latent fingerprint identification.¹⁷ However, forensic identification evidence, which is usually proffered by the prosecution, is usually admitted. Evidence of future dangerousness is also usually freely admissible, albeit at sentencing rather than at trial.¹⁸ When the defense objects to the admissibility of the prosecution's scientific identification evidence, it is not unheard of for courts to shift the burden onto the defense to show the inadmissibility of the evidence, rather than follow the usual rule; for example, in *Daubert*, that the party introducing the expert evidence must demonstrate its validity and reliability.¹⁹

Expert evidence on the reliability of eyewitness identification, presented almost exclusively by the defense, is commonly rejected.²⁰ A strong indication that the courts' behavior is at least in part linked to the substance of the evidence, rather than to the party proffering it, is that, where expert evidence may be introduced by either side, it tends to be equally treated. DNA evidence, which is relied on by both prosecution and defense, is subject to a higher level of admissibility scrutiny than other forms of expert identification evidence. Psychological evidence of syndromes, however, tends to be received much more skeptically, irrespective of whether the expert evidence is being proffered by the prosecution to support the credibility of the complainant's testimony, or

14. Risinger, *supra* n. 9, at 108.

15. *Id.* at 110 (stating that, "these [district court] findings mirror the court of appeals record, except that defendants have been successful more often in getting their experts accepted at the district court level . . .").

16. See e.g. Déirdre Dwyer, *Expert Evidence in the English Civil Courts, 1550–1800*, 28 J. Leg. Hist. 93, 95 (2007).

17. Lyn Haber & Ralph Norman Haber, *Scientific Validation of Fingerprint Evidence under Daubert*, L. Probability & Risk (forthcoming); Lyn Haber & Ralph Norman Haber, *Experiential or Scientific Expertise*, L. Probability & Risk (forthcoming); Jennifer Mnookin, *The Validity of Latent Fingerprint Identification: Confessions of a Fingerprinting Moderate*, L. Probability & Risk (forthcoming) (available on SSRN).

18. See Fed. R. Evid. 104(a) (The rules of evidence as we usually understand them apply to the admissibility of evidence at trial, but not at admissibility hearings themselves, or at sentencing hearings.); Beecher-Monas, *supra* n. 8, at 122–67.

19. See *U.S. v. Mitchell*, 365 F.3d 215 (3d Cir. 2004); *U.S. v. Crisp*, 324 F.3d 261 (4th Cir. 2003).

20. But see e.g. *U.S. v. Hines*, 55 F. Supp. 2d 62. Evidence of the inaccuracy of eyewitness testimony is published by the U.S. Law Digital Commons, 2007. Identification is in issue.

by the defense to mitigate the conduct of the defendant.²¹ In Risinger's study, when the defense challenged the prosecution's syndrome evidence, it was successful about half the time.²² This success rate may reflect judicial skepticism about syndrome evidence given its weak empirical underpinnings. However, as Risinger points out, if the empirical underpinnings are weak, then even a fifty percent success rate in defense challenges is nevertheless "evidence of systematic tolerance of anti-defendant irrationality."²³ Risinger also identified a number of factors that might affect the prevalence of specific types of expert evidence in the case law, particularly the appellate case law. For example, the prevalence of challenges (one in five at state level) on testimony concerning horizontal gaze nystagmus (HGN), a test for drunkenness, may simply reflect the desire and financial ability of middle class drivers to fight to keep their driving licenses.²⁴

Some of the possible causes of this uneven application are analyzed here, beginning by examining our normative expectation that the admissibility of evidence should be determined irrespective of the procedural context in which it is brought, except that perhaps there is a higher burden on the prosecution than on the criminal defense to provide reliable evidence. Our factual experience, which runs counter to these normative expectations, should be understood by having regard to two factors. First, the types of expert evidence under examination are commonly very different, depending on whether the evidence concerns the case for the prosecution, criminal defense, plaintiff, or civil defense. Even the expert evidence of causation presented by the plaintiff in a toxic tort case is likely to be different in nature from that presented by her opponent. Secondly, there are very different judicial expectations about the production of this expert evidence. In particular, judges expect that the expert witnesses of civil parties, particularly of plaintiffs, are likely to be biased, for a number of reasons that are examined here. In contrast, prosecution expert witnesses may be viewed as dispassionate and impartial state servants. To the extent that the discrepancies in the scrutiny of different types of expert evidence are unwarranted, these might be corrected by a change in expectations of appropriate conduct on the part of civil expert witnesses, and better quality controls for criminal expert witnesses.

II. NORMATIVE EXPECTATIONS OF THE ADMISSIBILITY OF EVIDENCE GENERALLY

In relation to the admissibility of evidence generally, what is our normative expectation of the relationship between criminal and civil litigation, and prosecutor/plaintiff and defendant? Our initial reaction might be to say that all evidence should be treated equally, at least in terms of judging its relevance for the purposes of FRE 401. However, if we think about the way in which evidence is actually employed in litigation, and particularly in the context of the trial, and about the way in which proof is regarded, at and after trial, it seems that there are a number of asymmetries. These

21. Risinger, *supra* n. 9, at 114.

22. *Id.* at 118.

23. *Id.* at 121.

24. *Id.* at 124.

asymmetries may extend to our consideration of admissibility. A useful starting point is to consider the relationship between civil and criminal litigation. There are generally greater consequences, socially and physically, of criminal conviction compared with adverse civil judgment, and so we might expect that the rules of evidence in a criminal action are geared more towards reducing the risk of an erroneous outcome than they are in a civil action. In turn, the risk to the dignity of the court is greater where an erroneous judgment is criminal in nature, and so the court may be more reluctant to convict erroneously. This is not, however, a principle of universal application. For example, the United Kingdom's Asylum and Immigration Tribunal, whose decisions may significantly affect the dignity of the individual, proceeds without reference to the legal rules of admissibility. Instead, the criterion of admissibility is relevance.²⁵ The effects of domestic criminal sanctions may be less serious for the individual than the effects of deportation, which may possibly include torture or execution. Severity of punishment may therefore not be the only criterion for determining the stringency of the rules governing the admissibility of evidence. Similarly, the civilian model of criminal law in the sixteenth century allowed that the severity of the punishment might be reduced where the court was less than certain in its conviction.²⁶ Before the nineteenth century, the Roman-canon courts developed processes and evidential rules that respected the dignity of the individual in civil as well as criminal actions, and were consequently slow. Simplification in civil process may have been led by changes in the commercial courts across Europe in the course of the modern period. Nörr has suggested that this was because "no more the individual in its entirety is at stake nor the law itself which covers man and his fate. The conflict, instead, turns to demarcated and depersonalized issues."²⁷

There are also asymmetries between the parties, arising within the context of asymmetries between civil and criminal litigation. The relationship between prosecutor and defendant in criminal litigation is not the same as the relationship between plaintiff and defendant. This is for four reasons. First, the parties to a civil action will be those engaged in the civil dispute that has led to the action, while in a criminal action it is usually the state rather than the victim who brings the prosecution. So while the civil plaintiff has an interest in resolving the original dispute on terms favorable to herself, the criminal prosecutor, as a third-party to the original alleged crime, has an interest in justice separate from that of the victim/complainant. Secondly, in a civil action the identity of the parties will not normally be in dispute since there is a continuity of actors from the private sphere into the public. In a criminal action, however, one of the main evidential issues is likely to concern whether the accused is the alleged perpetrator. Thus much of a criminal action may be concerned with demonstrating that the action has been joined between the correct parties. Thirdly, while it is a normative expectation of the provisions of civil procedure that the parties to an action are on an equal footing, it is the expectation of the provisions of criminal procedure that the prosecution will have

25. Asylum & Immig. Trib. (Proc.) Rules 51 (2005).

26. R. H. Helmholz, *The Ius Commune in England: Four Studies* 118 (Oxford U. Press 2001).

27. Knut Wolfgang, *Procedure in Mercantile Matters: Some Comparative Aspects*, in V. Piergiovanni, *The*
Published by the U Law Digital Commons, 2007 Duncker & Humblot 1987).

considerably greater resources than the defendant. In both situations legislation and case management may take steps to address this imbalance. For example, in England, the civil litigant representing herself may be given great leeway in accommodating her procedural errors, and costs and risks arising in the course of litigation may be allocated with regard to the relative ability of the parties to bear such financial impact.²⁸ In English criminal litigation there are greater duties on the prosecution to disclose evidence before trial than there are on the defense, and prosecuting counsel, acting as a “minister of justice,” is expected to exercise restraint in pursuing the prosecution. The defense may be able to exclude evidence because the prosecution has improperly obtained it, but the prosecution cannot similarly exclude defense evidence.²⁹ Fourthly, the outcome of an action is likely to be symmetrical in a civil action, because of the use of counter-claims, but asymmetrical in a criminal action. Thus, if the plaintiff in a civil action fails to prove her case against the defendant, it is very likely that the defendant will succeed against the plaintiff. However, if the prosecution fails to prove her case against the defendant, that is the end of the matter; there is almost no possibility of a symmetrical finding against the prosecutor that would indicate that the criminal defendant is actually innocent, rather than simply not proven guilty.

Given the severity attached by the court to a criminal conviction, and the greater relationship of inequality between the parties in criminal litigation, it should not be surprising that there are a number of specifically evidential measures in place to protect the criminal defendant. This starts with the burden in civil cases being considerably lower than in criminal cases. While a civil court will decide on the balance of probabilities, the criminal court must be certain of guilt “beyond reasonable doubt” (the traditional position at common law), be “sure” (the current position in England),³⁰ or form a “*conviction intime*” (as in France). The civil courts may be more willing to admit evidence of questionable reliability than the criminal courts, and then decide the question of reliability as a question of weight rather than of admissibility. In England, for example, the ultimate issue and hearsay rules have both been abolished in civil evidence.³¹ At the same time the criminal courts regularly consider an additional ground of inadmissibility, that the evidence, although relevant and reliable, is unduly prejudicial to the defendant.³² The general effect of this should be that criminal cases will tend to be decided on less evidence than civil cases, with the intention that the more serious consequences of a criminal verdict should only be arrived at by reliance on more reliable evidence.

The different consequences of criminal and civil action in turn affect what happens

28. CPR Rule 1.1(2)(a) requires that the court “so far as is practicable—ensur[es] that the parties are on an equal footing,” while Rule 35.9 enables the court to order one party to provide expert information to another party which may otherwise lack that information.

29. See Paul Roberts & Adrian Zuckerman, *Criminal Evidence* (Oxford U. Press 2004).

30. Chris N. Heffer, *The Language of Conviction and the Convictions of Certainty: Is “Sure” an Impossible Standard of Proof?* 5 *Intl. Commentary Evid.* (2007) (available at <http://www.bepress.com/ice/vol5/iss1/art5>).

31. Civil Evidence Act 1995 s. 1; Civil Evidence Act 1972 ss. 3(1), 3(2).

32. See Fed. R. Evid. 403; Police and Criminal Evidence Act 1984 s. 78; Roberts & Zuckerman, *supra* n.

if it is believed, after trial, that a court decision is erroneous, in fact or in law. In common law jurisdictions both civil and criminal defense may seek leave to appeal, but only the civil plaintiff but not the criminal prosecutor. Appeal is usually on the basis of error of law rather than fact. However, English criminal law allows the criminal, but not the civil, defendant, to seek an appeal where there is fresh evidence.³³ Asymmetrically, new evidence has not traditionally enabled a “not guilty” verdict to be reviewed, because of the rule against double jeopardy.³⁴ Similarly, a civil defendant must respond to the allegations against her, or risk default judgment. A criminal defendant, on the other hand, is not required to defend herself, both because there is a much higher evidential burden on the prosecution than on the civil claimant, and because the general rule is that adverse inferences cannot be drawn from a criminal defendant’s silence.³⁵

So although at first glance we might be tempted to say that the rules of evidence operate independently of the procedural context in which the evidence is introduced, however, on closer examination it becomes apparent that the rules of evidence apply differently between criminal and civil litigation, and between prosecutor/plaintiff and defendant. We might expect to see that the rules of evidence are enforced most strictly against the criminal prosecutor, while the criminal defendant is offered a wider leeway, civil parties are treated equally, and the rules of evidence apply more strictly in criminal than in civil litigation. In practice it seems that this expectation of evidential treatment is counter-factual, at least when applied to expert evidence under FRE 702.

In the following two sections, I examine two ways in which we might address the seeming discrepancy between normative expectation and factual experience. First, there may be differences in the types of expert evidence presented that are epistemologically more significant than the general asymmetries between civil and criminal, and plaintiff/prosecutor and defendant. Secondly, judicial expectations of the manner in which expert evidence is selected and produced for trial are examined.

III. DIFFERENCES IN THE TYPES OF EXPERT EVIDENCE

The asymmetries in the application of *Daubert* may arise because fundamental differences in the evidential nature of the types of expert evidence in issue are more significant than the general evidential asymmetries identified above. Our original model assumed that expert evidence can, and should, be uniformly treated, irrespective of which side offers it, and of whether civil or criminal. But if we factor in the possibility that we are trying to prove different things, with different types of expert evidence, in different procedural contexts, this expectation may falter.

A. *Civil Expert Evidence: Toxic Torts*

Let us start with epidemiological evidence of causation in toxic tort litigation. This is the example most frequently given of civil expert evidence being subject to judicial

33. Criminal Appeal Act 1995 s. 9.

34. This rule is no longer absolute in England following the Criminal Justice Act of 2003.

35. For exceptions to the “right to silence” in England, see K. Grevling, *Restrictions on the Right to Silence—Introduction in Pinson on Evidence*, 1039 (H. Malek ed., Sweet & Maxwell 2005).

scrutiny, although it should not be taken as necessarily typical. This evidence has a high scientific content, and the demonstration of causation is indirect in that it rests on arguments about whether the claimant was statistically more likely to suffer harm as a result of exposure to the allegedly toxic substance. The scientific evidence has not been collected to address directly the question of whether a specific individual has suffered harm. Epidemiological evidence is usually produced outside the context of litigation as part of wider research in an established scientific community, and subject to various processes of peer-approval including peer review. Both plaintiffs and defendants bring such epidemiological evidence, but the courts are far more likely to accept the epidemiological evidence of the defendants than that of the plaintiffs.

Under the Federal Rules of Evidence, in the years preceding *Daubert*, there was a series of class toxic tort actions in which there was little or no challenge to the admissibility of the plaintiff's expert evidence. *Daubert* itself, for example, came at the end of a series of class actions concerning Bendectin. The effect of *Daubert* has been to significantly curtail such class toxic tort actions.³⁶ There are good policy arguments for and against the creation of a rule of evidence that effects such curtailment, and there are good reasons to suspect that there was lobbying within the United States to bring about a rule that would curtail toxic tort litigation. However, the existence of such policy arguments, and evidence for attempted political influence in the Supreme Court's decision, does not affect the possibility that there may also be a valid epistemological basis for the effect of *Daubert*.

The way in which welfare provisions are arranged in the United States appears to encourage those who consider themselves harmed, to pursue a remedy through the civil courts in order to provide for themselves following that harm. Similarly, the way in which litigation is funded encourages class actions, and encourages plaintiffs, and their attorneys, to seek substantial awards. Civil juries appear to agree with high civil awards, although these awards may not survive on appeal. Against these social benefits, this large-scale, protracted, high profile, multi-million dollar litigation may be seen as adverse to the commercial interests of companies who may eventually be exonerated at trial; these companies may relocate within the United States or to another country, and such relocation, and the general cost of litigation, may adversely impact local, state, and national economies. By the early 1990s there was a belief popular in the United States that the courts were being flooded by "junk science," and that the civil justice system was in consequence on the verge of collapse. In 1991, Peter Huber wrote his extremely influential book, *Galileo's Revenge: Junk Science in the Courtroom*.³⁷ Following on from *Galileo's Revenge*, the Republicans had, by 1992, tabled proposals in Congress to tighten up the Federal Rules of Evidence with a new reliability requirement for expert evidence. So when the Supreme Court handed down judgment in *Daubert* in 1993, it did

36. If we read Justice Blackmun's opinion in *Daubert* without the benefit of fifteen years of hindsight, it seems that the Supreme Court intended to liberalize the admissibility of expert evidence, removing the "general acceptance" stricture of *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). On the initial expectations of commentators versus actual judicial interpretation, see Lloyd Dixon & Brian Gill, *Changes in the Standards for Admitting Expert Evidence in Federal Civil Cases since the Daubert Decision* (Rand 2001).

so at a time of significant political interest. The effect of *Daubert* is that class toxic tort actions are now usually resolved in favor of the corporate defendant.

But, separate from the policy arguments, there does appear to be a satisfactory epistemological justification for a rule that favors the corporate defendant in such actions. We would like to hope that large corporations conduct their affairs with due regard to the safety of their products and activities, for ethical, commercial, and legal reasons. It has to be admitted of course that such ethical conduct is far from universal. We might therefore expect that the defendant has conducted appropriate tests, and put appropriate processes in place, in reliance on scientific orthodoxy. So, if one or more plaintiffs wishes to argue that the product is in fact dangerous, the two most obvious routes of argument would be that the defendant had failed to carry out, or had ignored, tests generally accepted as appropriate, or else that the generally accepted tests are not in fact appropriate.³⁸ The former route of argument would require direct “smoking gun” evidence, most likely to be obtained through discovery (or perhaps a disgruntled former employee). The latter route usually requires novel or otherwise minority forms of expertise. The classic form of toxic tort class action relied on the hired gun of novel expertise rather than the smoking gun of direct evidence.³⁹

Assuming that the defendant acted in good faith, and was not subject to cognitive error in reviewing the results of the assessment, then scientific orthodoxy will back the actions of the defendant. It is possible that there is disagreement within the scientific orthodoxy, or that disagreement has developed since the original safety assessments were conducted, but in the absence of orthodox disagreement, the claimant is likely to have to rely on novel or otherwise non-orthodox expert evidence in order to proceed with her claim. Thus, the *Daubert* test particularly favors toxic tort defendants, in the absence of evidence that the defendant had been negligent or reckless in the conducting of safety assessments.

Although *Daubert* may have purported to move away from the conservative “general acceptance” approach of *Frye v. United States*,⁴⁰ *Daubert*’s criteria for establishing justified belief actually rely on the extent to which that belief is accepted by a community rather than whether the belief is true. The Supreme Court in *Daubert* suggested four factors for identifying admissible scientific expert evidence: testability, peer review or publication, the known or potential rate of error, and widespread acceptance.⁴¹ The first and third of these are veritistic, that is they relate to whether a methodology is accurate, or conclusions are true. The second and fourth are social, in that they are concerned with whether others in the scientific community, however defined, accept the expert’s method. The concern about consensus as a test for admissibility is that it means that the court will accept or reject expert evidence not on the basis of whether it believes it to be true, but whether it is accepted by others in the

38. I ignore here potential issues regarding strict liability in relation to defective products.

39. See Gary Edmond & David Mercer, *Experts and Expertise in Legal and Regulatory Settings*, in *Expertise in Regulation and Law* 4–5 (Gary Edmond ed., Ashgate 2004); see generally Gary Edmond & David Mercer, *Daubert and the Exclusionary Ethos: The Convergence of Corporate and Judicial Attitudes Towards the Admissibility of Expert Evidence in Tort Litigation*, 26 L. & Policy 231 (2004).

40. 293 F. 1013, 1014 (D.C. Cir. 1923).

field. Truth may therefore be blocked by false orthodoxy. We might call this a “Copernicus effect,” after the rejection of the work of the sixteenth century Polish astronomer and mathematician Copernicus by his contemporaries. If a court needs to decide the case of *A v. B*, should it prefer the evidence E_A of *A*’s expert, which is based on scientific well respected theories and methods, or the evidence E_B of *B*’s expert, which breaks with orthodoxy but which appears to the court to be particularly convincing in the instant case? Does it matter whether E_B is cautiously welcomed by the scientific community, treated with suspicion, firmly rejected, or even ignored?

My initial reaction would be that if the court were convinced that E_B is correct, then the court should adopt E_B . This may however be because I prefer the David against the Goliath. So if I were told that not only E_B but *B* herself was a “David” then my preference for E_B would only be increased. But what if *B* was actually a multinational corporation, while *A* was a vulnerable, impecunious party? I suspect that E_B would be transformed in my mind from being the product of a maverick genius scientist to being a mercenary charlatan in the pay of *B*, and I should be outraged that *A*, even with the might of scientific orthodoxy on her side, might be denied justice. There may be, however, good reasons to accept orthodoxy within the context of litigation. However attractive E_B might be, modern science is littered with the remains of methodological advances that seemed too good to be true, because they were just that, too good to be true. Although we might like to believe that the risk is reduced by peer acceptance, as *Daubert* suggests, there is the peer acceptance that recognizes new ground may be being broken, and the peer acceptance that an approach or theory is established and reliable. *Daubert* is, or perhaps should be, only really concerned with the latter. Many of the methodological advances that were too good to be true aroused significant positive interest in the scientific community at the time. In recent times, one need think only of erroneous reports of successful cold fusion⁴² and fraudulent reports of human cloning.⁴³ The courts should therefore err in favor of established expertise over innovative expertise. That does not necessarily mean that there is no place for a Copernicus in judicial fact finding, but only that civil litigation is not in most circumstances the place in which to play out scientific controversies. While the experts in *A v. B* can continue their controversy after judgment is handed down, and eventually realize that all were wrong, *A* and *B* are bound by the finding of fact as of the day of judgment, and we should therefore perhaps be slightly conservative in our choice between E_A and E_B .

B. Criminal Expert Evidence: Identification

Criminal expert evidence is very different from civil expert evidence in three ways. First, much of the expert evidence presented at a criminal trial is the product of disciplines that have been developed for the criminal process, while most expert evidence in civil trials is in use in society more widely, including in the area of academic

42. Energy Research Advisory Bd., *Cold Fusion Research*, www.ncas.org/erab/index.html (Nov. 1989).

43. Erika Check & David Cyranoski, *Korean Scandal Will Have Global Fallout*, 438 *Nature* 1056 (2005). See also Geoff Brumfiel, *Misconduct? It's All Academic . . .*, 445 *Nature* 240 (2007); Ute Deichmann & Benno Müller-Hill, *The Fraud of Abderhalden's Enzymes*, 393 *Nature* 109 (1998) (which considered an earlier,

scientific research. Secondly, the evidential issue which the expert evidence is intended to prove is often very different. In many civil actions, the expert evidence is concerned with general states of affairs. For example, what would a medical expert have done in a situation like the one in issue, or is the defendant's product considered statistically likely to harm people like the plaintiff? However, most of the expert evidence in criminal actions is concerned with linking the defendant specifically to the crime. For example, do the fingerprints found on the murder weapon belong to the defendant; did the bullet found in the victim come from the defendant's gun; is the defendant dangerous? The third difference is that expert evidence in criminal litigation is almost exclusively the preserve of the state. This is in turn for three reasons: First, almost all specialists in forensic science are employed by the state;⁴⁴ secondly, most defendants are unable to afford to instruct their own experts, and public defense funds are limited in all jurisdictions;⁴⁵ thirdly, the state controls crime scenes and physical evidence, and in turn access to materials for scientific testing.⁴⁶

Objections to classification of a type of criminal expert evidence as "Daubert-admissible" can be divided into three categories. First, the science on which many identification techniques, such as latent fingerprint or bite marks, are based, is at best of questionable validity. It has never been demonstrated, for example, that human fingerprints actually are unique. Secondly, the methods developed for conducting a test may lack the rigor required to overcome basic cognitive biases. Cognitive bias might be introduced in a number of ways, increasing the likelihood of a false positive result in a scientific identification test: The tester may be given other material to suggest that the police believe that this sample came from the suspect; or the tester may be told, with details, that this is a particular heinous crime; where a test result is double-checked, the person double-checking is told beforehand that the first tester found a positive result.⁴⁷ Thirdly, there may be inadequate training, ongoing certification of individuals, or inspections of laboratories to be sure that correct practice is being followed. Arguments against *Daubert* admissibility may tend to conflate two or more of these factors, and this hinders analysis of the issues.

So if it is so questionable whether fingerprint evidence, to choose a classic example, should be considered "Daubert-admissible," why are the courts so slow to exclude it? Four answers come to mind. The first is that there has been a systematic

44. This is as true in England or Australia as it is in the U.S., although in England and Australia there have been attempts to make forensic scientists operationally independent of the state, and available to those defendants able to afford their own expert evidence.

45. See J.R. Spencer, *Court Experts and Expert Witnesses: Have We a Lesson to Learn from the French?* 45 *Current Leg. Problems* 213, 221–22 (1992). Although the prosecution has significantly greater access to expert resources, it would be a mistake to suggest that the resources of the state are infinite, or effectively unlimited irrespective of the nature of the case.

46. The O. J. Simpson trial provides an example of the importance of the fact that one of the parties owns the crime scene. The defense requested access to crime scene samples for DNA fingerprinting. The prosecution, who owned the samples, insisted that they were too small to be split in half, so that the defense could conduct their own expert tests. Sheila Jasanoff, *The Eye of Everyman: Witnessing DNA in the Simpson Trial*, 28 *Soc. Stud. Sci.* 713, 724–25 (1998).

47. See generally Itiel E. Dror & David Charlton, *Why Experts Make Errors*, 56 *J. Forensic Identification* 600 (2006); Itiel E. Dror et al., *Contextual Information Renders Experts Vulnerable to Making Erroneous Identifications*, 156 *Forensic Sci. Int'l.* 74 (2006).

failure by the defense bar to litigate issues of the reliability of prosecution expert evidence. This is not a problem of “system bias coming from judicial decisions.”⁴⁸ The second is that there are strong policy grounds not to exclude a long adopted form of expert evidence, because to do so may not only adversely affect current and all future criminal prosecutions (though not investigations), but may also open the floodgates to appeals in all cases in which fingerprint identification evidence played a part. Further, there are cases in which the defendant pleads guilty on the basis of an identification, and so the identification was never proffered as evidence in court. This answer would only hold if the courts were satisfied that the actual error rates from identification evidence were very low, and/or that identification errors did not result in a false conviction. The third answer is that the courts consider the errors to have no practical consequence, because identification evidence is also used alongside other corroborative evidence. The fourth answer, related to the third, is that the courts believe that the experts in a criminal action are acting for the public good, and so criminal expert evidence is not subject to bias in the same way as civil expert evidence.

These answers would be bolstered by empirical evidence that the theoretically possible errors in criminal expert evidence in practice either rarely arise or rarely have any practical consequence when they do arise. However, there is a shortage of statistically robust empirical data. When Peter Neufeld, of the Innocence Project, presented us with a litany of examples of scientific identification evidence that were wrong, and thus resulted in wrongful conviction,⁴⁹ these examples were qualitative and illustrative rather than quantitative. Because the Innocence Project is only conducting DNA testing on people who have been convicted and who continue to protest their innocence, we are not looking at people who were ruled out of an investigation, for example by fingerprint evidence, or who were acquitted, or who were found guilty and do not wish to appeal this. The project only accepts “cases where post-conviction DNA testing can yield conclusive proof of innocence.”⁵⁰

IV. JUDICIAL EXPECTATIONS OF THE PRODUCTION OF EXPERT EVIDENCE

It is important to remember the basic point that a ruling by the court on the admissibility of expert evidence does not mean that the jury is bound to accept that evidence. Rather, ruling under FRE 401 merely allows the expert evidence to cross the threshold. The fact that the expert evidence has been produced by a representative of a body whom the court considers to be reputable may be sufficient for the judge to allow the evidence in before the jury. Evidence can still be wrong without being “junk.” So if the court allows in prosecution expert evidence on the basis of this state imprimatur, but is much more careful about allowing in the expert evidence of civil plaintiffs, particularly in class actions, then this suggests either that the courts are openly political in their support of the state and large corporations, or else that there is something in the nature of the plaintiff’s evidence that makes the courts suspicious in a way that

48. Risinger, *supra* n. 9, at 135.

49. Neufeld, *supra* n. 8.

50. Innocence Project, *Frequently Asked Questions, How Do You Choose Your Cases? How Many Letters Do You Receive?* www.innocenceproject.org/Content/103.asp (accessed Mar. 28, 2008).

prosecution evidence does not.

Although we are accustomed to thinking of prosecution expert witnesses as actors in an adversarial system, there are ways in which we might benefit from conceptualising them as court experts. For example, in a continental Europe penal process, the prosecution's expert witness is a state employee, who is likely to have as her sole work assisting in the investigation and prosecution of crime.⁵¹ The job of the prosecution's expert witness is therefore to assist in the conviction of the guilty, while avoiding the conviction of the innocent.⁵² It is not her job to assist in the winning of the case for the sake of winning.⁵³ The prosecution's expert witnesses are unlikely to be countered by defense expert witnesses, and so they act as the only form of advice to the court.

Expert witnesses in civil litigation are employed on a very different basis. Although experts may be employed by the parties to decide whether and how to proceed with an action, the principal role of the expert is to act as an expert witness in support of the party's position. The expert witness is selected, instructed, and remunerated by the party, with the expectation of support for the party during the litigation. In this sense, the expert witness is inevitably "partisan" in that she is "of the party." But is the expert witness inevitably also partisan in the sense of being biased in favor of the party who instructs her? This is a more complex question than it may appear at first blush.⁵⁴ An expert may consciously choose to adopt a position that supports the party that instructs her. She may do this for purely mercenary reasons (and the financial incentives are significant), or because through proximity to her party's cause, she becomes sympathetic to it. It is more likely, however, that the expert was approached by the party with the prior knowledge that, from previous work by the expert in the courtroom or outside, the expert is likely to give a favorable opinion. Where the opinion is not favorable, the party is free to stop using that expert, to conceal that an unfavorable opinion was ever received under the cloak of litigation privilege, and to search the market further until a favorable opinion is obtained.⁵⁵

This practice of "expert shopping" appears to be far more prevalent in civil litigation than in criminal, although the cloak of litigation privilege makes quantitative analysis of the activity impossible. There are, however, certain categories of civil litigation where we might expect it to be more pronounced on one side than on the other. Toxic tort actions are a leading example. Provided we assume that the producer of the allegedly harmful product has acted in good faith, it is likely that it already has a body of expertise that supports its claim that her product or activity is safe. This can be

51. A principal exception is medical expert evidence, for example in relation to *post mortem* examinations, or the interpretation of the results of such examinations. The pathologist conducting the autopsy may be employed full or part time by the state, but other expert witnesses will be paid for their time on an ad hoc basis. Criminal expert witnesses who are not employed in the criminal justice system should not be treated with the same (mild) deference accorded to those who are.

52. It is a real difficulty that forensic scientists, like other law enforcement officials, may decide that they "know" the identity of the perpetrator of a crime, and adjust the evidence accordingly.

53. *But see* Jack V. Matson, *Effective Expert Witnessing* 17–25 (3d ed., CRC Press 1999).

54. *See* Déirdre M. Dwyer, *The Causes and Manifestations of Bias in Civil Expert Evidence*, 26 Civ. Just. Q. 425 (2007).

55. *See* Déirdre M. Dwyer, *The Effective Management of Bias in Civil Expert Evidence*, 26 Civ. Just. Q. 57 (2007).

supplemented by epidemiological evidence. A corporate defendant is likely to rely on reputable expertise because it has an ongoing public existence that would be likely to be damaged by recourse to quackery. However, the plaintiff is likely to be fighting against scientific orthodoxy, and is likely to be only in the public arena for long enough to win the action. It is therefore in the plaintiff's interest to use whatever expertise is available. So the court might have better reason a priori to suspect the expertise of the plaintiffs in certain types of action.

V. IMPROVING THE ADMISSIBILITY OF EXPERT EVIDENCE

A. Civil Expert Evidence

The differences between prosecution expert witnesses and civil (particularly plaintiff) expert witnesses are structural, and there is therefore no simple and complete resolution to the imbalance in the normative expectations of the court regarding the conduct of the different types of experts. It may however be conceptually, albeit perhaps not practically, straightforward to reduce the perception that many civil experts are not only partisan but mercenary. Drawing on the experience of the English civil courts in addressing rising concerns of unprincipled partisanship in the 1990s, it may be possible to realign the overriding duty of the expert witness away from her instructing party and towards the court.⁵⁶ In England this is relatively straightforward because there is already a similar duty owed by barristers to the court. Rule 202 of the current Bar Code of Conduct requires that “[a practicing barrister] must assist the Court in the administration of justice and must not deceive or knowingly or recklessly mislead the Court.”⁵⁷ There are similar provisions for solicitor-advocates.⁵⁸ The duty is imposed on experts by Civil Procedure Rule 35.3: “(1) It is the duty of an expert to help the court on the matters within his expertise; (2) This duty overrides any obligation to the person from whom he has received instructions or by whom he is paid.” While the advocate's duty to assist the court is a matter of professional ethics, subject to disciplinary action,⁵⁹ rather than law, the expert's duty to assist the court is a legal one, with no straightforward remedy.⁶⁰ The extent to which an expert's duties to assist and not mislead overlap with, or are distinct from, an advocate's duties is not yet fully understood.⁶¹

By way of contrast, counsel in the United States would appear to be subject to an

56. See Howard H. Kaufman, *The Expert Witness: Neither Frye nor Daubert Solved the Problem: What Can Be Done?* 15 Intl. Rev. L. Computers & Tech. 79 (2001).

57. *The Law Society's Code for Advocacy* R. 22 (2003).

58. *Solicitor's Practice Rules* R. 1(c), 16A (2007).

59. E.g. *Regina v. Visitors to the Inns of Court* [1993] 3 WLR 287; [1994] QB 1 (CA). A barrister was initially disbarred for presenting to a witness under examination that the barrister possessed a copy of a document written by the witness when she was in fact holding a retyped version. Calder's disbarment was overturned in the Court of Appeal, sitting as the second appeal from her professional disciplinary tribunal. *Id.*

60. D irdre Dwyer, *Legal Remedies for the Negligent Expert*, 12 Intl. J. Evid. & Proof 93 (2008); See also Bruce D. Sales & Daniel W. Shuman, *Experts in Court: Reconciling Law, Science and Professional Knowledge* 129 (Am. Psychol. Assn. 2005) (on alternative approaches to improving the quality of expert evidence, and reducing “professional deviancy” which “cannot be explained or justified by legitimate professional reasoning”).

injunction against falsehood, but not against being misleading. For example, Rule 3.3 of the Model Rules for Professional Conduct of the American Bar Association imposes a duty of “candor toward the tribunal,” which refers to “false” rather than “misleading” statements. This is a subtle but deeply significant distinction. It may also be observed in the use of expert witnesses. For example, in the case of *Marrogi v. Howard*, the Louisiana Supreme Court held that, “Properly viewed . . . the roles of ‘hired gun’ and servant of the court are not necessarily incompatible. In reality, the expert retained for litigation is hired to present truthful and competent testimony that puts his client’s position in the best possible light.”⁶² There is a fine ethical line for experts in the American civil courts to tread. As Kadane has explained, “The attorney who hires you will make it clear to what they want you to testify . . . [s]ometimes . . . an attorney asks for testimony that I feel I cannot give, because what is being asked for is not true.”⁶³

Does it make any difference if we raise the bar of ethical conduct? If we look at the example of English civil procedure in the 1990s, then the answer would appear to be affirmative. Moral exhortations do work, if backed up with suitable case management powers.⁶⁴ For example, in England, the civil case management judge must give permission for an expert to be appointed to provide a report, and possibly then to testify, and actions in bad faith can be penalized through costs. In England, the introduction of expert evidence reforms, including greater stipulation of what can go into an expert report, led to the disappearance of “professional experts,” and was replaced by people who had real work and then acted as experts as a secondary activity.⁶⁵

B. Criminal Expert Evidence

While we may be able through practical means to improve the actual reliability of civil expert evidence by improving our normative expectations of its reliability, a different set of challenges face us with criminal expert evidence. There, the courts appear already to have a high normative expectation of ethical conduct, but the general quality of the theories, methodologies, and quality assurance systems appears to be lower than in the civil justice systems. While the general equality of arms with regard to expertise in civil litigation ensures that incompetence and bias are at least identified and challenged, the absence of effective defense challenges to expertise in criminal litigation means that quality control cannot occur in the crucible of the trial, but must be embedded into the structures of the way in which the prosecution produces its expertise. Thus quality controls, with external validation, and organizational independence, should be

62. 805 So. 2d 1118, 1132 (La. 2002). See also Joseph B. Kadane, *Ethical Issues in Being an Expert Witness*, 4 L. Probability & Risk 21 (2005).

63. Kadane, *supra* n. 62, at 21–22.

64. Déirdre Dwyer, *Changing Approaches to Expert Evidence in England and Italy*, 1 Intl. Commentary Evid. (2003) (available at www.bepress.com/ice/vol1/iss2/art4/).

65. Based on interviews conducted by the author with a number of High Court Judges and Masters at the Royal Courts of Justice, in London, and District Judges in County Courts outside London, between 2001 and 2003. See Joel Cooper & Issac M. Neuhaus, *The “Hired Gun” Effect: Assessing the Effect of Pay, Frequency of Testifying, and Credentials on the Perception of Expert Testimony*, 24 L. & Hum. Behav. 149 (2000) (experiments by the authors suggest that experts who are highly paid for their testimony and who testify frequently are perceived by jurors as “hired guns,” and are neither liked nor believed). This is most likely to be the case when the testimony is complex and cannot be easily processed.

introduced into our forensic science laboratories, where these are not already present.

VI. CONCLUSION

This article has addressed a puzzling feature of expert evidence in the United States under *Daubert*, that not only is civil expert evidence more closely scrutinized for admissibility by the courts than criminal expert evidence, but criminal prosecutors and civil defendants appear to be treated more favorably than criminal defendants and civil plaintiffs. This relatively simple patterning has been shown on analysis to conceal a significant number of issues about the way in which we treat evidence in criminal and civil litigation differently, and the evidence of each of the parties within each type of litigation, as well as issues about structural differences between civil and criminal expert evidence generally, and in relation to particular types of expert evidence. It has not been possible to examine exhaustively how different types of expert evidence exhibit different structural properties affecting admissibility, but examples have been given of these different properties, such as epidemiological evidence in toxic tort litigation, and scientific identification evidence, particularly fingerprint evidence, in criminal litigation. Expert evidence is not, and cannot be, open to scrutiny under *Daubert* (or any similar test of admissibility) in a homogenous fashion. However, some of the differences can be addressed, for example, by a reduction in mercenary partisanship by civil expert witnesses, and better quality controls in relation to the work of forensic science laboratories.