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ARTICLES

IS EXPERT EVIDENCE REALLY DIFFERENT?

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INTRODUCTION

Daubert v. Merrell Dow Pharmaceuticals, Inc.[1] has transformed much of American evidence law. In assigning judges the role of "gatekeepers" of scientific and other expert evidence,[2] and in setting out a list of factors[3]

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1 509 U.S. 579 (1993).

2 *See id.* at 597; *see also* Kumho Tire Co. v. Carmichael, 526 U.S. 137, 147 (1999) (reaffirming *Daubert* and applying it to all expert testimony); Gen. Elec. Co. v. Joiner, 522 U.S. 136, 142 (1997) (same).

3 *See Daubert*, 509 U.S. at 592–95. None of the factors is required. But although the Court denies that they are a "definitive checklist or test," the listed factors have in practice dominated the judicial inquiry into reliability and are widely understood, together, to erect stringent barriers to admissibility. *Id.* at 593; *see also* Balaban v. City of Cleveland, No. 1:07–cv–1366, 2010 WL 481283, at *7 (N.D. Ohio Feb. 10, 2010) (noting "*Daubert*'s stringent requirements"); Munoz v. United States, No. 07-CV-2080(ILG), 2008 WL 2942861, at *14 (E.D.N.Y. July 28, 2008) (describing *Daubert* standards as "more stringent" than that applied to other testimony); Hartford Ins. Co. v. Gen. Elec. Co., 526 F. Supp. 2d 250, 252 (D.R.I. 2007) (noting *Daubert*'s "stringent" standards of reliability); Nat'l Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1517 (E.D. Ark. 1996) (same); Cavallo v. Star Enter., 892 F. Supp. 756, 773 (E.D. Va. 1995) (same); 3 MICHAEL H. GRAHAM, HANDBOOK OF FEDERAL EVIDENCE § 702:5, at 105–06 (6th ed. 2006) (complaining that *Daubert* has turned out in application to be more stringent than the Court intended); Paul C. Gian-

designed principally to keep so-called junk science out of the courtroom,[4] the Supreme Court launched the trial process on a course in which *Daubert* hearings and *Daubert*-inspired exclusions of expert evidence are a pervasive feature of modern federal and state litigation.[5]

Daubert has been subject to many criticisms. Some focus on the majority's clumsy philosophy of science.[6] Others note the poor fit between the *Daubert* criteria and the diverse types of expert evidence to which *Daubert* now applies.[7] Still others express the concern that *Daubert*'s heightened evidentiary hurdles disproportionately burden the mass tort and employment discrimination plaintiffs who are more likely to rely on non-traditional experts and expertise.[8] And there is the broad worry that law should not outsource its own irreducibly legal determinations to science and scientists with different goals and consequently different standards.[9]

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nelli, *The Supreme Court's "Criminal"* Daubert *Cases*, 33 SETON HALL L. REV. 1071, 1111 (2000) ("*Daubert* has evolved into a stringent standard in civil cases.").

4 *See Daubert*, 509 U.S. at 592–95. On *Daubert*'s concern with junk science, see *Joiner*, 509 U.S. at 153 (Stevens, J., concurring). For the most prominent attack on the use of junk science, see PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991). And on understanding *Daubert* in such terms, see Edward D. Cavanagh, *Making Sense of* Twombly, 63 S.C. L. REV. 97, 117 (2011) (interpreting *Daubert* as focused on the problem of junk science); A. Leah Vickers, Daubert*, Critique and Interpretation: What Empirical Studies Tell Us About the Application of* Daubert, 40 U.S.F. L. REV. 109, 111 (2005) (same).

5 *Daubert* was an interpretation of the version of Rule 702 of the Federal Rules of Evidence that existed at the time of the decision, and was the impetus, along with *Joiner* and *Kumho Tire*, for the current version of that rule. As such, the *Daubert* trilogy is applicable only in the federal courts, but the majority of states have nevertheless chosen to follow *Daubert*'s lead with few modifications. *See* Clark Hedger, Comment, Daubert *and the States: A Critical Analysis of Emerging Trends*, 49 ST. LOUIS U. L.J. 177, 190–205 (2004); *see also* Edward K. Cheng & Albert H. Yoon, *Does* Frye *or* Daubert *Matter? A Study of Scientific Admissibility Standards*, 91 VA. L. REV. 471, 485–513 (2005) (analyzing adoption and non-adoption of *Daubert* in state courts).

6 *See* David S. Caudill & Richard E. Redding, *Junk* Philosophy *of Science?: The Paradox of Expertise and Interdisciplinarity in Federal Courts*, 57 WASH. & LEE L. REV. 685, 703–24 (2000); Susan Haack, *An Epistemologist in the Bramble-Bush: At the Supreme Court with Mr. Joiner*, 26 J. HEALTH POL. POL'Y & L. 217, 230–35 (2001); Susan Haack, *Federal Philosophy of Science: A Deconstruction—And a Reconstruction*, 5 N.Y.U. J.L. & LIBERTY 394 (2010).

7 *See* Marron v. Stromstad, 123 P.3d 992, 1006 (Alaska 2005) (describing *Daubert* as "useless" for non-scientific expert evidence (internal quotation marks omitted)); CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, EVIDENCE § 7.7, at 722 (3d ed. 2009) (arguing that applying *Daubert* factors to non-scientific evidence loses "any sense of rigor"); David E. Bernstein, *Expert Witnesses, Adversarial Bias, and the (Partial) Failure of the* Daubert *Revolution*, 93 IOWA L. REV. 451, 480–88 (2008). *Daubert* was initially restricted to scientific evidence, 509 U.S. at 590 n.8, but *Kumho Tire* made clear that the *Daubert* principles applied to all expert evidence, whether scientific or not. *See Kumho Tire*, 526 U.S. at 141.

8 *See* Lisa Heinzerling, *Doubting* Daubert, 14 J.L. & POL'Y 65, 78 (2006); Elizabeth M. Schneider, *The Changing Shape of Federal Civil Pretrial Practice: The Disparate Impact on Civil Rights and Employment Discrimination Cases*, 158 U. PA. L. REV. 517, 551–55 (2010).

9 *See* Richard D. Friedman, *Squeezing* Daubert *Out of the Picture*, 33 SETON HALL L. REV. 1047, 1047–70 (2003); Frederick Schauer, *Can Bad Science Be Good Evidence? Neuroscience,*

These criticisms are not without force, but the difficulties with *Daubert* go deeper. The real problem is not so much about *Daubert* and the subsequent cases in its line of authority[10] as it is about the very way in which evidence law treats expertise generally. Using experts is, of course, invaluable in numerous litigation settings. But as the price of allowing experts to testify about matters of which they have neither first-hand nor case-specific factual knowledge,[11] evidence law requires expert evidence to satisfy a higher threshold for admissibility than that which ordinarily applies to non-expert evidence. In other words, it is the law of expert evidence generally, and not merely *Daubert*'s gloss on it, that excludes a great deal of otherwise relevant evidence.

Excluding relevant evidence might be thought something of a concern,[12] but of course that is what much, and perhaps even most, of evidence law does.[13] Sometimes the exclusion of relevant evidence is a function of a goal extrinsic to the truth-finding process (as with most privileges, for example).[14] More often, however, relevant evidence is excluded because of the fear that certain kinds of admittedly relevant evidence will be overvalued by the trier of fact.[15] It is this fear of overvaluation that grounds, for example,

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Lie Detection, and Beyond, 95 CORNELL L. REV. 1191, 1191–1219 (2010); Note, *Admitting Doubt: A New Standard for Scientific Evidence*, 123 HARV. L. REV. 2021, 2021–42 (2010).

10 Most important is *Kumho Tire*, 526 U.S. at 145 (holding *Daubert*'s general concern with reliability is applicable to all expert evidence, and not just the evidence that might be considered scientific). Also important in the post-*Daubert* history is *General Electric Co. v. Joiner*, 522 U.S. 136, 144 (1997) (holding that the admission of scientific evidence required a determination of reliability of the particular expert's particular testimony).

11 On the requirement that a lay witness have personal knowledge of the facts about which she is testifying, see FED. R. EVID. 602.

12 As it is to those who sympathize with the so-called free proof tradition. *See* 1 JEREMY BENTHAM, RATIONALE OF JUDICIAL EVIDENCE 4 (photo. reprint 1995) (John S. Mill ed., 1827) (claiming that "almost every rule that has ever been laid down on the subject of evidence . . . is repugnant to the ends of justice"); Mirjan Damaška, *Free Proof and Its Detractors*, 43 AM. J. COMP. L. 343, 343–57 (1995).

13 *See* ALEX STEIN, FOUNDATIONS OF EVIDENCE LAW 25–30 (2005); A. Leo Levin & Harold K. Cohen, *The Exclusionary Rules in Nonjury Criminal Cases*, 119 U. PA. L. REV. 905, 915–16, 926 (1971); Frederick Schauer, *On the Supposed Jury-Dependence of Evidence Law*, 155 U. PA. L. REV. 165, 176–79, 196–97 (2006).

14 *See* Schauer, *supra* note 13, at 167. The same kind of exclusion for non-epistemic reasons explains those rules designed to create incentives for beneficial out-of-court conduct, as with the exclusion of evidence of subsequent remedial measures. *See* FED. R. EVID. 407; Werner v. Upjohn Co., 628 F.2d 848, 857 (4th Cir. 1980) (explaining that people would "be less likely to take subsequent remedial measures if their repairs or improvements would be used against them in a lawsuit arising out of a prior accident").

15 *See* MUELLER & KIRKPATRICK, *supra* note 7, § 1.1, at 2; Henry M. Hart, Jr., & John T. McNaughton, *Some Aspects of Evidence and Inference in the Law*, *in* EVIDENCE AND INFERENCE 48, 56 (Daniel Lerner ed., 1959).

the exclusion of hearsay[16] and much of the bar on the use of character evidence.[17]

The same fear of overvaluation also explains much of the exclusion of relevant expert evidence.[18] The risk that juries will overvalue the evidence of experts has long been thought so likely that a standard for admissibility higher than mere relevance emerged as the barrier to jury overvaluation of expert testimony.[19] But the claim that juries (or even judges) will overvalue the testimony of experts is an empirical one, and may well be unsound.[20] Moreover, the contention that juries will overvalue expert evidence is based on an implicit comparison with the presumed accuracy, or at least lack of overvaluation, of more direct evidence, such as the testimony of an eyewitness observer. But that presumption may also be empirically unsound.[21] And if the empirical assumptions about overvaluation of expert opinion and accuracy of direct factual testimony are both mistaken, then the traditional restrictions on expert evidence may be mistaken as well.

Thus, the problem with expert evidence is not the inappropriateness of the *Daubert* approach. The narrow focus on *Daubert* is misplaced. The real problem is with the more deeply entrenched view that expert evidence should be excluded under circumstances in which analogous non-expert evidence would be admitted. *Daubert* embodies the distinction between expert and non-expert evidence, but it is that very distinction, and not just *Daubert*, that is the problem. *Daubert* has indeed transformed modern evidence law, but perhaps it has awakened us to the need for a more profound transformation, one in which the very foundations of treating expert testimony differently are undercut. This is a larger claim than that *Daubert* itself is a problem, and it is this larger claim we seek to advance here.[22]

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16 *See* Edmund M. Morgan, *The Jury and the Exclusionary Rules of Evidence*, 4 U. CHI. L. REV. 247, 255 (1937). There are other accounts of the exclusion of hearsay, including the view that hearsay is excluded because of concerns about confrontation with adverse witnesses. *See* Richard D. Friedman, *Confrontation: The Search for Basic Principles*, 86 GEO. L.J. 1011, 1012–26 (1998). Others view the exclusion of hearsay as creating incentives for parties to bring the best available evidence to court. *See* Dale A. Nance, *The Best Evidence Principle*, 73 IOWA L. REV. 227, 267, 274 (1988). But the fear of jury overvaluation remains dominant.

17 *See* Edward J. Imwinkelried, *Reshaping the "Grotesque" Doctrine of Character Evidence: The Reform Implications of the Most Recent Psychological Research*, 36 SW. U. L. REV. 741 (2008).

18 *See infra* Section II.

19 For a sense of just how long the special treatment of expert evidence has been based on the fear of disproportionate (compared to non-expert evidence) over-valuation of expert testimony, see 5 THE ENCYCLOPEDIA OF EVIDENCE 526–29 (Edgar W. Camp & John F. Crowe eds., 1905). *See also* Haviland v. Kansas City, P. & G. R. Co., 72 S.W. 515, 517 (Mo. 1902) (upholding exclusion of expert testimony because of fear of "gullibility of the jury").

20 *See infra* Section III.A.1.

21 *See infra* Section III.A.2.

22 The argument has been offered earlier, albeit in milder form. *See* CHARLES T. MCCORMICK, HANDBOOK OF THE LAW OF EVIDENCE § 170, at 363–64 (1954). And it has surfaced at various times since. *See* Coppolino v. State, 223 So. 2d 68, 70 (Fla. Dist. Ct. App. 1968); Reed v. State, 391 A.2d 364, 367–68 (Md. 1978); State v. Peters, 534 N.W.2d 867,

I. The Basic Issue—By Example

In a recent article, one of the country's most respected trial judges, Judge Jed Rakoff of the United States District Court for the Southern District of New York, offered a crisp example of the view we challenge here.[23] Writing in the *Seton Hall Law Review* about law and science generally, as well as about contemporary controversies over the admissibility of lie-detection evidence,[24] Judge Rakoff observed that an error rate of thirteen percent, which

872 (Wis. Ct. App. 1995); Ronald J. Allen & Richard B. Kuhns, An Analytical Approach to Evidence 735–36 (1989); 1 Paul C. Giannelli & Edward J. Imwinkelried, Scientific Evidence § 1–6, at 30–33 (3d ed. 1999); Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence:* Frye v. United States*, a Half-Century Later*, 80 Colum. L. Rev. 1197, 1232–43 (1980); John W. Osborne, *Judicial/Technical Assessment of Novel Scientific Evidence*, 1990 U. Ill. L. Rev. 497, 512; John William Strong, *Questions Affecting the Admissibility of Scientific Evidence*, 1970 U. Ill. L.F. 1, 22. But because *Daubert* made clear (or at least as clear as *Daubert* made anything) that Rule 702 imposed requirements going beyond relevance, suggestions that expert testimony should be evaluated according to a relevance standard have faded into the background. *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 590–92 (1993). More importantly, our concern here is not, as it was for McCormick and others, with whether relevance is the appropriate conceptual repository within which to weigh the probative value of expert testimony against its assumed prejudicial effect. Rather, we argue that it is the treatment of expert testimony as deserving special skepticism that is the problem. What makes McCormick's version milder is that he and his successors appeared to assume that special skepticism was warranted, with the only question being whether the special skepticism should be located within a relevancy analysis or instead within a distinct rule and separate inquiry. *See* McCormick, *supra*, § 170, at 363–64. Our argument here is against the very assumption of special skepticism, making our claim different from and less mild than McCormick's.

23 Jed S. Rakoff, *Science and the Law: Uncomfortable Bedfellows*, 38 Seton Hall L. Rev. 1379 (2008).

24 The debates about the use of lie-detection evidence have become more salient in light of recent advances in neuroscience and the possibility of neuroscience-based lie detection. *See* United States v. Semrau, 693 F.3d 510, 517 (6th Cir. 2012); Wilson v. Corestaff Servs. L.P., 900 N.Y.S.2d 639, 639 (N.Y. Sup. Ct. 2010); Martha J. Farah & Cayce J. Hook, *The Seductive Allure of "Seductive Allure,"* 8 Persp. on Psychol. Sci. 88, 88–89 (2013); Henry T. Greely & Judy Iles, *Neuroscience-Based Lie Detection: The Urgent Need for Regulation*, 33 Am. J.L. & Med. 377, 378 (2007); J.R.H. Law, *Cherry-Picking Memories: Why Neuroimaging-Based Lie Detection Requires a New Framework for the Admissibility of Scientific Evidence under FRE 702 and* Daubert, 14 Yale J.L. & Tech. 1, 3–5 (2011); Joëlle Anne Moreno, *The Future of Neuroimaged Lie Detection and the Law*, 42 Akron L. Rev. 717, 722 (2009); Michael S. Pardo, *Neuroscience Evidence, Legal Culture, and Criminal Procedure*, 33 Am. J. Crim. L. 301, 304–06 (2006); Frederick Schauer, *Neuroscience, Lie-Detection, and the Law: Contrary to the Prevailing View, the Suitability of Brain-Based Lie-Detection for Courtroom or Forensic Use Should Be Determined According to Legal and Not Scientific Standards*, 14 Trends in Cognitive Sci. 101, 101–02 (2010); Schauer, *supra* note 13, at 176; Leo Kittay, Note, *Admissibility of fMRI Lie Detection: The Cultural Bias Against "Mind Reading" Devices*, 72 Brook. L. Rev. 1351, 1376–84 (2007).

is on the high end of the studies examining polygraph reliability,[25] would likely be insufficiently reliable to justify admissibility.[26]

Judge Rakoff's conclusion is unimpeachable under current doctrine. *Daubert* plainly imposes an additional hurdle for the admissibility of expert evidence which is more demanding than the standard applied to non-experts. Whether embodied in *Daubert*'s focus on scientific validity or in acceptance within the relevant professional community under the partially superseded *Frye* test,[27] the basic idea is that expert and scientific evidence will be admitted only if there is assurance that the methods used and conclusions drawn have met a stringent standard of reliability.[28] Indeed, the fact that another highly respected federal judge initially rejected even fingerprint evidence in the wake of *Daubert*[29] demonstrates that the gates that *Daubert*'s gatekeepers must guard are not easily breached.

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25 *See* Law, *supra* note 24, at 23–26 (noting many of the studies). For more recent reviews, see Nobuhito Abe, *How the Brain Shapes Deception: An Integrated Review of the Literature*, 17 NEUROSCIENTIST 560, 560–70 (2011); Paul Root Wolpe et al., *Emerging Neurotechnologies for Lie-Detection: Promises and Perils*, AM. J. BIOETHICS, OCT. 2010, at 40, 40–47; Dingcheng Wu et al., *Neural Correlates of Evaluations of Lying and Truth-Telling in Different Social Contexts*, 1389 BRAIN RES. 115, 115–23 (2011).

26 *See* Rakoff, *supra* note 23, at 1382–83; *infra* text accompanying notes 30–32. Although there is an important difference between a non-obligatory factor and a requirement, the Court, in *Daubert*, asserted that, in the case of scientific evidence, "the court ordinarily should consider the known or potential rate of error." *Daubert*, 509 U.S. at 594. This phrase is ambiguous as between whether a court should just consider whether there is a known error rate or consider what the error rate actually is, but *Kumho Tire* strongly suggests that reliability is the touchstone and that what the error rate actually is, rather than merely whether there is a known error rate, is an important component of a reliability determination. *See* Kumho Tire Co. v. Carmichael, 526 U.S. 137, 151 (1999); David W. Barnes, *General Acceptance Versus Scientific Soundness: Mad Scientists in the Courtroom*, 31 FLA. ST. U. L. REV. 303, 317–23 (2004); Dale A. Nance, *Reliability and the Admissibility of Experts*, 34 SETON HALL L. REV. 191, 200 (2003). And thus courts applying *Daubert* to scientific evidence have commonly taken the size of the error rate as a criterion for admissibility. *See, e.g.*, Cascade Yarns, Inc. v. Knitting Fever, Inc., No. C10–861RSM, 2012 WL 5194085, at *7 (W.D. Wash. Oct. 18. 2012) (excluding expert evidence because error rate was too high); Acker v. Burlington N. & Santa Fe Ry., 347 F. Supp. 2d 1025, 1032 (D. Kan. 2004) (admitting evidence); Pharmacia Corp. v. Alcon Labs., Inc., 201 F. Supp. 2d 335, 360 (D.N.J. 2002) (excluding evidence).

27 *See* Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923). *Frye* remains the prevailing standard in some states. *See* Hedger, *supra* note 5, at 109. Its focus on acceptance within the relevant professional community persists in federal courts as one of the multiple *Daubert* factors. *See Daubert*, 509 U.S. at 594.

28 *See supra* notes 3, 26; *see also* Zaremba v. Gen. Motors Corp., 360 F.3d 355, 360 (2d Cir. 2004) (describing *Daubert* standards as "demanding"); Metro Pony, LLC v. City of Metropolis, No. 11–cv–144–JPG, 2012 WL 1389656, at *9 (S.D. Ill. Apr. 20, 2012) (same).

29 *See* United States v. Llera Plaza, 179 F. Supp. 2d 492, (E.D. Pa. 2001), *vacated*, 188 F. Supp. 2d 549, 576 (E.D. Pa. 2002) (Pollak, J.). The point is reinforced by the fact that Judge Pollak's decision even preceded the prominent 2009 National Academy of Sciences report critiquing much of commonly used forensic evidence. *See* COMM. ON IDENTIFYING THE NEEDS OF THE FORENSIC SCIS. CMTY., NAT'L RESEARCH COUNCIL, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES (2009).

Technically, *Daubert* does not mandate a specific level of reliability for expert evidence to be admitted. The decision merely includes the existence of a known error rate as among the factors weighing in favor of admissibility,[30] and the absence of a known error rate as, conversely, inclining against. But nothing in *Daubert* requires that the error rate be below a certain level to make the evidence admissible. In theory, therefore, a known error rate of thirteen percent (or even higher) need not be fatal to admission. Nevertheless, the focus on a known error rate reinforces *Daubert*'s concern with substantial reliability for scientific evidence or, now, any expert testimony[31] to be admitted, and subsequent cases have made clear that the size of the error rate is highly relevant to reliability and thus admissibility.[32]

Judge Rakoff's conclusion is entirely consistent with both the holding of *Daubert* and the entire post-*Daubert* regime, but it is nevertheless curious. Consider the basic relevance standard, a standard which exists in canonical form for the federal courts as Rule 401 of the Federal Rules of Evidence. Under Rule 401, relevant evidence is evidence having "any tendency to make a [material] fact more or less probable than it would be without the evidence."[33] And Rule 402 goes on to say that "[r]elevant evidence is admissible"[34] except as otherwise excluded by other rules, by statute, or by the Constitution.[35]

So consider the application of this basic relevance standard to Judge Rakoff's example and the statistics it incorporates. If some piece of evidence supports proposition *P*,[36] and if its support for *P* is eighty-seven percent reliable, then *P* is certainly more probable with this evidence than without. Eighty-seven percent reliability is far from perfect, but is more than enough to satisfy the minimal relevance standard embodied in Rules 401 and 402. That standard would not be satisfied were the results of a polygraph no better than random, as with, for example, the putative admissibility of astrological

30 *See Daubert*, 509 U.S. at 594.

31 *See Kumho Tire*, 526 U.S. at 145 (extending *Daubert* to even non-scientific expert evidence); *see also* FED. R. EVID. 702 (setting forth the criteria of reliability required for the admission of any expert testimony).

32 *See supra* note 29.

33 FED. R. EVID. 401.

34 FED. R. EVID. 402.

35 Rule 403 does allow the exclusion of relevant evidence if its unfair prejudicial effect will substantially outweigh its probative value, and overvaluation is one (but only one) form of unfair prejudicial effect. *See* United States v. Muscato, 534 F. Supp. 969, 979 (E.D.N.Y. 1982); Ten Broeck Dupont, Inc. v. Brooks, 283 S.W.3d 705, 715 (Ky. 2009); 1 GRAHAM, *supra* note 3, § 401:7, at 386–88. But even apart from the question whether the likelihood of overvaluation has a tendency to be, as it were, overvalued, *see* Richard D. Friedman, *Minimizing the Jury Over-Valuation Concern*, 2003 MICH. ST. L. REV. 967, 969–75, the question whether all that *Daubert* does could be done through Rule 403 is, although doctrinally interesting, not our concern here. *See supra* note 22. If, as we argue, there is scant reason for imposing special barriers to the admissibility of expert evidence, it would be just as mistaken to insert those barriers under the unfair prejudice analysis of Rule 403 as it is to apply them under *Daubert* and Rule 702.

36 Including the proposition that some witness was telling the truth.

data or phrenological experts to provide evidence about a witness's veracity or a defendant's character for, say, violence. But even polygraphs are better than astrology and phrenology, although opinion differs on just how much better.[37] Still, an item of evidence that is eighty-seven percent likely to provide support for a material conclusion would comfortably clear the "more probable than without" threshold of minimal relevance. The curious feature of Judge Rakoff's doctrinally impeccable conclusion, therefore, is that evidence that comes from an expert or is classed as "scientific" will not be admitted even if non-expert and non-scientific evidence with no greater reliability, and often with less, would be admitted without question.

Suppose, for example, that a witness with poor eyesight identifies the defendant, who is of a different race from the witness, as the person he observed running out of the liquor store on a dark and rainy night at a distance of two hundred feet. It is reasonable to suspect that this identification is less, probably far less, than eighty-seven percent reliable. Yet none of the grounds for doubting the reliability of the evidence would necessitate exclusion. The well known deficiencies of cross-race identification,[38] coupled with all the reasons to doubt witness perception in general and the witness's perception on this occasion,[39] would go to the weight of the evidence, but not its admissibility.

This last example is (more or less) imaginary, but real examples of the admissibility of substantially unreliable non-expert and nonscientific evidence pervade the law of evidence. Many of the recent DNA-based exonera-

37 For descriptions and comparisons of various methods and studies, see COMM. TO REVIEW THE SCIENTIFIC EVIDENCE ON THE POLYGRAPH, NAT'L RESEARCH COUNCIL, THE POLYGRAPH AND LIE DETECTION (2003); KERRY SEGRAVE, LIE DETECTORS (2004); OFFICE OF TECH. ASSESSMENT, SCIENTIFIC VALIDITY OF POLYGRAPH TESTING (1983), *available at* http://www.fas.org/sgp/othergov/polygraph/ota. The American Polygraph Association's own figures put accuracy in the 85% to 87% range. *See Polygraph Validity Research*, AM. POLYGRAPH ASS'N, www.polygraph.org/section/resources/polygraph-validity-research (last visited Sept. 25, 2013).

38 *See* Tara Anthony et al., *Cross-Racial Facial Identification: A Social Cognitive Integration*, 18 PERSONALITY & SOC. PSYCHOL. BULL. 296, 296–300 (1992); Stephanie J. Platz & Harmon M. Hosch, *Cross-Racial/Ethnic Eyewitness Identification: A Field Study*, 18 J. APP. SOC. PSYCHOL. 972, 974 (1988); Steven M. Smith et al., *Postdictors of Eyewitness Errors: Can False Identifications Be Diagnosed in the Cross-Race Situation?*, 7 PSYCHOL., PUB. POL'Y, & L. 153, 153–67 (2001).

39 *See* BRIAN L. CUTLER & STEVEN D. PENROD, MISTAKEN IDENTIFICATION 7–15 (1995); ELIZABETH F. LOFTUS, EYEWITNESS TESTIMONY 20–51 (1996); Robert Blonstein & Edward Geiselman, *Effects of Witnessing Conditions and Expert Witness Testimony on Credibility of an Eyewitness*, 8 AM. J. FORENSIC PSYCHOL. 11, 11–18 (1990); Julian Boon & Graham Davies, *Extra-Stimulus Influences on Eyewitness Perception and Recall: Hastorf and Cantril Revisited*, 1 LEGAL & CRIMINOLOGICAL PSYCHOL. 155, 156–58, 162–63 (1996); Saul M. Kassin et al., *On the "General Acceptance" of Eyewitness Testimony Research*, 56 AM. PSYCHOLOGIST 405, 413–15 (2001); Gary L. Wells, & Amy L. Bradfield, *Distortions in Eyewitness Recollections: Can the Postidentification-Feedback Be Moderated?*, 10 PSYCHOL. SCI. 138, 138–39, 142 (1999); Gary L. Wells, *What Do We Know About Eyewitness Identification?*, 48 AM. PSYCHOLOGIST 553, 553–54, 567–68 (1993).

tions of people convicted of crimes[40] have reinforced what psychologists have known for decades—eyewitness testimony is not nearly as reliable as most lawyers and laypeople believe.[41] Sometimes because of defects in perception and sometimes on account of flaws in memory, eyewitness testimony, the classic form of direct evidence, is often mistaken.[42] Indeed, numerous studies show that the accuracy rates of commonly admitted eyewitness identifications and other forms of eyewitness testimony may fall substantially below the accuracy rates of commonly excluded (under *Daubert*) scientific and expert evidence.[43] And although courts are increasingly permitting experts to testify about the inaccuracy of eyewitness and other direct evidence,[44] and although there are now numerous avenues for post-conviction relief focus on correcting the errors of erroneous convictions based on mistaken identifications or other forms of mistaken direct testimony,[45] it has yet to be suggested that

40 *See* BRANDON L. GARRETT, CONVICTING THE INNOCENT 5–6 (2011); Sophia S. Chang, Note, *Protecting the Innocent: Post-Conviction DNA Exoneration*, 36 HASTINGS CONST. L.Q. 285, 287 (2009).

41 *See* LOFTUS, *supra* note 39, at 20–51; Tanja Rapus Benton et al., *Eyewitness Memory Is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts*, 20 APPLIED COGNITIVE PSYCHOL. 115, 116–17 (2006); Gary L. Wells & Eric P. Seelau, *Eyewitness Identification: Psychological Research and Legal Policy on Lineups*, 1 PSYCHOL. PUB. POL'Y & L. 765, 787 (1995). Indeed, this conclusion is hardly breaking news for psychologists. *See* HUGO MÜNSTERBERG, ON THE WITNESS STAND 39, 47, 56–58, 61, 63–65 (1908). Nevertheless, the law, and the law of evidence in particular, has often resisted it. *See, e.g.*, John H. Wigmore, *Professor Muensterberg and the Psychology of Testimony: Being a Report of the Case of* Cokestone v. Munsterberg, 3 ILL. L. REV. 399, 399–434 (1909) (responding satirically to Münsterberg's treatise).

42 The research is vast. *See* Gary L. Wells et al., *Eyewitness Evidence: Improving Its Probative Value*, 7 PSYCHOL. SCI. PUB. INT. 45, 45–69 (2006) (offering a good review of the topic); *supra* notes 38, 41. For a recent short summary, see Neil Brewer & Gary L. Wells, *Eyewitness Identification*, 20 CURRENT DIRECTIONS PSYCHOL. SCI. 24, 24–26 (2011). Other representative contributions include Kenneth A. Deffenbacher et al., *A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory*, 28 LAW & HUM. BEHAV. 687, 687–704 (2004); Jonathan M. Fawcett et al., *Of Guns and Geese: A Meta-Analytic Review of the 'Weapon Focus' Literature*, 19 PSYCHOL. CRIME & L. 35, 35–62 (2013); Charles A. Morgan III et al., *Accuracy of Eyewitness Memory for Persons Encountered During Exposure to Highly Intense Stress*, 27 INT'L J.L. & PSYCHIATRY 265, 265–77 (2004).

43 A valuable survey of the psychological research on eyewitness identification and testimony, and its implications for criminal trial practice, is in *Young v. Conway*, 698 F.2d 69, 80 (2d Cir. 2012).

44 *See, e.g.*, United States v. Jones, 762 F. Supp. 2d 270, 275 (D. Mass 2010); State v. Guilbert, 49 A.3d 705, 762 (Conn. 2012). *See generally* Henry F. Fradella, *Why Judges Should Admit Expert Testimony on the Unreliability of Eyewitness Testimony*, 2 FED. CTS. L. REV. 1 (2007) (arguing that all judges should allow expert testimony regarding weaknesses of eyewitness identifications); Cindy J. O'Hagan, *When Seeing is Not Believing: The Case for Eyewitness Expert Testimony*, 81 GEO. L.J. 741 (1993) (same). Indeed, a recent decision of the New Jersey Supreme Court goes a step further in requiring, when relevant in criminal cases, a jury instruction on the potential problems with eyewitness identification. *See* State v. Henderson, 27 A.3d 872, 925 (N.J. 2011).

45 *See* GARRETT, *supra* note 40, at 224–31, 239; Peter Neufeld, *Legal and Ethical Implications of Post-Conviction DNA Exonerations*, 35 NEW ENG. L. REV. 639, 641, 645 (2001).

the typical eyewitness identification should be excluded at trial.[46] However defective such identifications may turn out to be, it is difficult in the typical case to argue that their admission would not render some proposition—the defendant's guilt, for example—more likely with the testimony than without, which is exactly what Rule 401 requires—and no more.

Thus the question is clearly presented. Why is commonly (even if not usually) defective direct evidence subject to admission under a lower threshold for admissibility than expert and scientific evidence? Both forms of evidence have flaws, and both have value, but the higher threshold for scientific and expert evidence presupposes that it is even more flawed than direct evidence, or more likely to be misused, or more beset with other problems. But what is the basis for this comparative distrust of expert and scientific evidence, and is that distrust justified?

II. THE RATIONALES

The seeming anomaly of Judge Rakoff's conclusion that expert evidence must clear an additional or higher hurdle has traditionally been justified on three grounds. One is that expert witnesses are permitted to offer opinions when lay witnesses would be restricted to bare facts.[47] The second is that experts are permitted to rely on hearsay and other inadmissible information, especially in the form of collective or published opinions of other experts, in ways that lay witnesses may not.[48] And although the greater testimonial leeway afforded to experts might in theory justify placing stricter limits on their testimony,[49] the third and, in fact, principal justification for the differential treatment has long been the belief that expert testimony has such a persua-

46 Oregon does require exclusion where there has been impermissible police suggestion to a witness. *See* State v. Lawson, 291 P.3d 673, 698 (Or. 2012).

47 *See* Hopt v. Utah, 120 U.S. 430, 438 (1887); Ferguson v. Hubbell, 97 N.Y. 507, 519 (1884); Whitfield v. Whitfield, 40 Miss. 352, 358 (Miss. 1866); Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 50 (1901).

48 *See* FED. R. EVID. 703; United States v. Floyd, 281 F.3d 1346, 1349 (11th Cir. 2002); McLaughlin v. Fisher Eng'g, 834 A.2d 258, 263 (N.H. 2003); *see also* Paul R. Rice, *Inadmissible Evidence as a Basis for Expert Testimony: A Response to Professor Carlson*, 40 VAND. L. REV. 583, 583 (1987) (recognizing that expert witnesses can present what would normally be considered inadmissible evidence); Ross Andrew Oliver, Note, *Testimonial Hearsay as the Basis for Expert Opinion: The Intersection of the Confrontation Clause and Federal Rule of Evidence 703 After* Crawford v. Washington, 55 HASTINGS L.J. 1539, 1540 (2004) (noting that the Federal Rules of Evidence allow expert witnesses to base opinions on hearsay or other inadmissible evidence).

49 *See* Daubert v. Merrell Dow Pharm. Inc., 509 U.S. 579, 592 (1993). The testimonial leeway granted to experts was greater when lay witnesses were prohibited from offering opinions. *See* Burton v. Severance, 29 P. 200, 201 (Or. 1892). But now that lay witnesses are routinely permitted to offer the kinds of opinions (which might be better described as inferences, although the Advisory Committee prefers "opinions") that lay people would ordinarily draw, the gap between what experts and lay witnesses can say has narrowed considerably. *See* FED. R. EVID. 701. Obviously there are differences in terms of the content of the opinions, but it is no longer correct to think that experts are permitted to draw inferences or offer opinions while lay people may only state facts.

sive effect on jurors (and, perhaps, judges as well),[50] that it needs to be restricted.[51] The image is of the expert who looks like a professor or scientist, festooned with degrees and fancy titles, using incomprehensible technical jargon to convince a jury to rely on her conclusions regardless of their correctness or the soundness of the methods by which they were reached.[52]

Of course there really are experts, and their expertise has long been essential, both in court and out. And as legal questions become ever more technical, whether because they involve difficult scientific questions or complex financial transactions or something else, expertise is becoming more rather than less necessary.[53] Indeed, the value of experts is so obvious that historically the formal test for admissibility has been quite low. *Daubert* aside, the traditional standard for admissibility of expert testimony is simply that the testimony will assist the trier of fact.[54] And although it is difficult to understand the notion of assisting the trier of fact in the same probabilistic or Bayesian language we associate with Rule 401[55] or other versions of the idea of logical relevance, the traditional formal standard seems no more stringent than the relevance standard, and may be even less.[56]

Formal standards notwithstanding, in practice, both state and federal courts have imposed increasingly higher barriers to the introduction of expert testimony. Traditionally these barriers were erected even in the

50 On judges being subject to many of the same failings in assessing factual evidence as juries, see Chris Guthrie et al., *Blinking on the Bench: How Judges Decide Cases*, 93 CORNELL L. REV. 1, 13–33 (2007); Paul H. Robinson & Barbara A. Spellman, *Sentencing Decisions: Matching the Decisionmaker to the Decision Nature*, 105 COLUM. L. REV. 1124, 1138–39 (2005); Barbara A. Spellman, *On the Supposed Expertise of Judges in Evaluating Evidence*, 156 U. PA. L. REV. 1, 6–7 (2007); Andrew J. Wistrich et al., *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251, 1259 (2005).

51 *See* Allison v. McGhan Med. Corp., 184 F.3d 1300, 1310 (11th Cir. 1999) (describing *Daubert* as based on the Supreme Court's fear that jurors will be "awestruck by the expert's mystique").

52 On the fear of jury overvaluation of expert and scientific evidence, see United States v. Call, 129 F.3d 1402, 1405 (10th Cir. 1997); United States v. Ganadonegro, 805 F. Supp. 2d 1188, 1199, 1203 (D.N.M. 2011); United States v. Sessa, 806 F. Supp. 1063, 1066 (E.D.N.Y. 1992); State v. Moran, 728 P.2d 248, 250–51 (Ariz. 1986); Coble v. State, 330 S.W.3d 253, 273 (Tex. Crim. App. 2010).

53 *See* Jed Rakoff, *Are Federal Judges Competent? Dilettantes in an Age of Economic Expertise*, 17 FORDHAM. J. CORP. & FIN. L. 4, 4–6 (2012).

54 *See* FED. R. EVID. 702.

55 Thus there has been confusion about the relationship of the issue of reliability to the issue of relevance under Rule 401. Some courts see reliability as part of a relevance determination under (state) Rule 401. *See, e.g.*, State v. Fleming, 698 A.2d 503, 507 (Me. 1997). But that view seems at odds with the language and import of 401, as opposed to the better view that the 401 and 702 requirements are overlapping. *See* Lithuanian Commerce Corp. v. Sara Lee Hosiery, 179 F.R.D. 450, 459 (D.N.J. 1998). The still better, and we think correct, view is that a reliability determination is now mandatory under Rule 702 and no part of Rule 401, a view supported by even the pre-*Daubert* decision in *Reed v. State*, 391 A.2d 364, 411 (Md. 1978).

56 *See* MUELLER & KIRKPATRICK, *supra* note 7, § 7.6, at 709–12 (concluding that the helpfulness standard by itself excludes virtually nothing).

absence of distinct rules for expert testimony,[57] with trial judges imposing standards within the basic relevancy framework that were stricter or different when the relevancy question arose with respect to expert testimony.[58] The gradual increase in and differentiation of the admissibility standards for expert testimony was supported by the deference that trial evidentiary rulings have long received,[59] but still there were no specific rules focused exclusively on the evidence of experts. Then came *Frye*,[60] which imposed the distinct added layer of a requirement of general acceptance within the relevant field on top of the traditional requirement of relevance.[61] And it is this distinct criterion—a requirement of something in addition to relevance—that marks the beginning of the modern era. *Daubert* subsequently solidified this shift towards a distinct additional requirement for expert evidence by not only explicitly rejecting collapsing the question of expert admissibility into the relevancy determination,[62] but also by mandating standards that emphasized the difference between determinations of relevancy and of expert admissibility.[63]

That the standards for expert admissibility are becoming progressively more demanding should come as no surprise. The quantity of mass tort cases is accelerating,[64] as are complaints that juries in those cases are too easily persuaded, especially on the question of causation, by scientists and scientific authority of dubious reliability.[65] *Daubert*'s heightened standards reflect this concern with jury overvaluation of expert testimony, especially in civil cases, but it is a concern, as we have seen, that has been around for more

57 *See* 5 THE ENCYCLOPEDIA OF EVIDENCE, *supra* note 19, at 517; Mason Ladd, *Expert Testimony*, 5 VAND. L. REV. 414, 414 (1952).

58 *See, e.g.*, Cote v. Michou, 113 A. 210, 211 (N.H. 1921) (noting that expert testimony is "especially potent"); Bradley v. Palmer, 61 N.E. 856, 881 (Ill. 1901) (expressing concern that statements by experts would likely "influence the jury" to consider inadmissible evidence); Capitula v. N.Y. Cent. R. Co., 192 N.Y.S. 745, 749 (N.Y. App. Div. 1922) (Hinman, J., concurring in part) (arguing that expert testimony can give a "false guide").

59 *See* David P. Leonard, *Appellate Review of Evidentiary Rulings*, 70 N.C. L. REV. 1155, 1188, 1228 (1992).

60 Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

61 *See id.* at 1014.

62 *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 587–88 (1993).

63 The effect of *Daubert* is highlighted in the case on remand, where Judge Kozinski noted that judges must deal with a "far more complex and daunting task in a post-*Daubert* world." Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1315 (9th Cir. 1995).

64 *See* Ortiz v. Fibreboard Corp., 527 U.S. 815, 821 (1999) (noting the "elephantine mass of asbestos cases"); Gen. Elec. Co. v. Joiner, 522 U.S. 136, 149 (1997) (Breyer, J., concurring) (noting an increase in cases presenting scientific issues, e.g., cases determining the liability of carcinogen producing companies).

65 *See* SmithKline Beecham Corp. v. Apotex Corp., 247 F. Supp. 2d 1011, 1042 (N.D. Ill. 2003) (Posner, J., sitting by designation) ("The primary purpose of the *Daubert* filter is to protect juries from being bamboozled by technical evidence of dubious merit . . . ."); HUBER, *supra* note 4, at 16; Victor E. Schwartz & Cary Silverman, *The Draining of* Daubert *and the Recidivism of Junk Science in Federal and State Courts*, 35 HOFSTRA L. REV. 217, 220 (2006).

than a century. The question that lies at the core of the worry about overvaluation, though, and thus at the core of the special treatment of expert evidence, is whether the concern with overvaluation is empirically justified.

III. Two Responses

Assessing the longstanding belief in jury overvaluation of expert evidence is a task that is both empirical and conceptual. The empirical task requires that we rely on something more than tradition, and instead examine both the evidence for such overvaluation and also the evidence for the lack of overvaluation for non-expert—or so-called direct—evidence. We examine these two aspects of the empirical inquiry first, and then turn to the conceptual issues.

A. The Empirical Response

1. On Overvaluing the Overvaluation of Expert Testimony

Ever since experts have been testifying, courts and commentators have worried that judges and jurors, themselves lacking the relevant expertise, will be unable to distinguish genuine expertise from the external trappings of it.[66] It seems rational for novices to defer to experts, but precisely because novices are novices it is difficult for them to know who the experts are, and to determine whether they have the requisite degree of expertise to justify deference.[67] It is not that expertise cannot be valuable. The concern is that non-expert triers of fact will consistently overvalue expert testimony beyond its intrinsic epistemic worth.[68]

The problem with the longstanding and pervasive belief in jury overvaluation of expert testimony is that it may not be supported by the evidence.[69] Initially, although it is true that people are often influenced by the trappings of authority, these trappings can sometimes constitute rational grounds for non-experts to identify experts and evaluate their judgments. Wearing a white lab coat or a tweed jacket with elbow patches might in most cases say

66 *See* Ronald J. Allen & Esfand Nafisi, Daubert *and Its Discontents*, 76 Brook. L. Rev. 131, 132 (2010); Scott Brewer, *Scientific Expert Testimony and Intellectual Due Process*, 107 Yale L.J. 1535, 1538–39 (1998); Samuel R. Gross, *Expert Evidence*, 1991 Wis. L. Rev. 1113, 1182. The problem of non-experts being unable to identify and evaluate expertise is by no means restricted to law. Any attempt to gain knowledge from experts is beset by the dilemma of attempting, without the benefit of expertise, to figure out who the experts are. For a philosophical take on the issue, see Frederick F. Schmitt, *Justification, Sociality, and Autonomy*, 73 Synthese 43, 43–74 (1987).

67 *See* Charles Arthur Willard, *Authority*, 12 Informal Logic 11, 18 (1990) (rationalizing the common need of lay people to find and depend on authority); sources cited *supra* note 66.

68 *See supra* notes 51–52, 58 and accompanying text.

69 For useful overviews of the research, which is described in more detail below, see Sanja Kutnjak Ivkovic & Valerie P. Hans, *Jurors' Evaluations of Expert Testimony: Judging the Messenger and the Message*, 28 L. & Soc. Inquiry 441, 445–46 (2003); Neil Vidmar, *Expert Evidence, the Adversary System, and the Jury*, 95 Am. J. Pub. Health S137, S137–42 (2005).

little about the soundness of the views offered by people so clothed, but other indicators of expertise are more reliable. Members of the National Academy of Sciences or holders of endowed chairs in their specialties at major universities are more likely actually to *be* experts than those who are just dressed in the right clothes or exhibit the expected demeanor. Of course sometimes the indicators of expertise turn out to be less reliable, as when Nobel Prize winners opine on matters far removed from what they have won the prizes for. Still, it is hardly irrational for people to value the indicators of epistemic authority even when they do not understand the underlying subject, nor is it misguided to take the opinions of people possessing such indicators as authoritative. At the very least, we should not too quickly agree that a jury or judge is acting irrationally in taking certain externally observable indicia of expertise as useful proxies for the underlying soundness of the opinions of those who display such indicia.[70]

More importantly, a substantial body of research, mostly produced by psychologists, casts doubt on the empirical foundations of the longstanding belief in jury overvaluation of expert testimony. As one article put it, "The doubts about jury competence . . . stand in sharp contrast to the judgments of scholars who conduct research on jury decisionmaking."[71] More particularly, an American Bar Association study found no undue expert influence on juries in the complex cases it studied.[72] And a more recent survey article concluded that "[c]laims about jury incompetence, irresponsibility, and bias in responding to expert evidence [are] not consistent with a review of the many studies that have examined these issues from various methodological perspectives."[73]

To be sure, juries may sometimes or even often find specific items of evidence in complex cases beyond their ken.[74] And we know that jurors may occasionally become especially befuddled by highly technical scientific evi-

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70 *See* Anthony Champagne et al., *Expert Witnesses in the Courts: An Empirical Examination*, 76 JUDICATURE 5, 7–10 (1992); Jane Goodman et al., *What Confuses Jurors in Complex Cases: Judges and Jurors Outline the Problems*, TRIAL, Nov. 1985, at 65, 68 (reporting research showing that jurors engaged in careful analysis of expert credentials in deciding whom to believe); Daniel W. Shuman et al., *An Empirical Examination of the Use of Expert Witnesses in the Courts—Part II: A Three City Study*, 34 JURIMETRICS J. 193, 199–200 (1994). Especially because jurors have less personal involvement in the outcome than, say, the parties in a lawsuit, they are more likely, as the literature on persuasion teaches us, to rely on secondary (peripheral) indicators such as credentials rather than engaging in close (central) examination of the content of an assertion. *See* Richard E. Petty & John T. Cacioppo, *The Effects of Involvement on Responses to Argument Quantity and Quality: Central and Peripheral Routes to Persuasion*, 46 J. PERSONALITY & SOC. PSYCHOL. 69, 79–80 (1984).

71 Joe S. Cecil et al., *Citizen Comprehension of Difficult Issues: Lessons from Civil Jury Trials*, 40 AM. U. L. REV. 727, 744–45 (1991).

72 *See* SPECIAL COMM. ON JURY COMPREHENSION., AM. BAR ASSOC., JURY COMPREHENSION IN COMPLEX CASES 40 (1989).

73 Vidmar, *supra* note 69, at S142.

74 *See* Joseph Sanders, *Jury Deliberation in a Complex Case:* Havner v. Merrell Dow Pharmaceuticals, 16 JUST. SYS. J., no. 2, 1993, at 45, 61–65 [hereinafter Sanders, *Jury Deliberation*]; Joseph Sanders, *The Merits of the Paternalistic Justification for Restrictions on the Admissi-*

dence.[75] But other research reveals that jurors often do understand technical evidence, even in complex cases.[76] Moreover, even when jurors misunderstand specific items of scientific, technical, or statistical evidence, such micro-misunderstandings seem rarely to be the cause of erroneous verdicts. On the contrary, evidentiary complexity has been found not to explain differences between judge and jury outcomes,[77] and studies of presumably complex medical malpractice claims "have found jury verdicts to be moderately to strongly related to expert judgments of physician negligence."[78]

Part of the explanation for the tendency of juries to get it right more often than the skeptical tradition believes can be found in research focused on particular potential sources of juror error. For example, although there is a widespread fear of excessive influence by paid experts,[79] it turns out that both actual jurors and experimental subjects in mock jury studies[80] understand the incentives of paid experts, and as a result often substantially or even completely discount the opinions of those they perceive as "hired gun[s]."[81]

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bility of Expert Evidence, 33 SETON HALL L. REV. 881, 904–05 (2003) [hereinafter Sanders, *Merits*].

75 *See* MOLLY SELVIN & LARRY PICUS, THE DEBATE OVER JURY PERFORMANCE 24–26 (1987); John S. DeWitt et al., *Novel Scientific Evidence and Controversial Cases: A Social Psychological Examination*, 21 LAW & PSYCHOL. REV. 1, 8–11 (1997); M. Daniel Jacoubovitch et al., *Juror Responses to Direct and Mediated Presentations of Expert Testimony*, 7 J. APPLIED SOC. PSYCHOL. 227, 232–36 (1977).

76 *See* Ivkovic & Hans, *supra* note 69, at 446; Richard Lempert, *Civil Juries and Complex Cases: Taking Stock After Twelve Years*, *in* VERDICT 181, 192–94 (Robert E. Litan ed., 1993); Neil Vidmar, *Are Juries Competent to Decide Liability in Tort Cases Involving Scientific/Medical Issues? Some Data from Medical Malpractice*, 43 EMORY L.J. 885, 903 (1994); Neil Vidmar & Shari Seidman Diamond, *Juries and Expert Evidence*, 66 BROOK. L. REV. 1121, 1140–42 (2001).

77 *See* Theodore Eisenberg et al., *Judge-Jury Agreement in Criminal Cases: A Partial Replication of Kalven & Zeisel's* The American Jury, 2 J. EMPIRICAL LEGAL STUD. 171, 190–94 (2005); *see also* Vidmar, *supra* note 69, at S138 (citing HARRY KALVEN, JR. & HANS ZEISEL, THE AMERICAN JURY (1966)) (concluding that Kalven and Zeisel's 1950s study supports the position that evidence complexity does not explain the twenty percent of cases in which judge and jury disagree about the outcome).

78 Dennis J. Devine et al., *Jury Decision Making: 45 Years of Empirical Research on Deliberating Groups*, 7 PSYCHOL. PUB. POL'Y & L. 622, 685 (2001); *accord* Vidmar, *supra* note 69, at S138–39.

79 A fear that has existed for as long as experts have been testifying. *See* Winans v. N.Y. & Erie R.R. Co., 62 U.S. 88, 101 (1858) (expressing concerns about the ease of obtaining the "opinions of persons professing to be experts"). For a recounting of the history of this concern, see Susan Haack, *Irreconcilable Differences? The Troubled Marriage of Science and Law*, 72 LAW & CONTEMP. PROBS. 1, 4–5 (2009).

80 Mock jury studies often use college students as subjects, but it has been shown that college students perform similarly in studies to a cross-section of jury-eligible adults. *See* Brian H. Bornstein, *The Ecological Validity of Jury Simulations: Is the Jury Still Out?*, 23 LAW & HUM. BEHAV. 75, 77–80 (1999).

81 Joel Cooper & Isaac M. Neuhaus, *The "Hired Gun" Effect: Assessing the Effect of Pay, Frequency of Testifying, and Credentials on the Perception of Expert Testimony*, 24 LAW & HUM. BEHAV. 149, 162 (2000) (internal quotation marks omitted); *see* NEIL VIDMAR, MEDICAL MALPRACTICE AND THE AMERICAN JURY 173 (1995); Sanders, *Jury Deliberation*, *supra* note 74,

Other studies indicate that experts' race and gender have almost no effect on juror assessment of their credibility.[82] Similarly, juries have been found not to be seduced by an expert testifying with high confidence, and tend to credit medium-confidence experts and discount the testimony of high-confidence ones.[83] And a very recent review has found that the long-alleged susceptibility of jurors to overpersuasion by neuroscience evidence has "little empirical support."[84]

Cumulatively, this research suggests that juries might not be nearly as prone to failures of understanding and judgment in the evaluation of expert testimony as the conventional legal wisdom supposes.[85] In the face of this evidence, it is possible to speculate that some of the traditional but largely unsupported fear of jury overvaluation is premised on assumptions about how individual jurors, often of limited sophistication, will react to an expert and expert testimony. But jurors do not typically evaluate evidence—any evidence—by themselves. Nor do they make decisions in isolation from other evidence and from trial processes generally. Actual trials involve both cross-examination and the opportunity for opposing parties to present their own contrary evidence and their own opposing experts. As a result, it should come as little surprise that we know from the research that people become less gullible and less prone to overpersuasion when there is an opportunity for opposing parties to challenge experts and their expertise.[86] Moreover,

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at 51; Vidmar & Diamond, *supra* note 76, at 1155; *see also* Scott E. Sundby, *The Jury as Critic: An Empirical Look at How Capital Juries Perceive Expert and Lay Testimony*, 83 VA. L. REV. 1109, 1126–30 (1997) (describing skepticism by capital juries of experts who were obviously playing an adversarial role).

82 *See* James V. Couch & Jennifer N. Sigler, *Gender of an Expert Witness and the Jury Verdict*, 52 PSYCHOL. REC. 281, 285 (2002); Amina Memon & Daniel W. Shuman, *Juror Perception of Experts in Civil Disputes: The Role of Race and Gender*, 22 LAW & PSYCHOL. REV. 179, 189 (1998); Lynelle Vondergeest et al., *Effects of Juror and Expert Witness Gender on Jurors' Perceptions of an Expert Witness*, 1 MOD. PSYCHOL. STUD. 1, 5 (1993).

83 *See* Robert J. Cramer et al., *Expert Witness Confidence and Juror Personality: Their Impact on Credibility and Persuasion in the Courtroom*, 37 J. AM. ACAD. PSYCHIATRY & L. 63, 68 (2009).

84 Farah & Hook, *supra* note 24, at 88. Farah and Hook are responding, most particularly, to another recent study. *See* Deena Skolnick Weisberg et al., *The Seductive Allure of Neuroscience Explanations*, 20 J. COGNITIVE NEUROSCIENCE 470–77 (2008). Consistent with the Farah and Hook conclusions are several other studies that found no overvaluation of neuroscience evidence or images. *See* N.J. Schweitzer et al., *Neuroimages as Evidence in a* Mens Rea *Defense: No Impact*, 17 PSYCHOL. PUB. POL'Y & L. 357, 382 (2011); N.J. Schweitzer & Michael J. Saks, *Neuroimage Evidence and the Insanity Defense*, 29 BEHAV. SCI. & L. 592, 603 (2011).

85 Note also that the conventional wisdom, as captured by the "gatekeeper" metaphor, *see supra* notes 2–3 and accompanying text, presupposes that judges are less susceptible than juries to whatever overvaluation there may be, but this too may not be true. *See* Sanders, *Merits*, *supra* note 74, at 937–38.

86 *See* Edith Greene et al., *Juror Decisions About Damages in Employment Discrimination Cases*, 17 BEHAV. SCI. & L. 107, 119 (1999); Margaret Bull Kovera et al., *Reasoning About Scientific Evidence: Effects of Juror Gender and Evidence Quality on Juror Decisions in a Hostile Work Environment Case*, 84 J. APPLIED PSYCHOL. 362, 372 (1999); David P. McCabe et al., *The Influence of fMRI Lie Detection Evidence on Juror Decision-Making*, 29 BEHAV. SCI. & L. 566, 572

we also know that similar processes and interactions occur during jury deliberation, enabling the self-correcting dimensions of group deliberation to permit jurors to correct the misimpressions of other jurors, and also to bring up evidence that the recollections of other jurors may have neglected.[87]

It is important to bear in mind that the concern underlying the special treatment of expert evidence is a fear of *over*valuation. The research just summarized supports the view that this fear, if ever appropriate, would be most appropriate when only one side has expert witnesses. Thus, although there may well be a limited supply of those who can offer direct evidence, that limitation may not exist with respect to experts, leading to what David Bernstein and others have referred to as a potential "adversarial bias."[88] Under circumstances of substantial resource disparity between the sides, this possibility may well arise, and should not be underestimated. Still, in the normal case there will be opposing experts, leading most often simply to misunderstanding. And when there is juror misunderstanding, overvaluation may not be the consequence. At times, jurors who do not understand the technical evidence in a complex case simply ignore all of the expert evidence on both sides,[89] which is as compatible with undervaluation as it is with overvaluation. Similarly, even when jurors do understand the expert evidence,

(2011). Indeed, even cross-examination that itself has a questionable empirical basis may effectively undercut the effect of expert testimony. *See* Saul M. Kassin et al., *Dirty Tricks of Cross-Examination: The Influence of Conjectural Evidence on the Jury*, 14 LAW & HUM. BEHAV. 373, 378 (1990).

87 *See* JOHN GUINTHER, THE JURY IN AMERICA 230–31 (1988); REID HASTIE ET AL., INSIDE THE JURY 99–108 (1983); Shari Seidman Diamond & Mary R. Rose, *Real Juries*, 1 ANN. REV. L. & SOC. SCI. 255, 269 (2005); Phoebe C. Ellsworth, *Are Twelve Heads Better Than One?*, 52 LAW & CONTEMP. PROBS. 205, 206 (1989); Jessica M. Salerno & Shari Seidman Diamond, *The Promise of a Cognitive Perspective on Jury Deliberation*, 17 PSYCHONOMIC BULL. & REV. 174, 176–77 (2010); *see also* Kamala London & Narina Nunez, *The Effect of Jury Deliberations on Jurors' Propensity to Disregard Inadmissible Evidence*, 85 J. APPLIED PSYCHOL. 932, 937–38 (2000) (suggesting that jury deliberation helps lessen the biasing impact of inadmissible evidence).

88 "Adversarial bias" includes (but is not limited to) the ability of parties to select experts to suit their adversarial aims in ways that are much more limited than those who offer so-called direct evidence. Bernstein, *supra* note 7, at 454–56; *accord* Michael D. Green, *Pessimism About* Milward, 3 WAKE FOREST J.L. & POL'Y 41, 56–59 (2013). But much (although not all) of the concern with adversarial bias is dependent on the assumption that bias in the selection, payment, and testimony of experts will be largely undetected by the trier of fact, an assumption that may not be sound, *see supra* notes 80–88 and accompanying text, and which is thus less different from overvaluation than may at first sight appear.

89 *See* Goodman et al., *supra* note 70, at 66. Doing so is not necessarily irrational. Suspension of judgment in the face of expert disagreement is often quite reasonable. *See* Ben Almassi, *Conflicting Expert Testimony and the Search for Gravitational Waves*, 76 PHIL. SCI. 570, 581 (2009). And juries, who are not permitted simply to refuse to decide the case, may ignore conflicting expert testimony as a way of at least suspending judgment about the relevance of the expertise.

they sometimes ignore it when the experts offer opposing accounts or explanations.[90] Moreover, studies about expert statistical evidence, which jurors often do not understand, suggest even more specifically that errors of undervaluation are just as prevalent as errors of overvaluation.[91] To the extent that there is some or even much juror misunderstanding, therefore, it does not follow that overvaluation is the necessary consequence. More likely, what misunderstanding there is seems as likely to incline towards undervaluation as towards the overvaluation that is the traditional concern.

2. On Undervaluing the Overvaluation of Direct Testimony

The traditional fear of overvaluation of expert testimony is a comparative one. That is, the worry has been not only that juries will overvalue expert testimony, but also that they will overvalue it while they are at the same time valuing so-called direct evidence more or less accurately. Implicit in the traditional view is the belief that overvaluation is not a problem with respect to non-expert factual testimony because jurors (and judges), familiar in their own lives with regularly assessing the accuracy of what is reported to them, do not have the special disability in evaluating direct factual testimony that they have in evaluating the testimony of experts.[92] No one believes that juries will be perfect in evaluating direct evidence, of course, but in the normal case, there is no assumption of overvaluation.

As we now know, however, this longstanding assumption is likely false. Judges and jurors may overvalue evidence they perceive as direct, and may be especially susceptible to attributing excess credibility to eyewitness identifications and other forms of eyewitness testimony.[93] Yet because of defects in perception, memory, and description, direct or factual testimony may itself be highly vulnerable to inaccuracy. But because judges and jurors are often not aware of the factors that decrease the reliability of eyewitness perception and memory—think of the number of local news shows that self-advertise as "Eyewitness News"—the risk of overvaluation is especially great.

Jury overvaluation of this type of direct evidence is caused not only by the widespread but mistaken belief in the accuracy of eyewitness testimony

90 *See* Nancy Brekke & Eugene Borgida, *Expert Psychological Testimony in Rape Trials: A Social-Cognitive Analysis*, 55 J. PERSONALITY & SOC. PSYCHOL. 372, 379–81 (1988).

91 *See* David L. Faigman & A.J. Baglioni, Jr., *Bayes' Theorem in the Trial Process: Instructing Jurors on the Value of Statistical Evidence*, 12 LAW & HUM. BEHAV. 1, 13–14 (1988); Jason Schklar & Shari Seidman Diamond, *Juror Reactions to DNA Evidence: Errors and Expectancies*, 23 LAW & HUM. BEHAV. 159, 178 (1999).

92 *See* Ferguson v. Hubbell, 97 N.Y. 507, 514 (1884) (noting that jurors' common sense is normally sufficient to evaluate evidence).

93 *See supra* notes 39–43 and accompanying text; *see also* Gary L. Wells & Elizabeth F. Loftus, *Eyewitness Memory for People and Events*, *in* 11 HANDBOOK OF PSYCHOLOGY, 617, 624 (Randy K. Otto & Irving B. Weiner eds., 2d ed. 2012) (explaining that mistaken identification can be the primary evidence leading to wrongful convictions); *cf.* David Dunning & Emily Balcetis, *Wishful Seeing: How Preferences Shape Visual Perception*, 22 CURRENT DIRECTIONS PSYCHOL. SCI. 33, 34 (2013) (showing how initial perceptions as well as recall may be distorted by outcome preferences).

and other forms of first-hand observation,[94] but also by the equally mistaken belief that judges and juries are competent evaluators of the veracity of those who are offering such testimony.[95] "[T]he jury is the lie detector in the courtroom," it is said,[96] but we now know that juries, like ordinary people in general, are rather poor at identifying liars.[97] Indeed, it appears that ordinary people, even apart from being generally incompetent in distinguishing liars from truth-tellers, are more prone to identify liars as truth-tellers than they are to identify truth-tellers as liars.[98] And thus the research supports the conclusion that in evaluating the testimony of non-experts, juries may be inclined not only towards error, but towards the error of failing to identify untruthfulness more than failing to identify truthfulness. In other words, in this way too, the risk is precisely the risk of overvaluation.

Thus the risk of overvaluation appears to be at least as great for factual and so-called direct evidence as it is for expert testimony. But the overvaluation of direct or factual evidence has been typically underappreciated, just as the overvaluation of expert evidence has been typically over-appreciated. But if expert testimony is less subject to overvaluation than the traditional view supposes, and non-expert direct or factual testimony more subject to overvaluation, the gap between the two evaporates.[99] And if there is little or no support for the conclusion that overvaluation differentiates expert from non-

94 Some or much of jury overvaluation of direct evidence is a product of the various cognitive errors identified in the heuristics and biases literature. *See* James S. Liebman et al., *The Evidence of Things Not Seen: Non-Matches as Evidence of Innocence*, 98 Iowa L. Rev. 577, 624–51 (2013). And consider as well the way in which recent research has undercut the traditional reliance on the reliability of confessions. *See* Brandon L. Garrett, *The Substance of False Confessions*, 62 Stan. L. Rev. 1051, 1092–1107 (2010); *see also* Jennifer T. Perillo & Saul M. Kassin, *Inside Interrogation: The Lie, the Bluff, and False Confessions*, 35 Law & Hum. Behav. 327, 334 (2011) (claiming that experimental results showed that the common bluff technique that police officers use often leads innocent people to confess).

95 On the traditional confidence in juries as evaluators of witness veracity, see George Fisher, *The Jury's Rise as Lie Detector*, 107 Yale L.J. 575, 581–84 (1997).

96 United States v. Barnard, 490 F.2d 907, 912 (9th Cir. 1973); *accord* United States v. Rosenberg, 108 F. Supp. 798, 806 (S.D.N.Y. 1952); Commonwealth v. Seese, 517 A.2d 920, 923 (Pa. 1986).

97 *See* Geoffrey R. Loftus, *What Can a Perception-Memory Expert Tell a Jury?*, 17 Psychonomic Bull. & Rev. 143, 143–44 (2010); Steven Penrod & Brian Cutler, *Witness Confidence and Witness Accuracy: Assessing Their Forensic Relation*, 1 Psychol. Pub. Pol'y & L. 817, 819–22 (1995). On the poor ability of ordinary people to detect deception, see Charles F. Bond, Jr. & Bella M. DePaulo, *Accuracy of Deception Judgments*, 10 J. Personality & Soc. Psychol. Rev. 214, 216–17 (2006).

98 *See* Bond & DePaulo, *supra* note 97, at 231.

99 The statement in the text is a bit of an exaggeration. If we had accurate measures of overvaluation and undervaluation, we might discover that there was a difference between the respective treatments of expert and direct evidence even if there was less overvaluation of expert evidence and more overvaluation of direct evidence than traditionally believed. But in the absence of such measures, perhaps the more accurate statement is that there is no support for the belief that the overvaluation of expert testimony is greater than the overvaluation of direct testimony.

expert testimony, much of the foundation upon which the special and more stringent treatment of expert testimony appears to collapse.[100]

B. The Conceptual Response

The empirical support for the comparative skepticism about expert testimony is deeply suspect, but that is not the only problem. The conceptual foundation for treating expert testimony differently may be problematic as well. Recall that the differential treatment is premised on a basic difference between the opinions that experts offer and the facts that non-experts report. But even the Federal Rules Advisory Committee, in its original Note on Rule 701, recognized the weaknesses of the fact-opinion distinction.[101] Evidentiary opinions, after all, are inferences from facts.[102] But most of what we consider facts are inferences from even more basic facts. Even putting what philosophers call "sense data" aside,[103] when we say that we have seen a *fight* or a *game*, for example, we have made an inference from having observed some number of bodily movements, facial expressions, and the like. And the same holds true for statements of causation, as when a statement that someone was intoxicated presupposes that the condition we observed was caused by ingestion of alcohol rather than by illness.

Increasingly it has been recognized, therefore, that the inferences that experts draw from the more basic facts that they observe are not fundamentally different from the inferences that ordinary people draw on a regular basis.[104] Typically an expert offers an opinion about what, on the basis of her experience and training, might flow from some set of assumed facts. But the lay witness, in saying that someone appeared to be hurrying, or nervous, or male, or tall, or drunk,[105] is offering an opinion about what, based on the witness's own perceived facts, might be inferred from those facts. That in one case the underlying facts are perceived by the witness and in the other are assumed or perceived by someone else may be less of a difference than is

100 We say "much of" because there are other possible justifications. Some of these have been noted above. *See supra* notes 11–14 and accompanying text. Another possible justification is that the supply of witnesses who can offer direct testimony is limited while the supply of potential experts is not so limited, a differential that may be magnified when there are resource differentials between the parties. *See supra* note 88 and accompanying text.

101 *See* FED. R. EVID. 701 advisory committee's note (1972 proposed rules); *see also* Beech Aircraft Corp. v. Rainey, 488 U.S. 153, 168 (1988) (noting the absence of a clear distinction between statements of fact and statements of opinion).

102 *See* MUELLER & KIRKPATRICK, *supra* note 7, § 7.4, at 703 (recognizing that opinions are actually collections of particular facts); EDWARD W. CLEARY, MCCORMICK ON EVIDENCE 27 (3d ed. 1984) (criticizing the distinction between statements of fact and statements of opinion).

103 *See* Michael Huemer, *Sense-Data*, STAN. ENCYCLOPEDIA OF PHIL. (Feb. 25, 2011), http://plato.stanford.edu/entries/sense-data.

104 *See supra* notes 100–102 and accompanying text.

105 *See* State v. Sweet, 949 A.2d 809, 813 (N.J. 2008) (upholding lay opinion on drunkenness).

often thought, at least once we understand, as even the Advisory Committee understood, that most factual observations involve inferences—and therefore opinions[106]—as well.

Consider the case of drunkenness.[107] Suppose a lay witness observes someone slurring his speech, talking inappropriately loudly, and stumbling as he tries to walk. Under such circumstances, the witness is routinely allowed to offer the opinion, as lay opinion, that the person observed was drunk.[108] And such an opinion offered by the witness need not clear any higher hurdle or be supported by any separate justification. Rule 701 is about the style of testimony, but does not add additional barriers. But now suppose instead that the lay witness observes the same acts, describes them in (comparatively) basic factual terms, and is then followed on the witness stand by an expert on inebriation who is asked whether, in her opinion, based on what the lay witness has just said, the person the witness observed was drunk. Now the expert's testimony need not only make the conclusion more likely than it was without the evidence—as would be the case if it were the observer offering the opinion—but must also meet the additional requirement of establishing that the methods she uses to infer drunkenness meet the additional and heightened standards of *Daubert*. The witness in the first variant and the expert in the second are doing essentially the same thing, but the traditional skepticism about expert testimony requires the expert's testimony to clear barriers that the lay witness's testimony need not.

Adding one additional assumption to this example makes the problem with the traditional approach to expert testimony even more apparent. Suppose now that the lay witness has, over the course of his life, observed only a very small number of people who were actually drunk (and had never observed anyone with very low blood sugar). Were that the case, the witness would still be permitted to testify, and his lack of experience with or extensive observation of inebriates would go to the weight of his lay opinion, but not to its admissibility. And, in accordance with the permissive purpose of Rule 401 and its state equivalents, the evidence would be presumptively admissible. But if instead the expert testifies about the inferences she would draw from exactly the same facts, the burden then shifts to the proponent of the evidence to make an affirmative demonstration of reliability. So not only does it seem anomalous that an additional hurdle is added when the expert is drawing the same inferences from the same facts as the lay person, but now the anomaly appears even greater because here the expert is more reliable than the lay witness but is implicitly treated with greater skepticism.

106 Indeed, the Advisory Committee on the most recent "restyling" of the Federal Rules of Evidence eliminated the word "inference" from Rule 701 because of its belief that inferences are covered by the broader term "opinions," and that courts have never distinguished between an inference and an opinion. FED. R. EVID. 701, advisory committee's note (2011 amendments).

107 *See* Singletary v. Sec'y of Health, Educ. & Welfare, 623 F.2d 217, 219 (2d Cir. 1980).

108 *See, e.g.*, Mickelson v. State, 287 P.3d 750, 754 (Wyo. 2012); State v. Ards, 816 N.W.2d 679, 683 (Minn. Ct. App. 2012).

Examples like these emphasize the conceptual oddity of the special treatment of experts. When lay witnesses testify, most of what they say, even when not explicitly offering an "opinion," is by way of inference from more basic observed facts. Whether those inferences are justified is a question similar in structure to the inferences drawn by experts. Yet one of the more traditional justifications for the special treatments of experts, even if fading into the background with the rise of the (empirically dubious) concern with overvaluation, is that experts may offer opinions while lay witnesses must stick to the facts.[109] But if the distinction between fact and opinion collapses, then so does a justification for the special treatment of expert testimony that depends on that distinction. If, apart from the content of the opinion, lay witnesses can now do what experts can do—and that is the import of Rule 701—then any distinction between lay and expert witnesses turns only on the content of their knowledge. And if, as we have seen above, the content of the knowledge may not justify treating expert testimony with greater skepticism than lay testimony, then little of the foundation for treating experts differently remains.

The lack of a conceptual distinction between lay and expert testimony is underscored by the fact that lay inferences are typically dependent on expert opinion. The recent philosophical attention to testimony in general[110] highlights the issue. Our knowledge, whether in general or about specific acts or events, is hardly the exclusive product of our own observations.[111] It is a function of our own observations filtered through countless other observations and epistemic inputs, many of which rely on the statements of others. Moreover, a large proportion of the statements of others on which we rely are statements whose veracity we respect because we attribute authority to the makers of those statements.[112] When we spot a bird with a red breast digging for worms and then report that we have seen a robin, we rely, at least in part, on the authority of those whose expertise is a component of what leads us to believe that this is a robin. Similarly, when we smell rotten eggs outside our house, we suspect a gas leak and not a surreptitious depositor of rotten eggs on our lawn precisely because we have learned from experts, and only from experts, that natural gas, as treated for residential use, has the smell of rotten eggs. Rule 701(c) allows lay witnesses to give opinion testimony if the opin-

109 *See supra* note 47 and accompanying text.

110 *See, e.g.*, C.A.J. COADY, TESTIMONY (1994); JENNIFER LACKEY, LEARNING FROM WORDS (2008); Robert Audi, *The Place of Testimony in the Fabric of Knowledge and Justification*, 34 AM. PHIL. Q. 405 (1997); Richard Moran, *Getting Told and Being Believed*, *in* THE EPISTEMOLOGY OF TESTIMONY 272 (Jennifer Lackey & Ernest Sosa eds., 2006); Philip J. Nickel, *Trust and Testimony*, 93 PAC. PHIL. Q. 301 (2012).

111 *See* John Hardwig, *Epistemic Dependence*, 82 J. PHIL. 335, 349 (1985) [hereinafter Hardwig, *Epistemic Dependence*] (concluding that "there is knowledge that is known by the community, not by any individual knower"); *see also* John Hardwig, *The Role of Trust in Knowledge*, 88 J. PHIL. 693, 706 (1991) (arguing for an "epistemic cooperation" that requires "reliance on the testimony of others").

112 *See* Hardwig, *Epistemic Dependence*, *supra* note 111, at 336 ("[A]ppeals to epistemic authority are [an] essential[ ] ingredient in much of our knowledge.").

ion is "not based on scientific, technical, or other specialized knowledge,"[113] but most of the opinions that most of us have are highly dependent on what we have learned from experts.

Evidence law has long viewed direct observation as empirically reliable and philosophically unproblematic, but it turns out that neither of these beliefs is nearly as sound as evidence law has long believed. More particularly, evidence law's traditional privileging of individual observation is in reality a privileging of knowledge that comes in part from experts. A further anomaly, therefore, lies in the fact that when experts testify directly, their evidence has traditionally been suspect for fear of overvaluation, but when lay witnesses offer opinions or even facts, expert knowledge appears to be coming in the back door through expert-dependent observations. The puzzle, therefore, is in understanding why direct expert testimony is thought suspect when indirect expert evidence is not.

IV. Implications

Our argument is solely about the differential treatment of expert and non-expert evidence. It is not about the non-relative standards that should be applied to the admission of either lay or expert testimony. But differences can be resolved in one of two ways—the higher can be lowered or the lower can be raised. So although it might seem that the natural import of our argument, if accepted, would be to lower the standards for admitting expert testimony,[114] or, more precisely, to eliminate the *Daubert* (or *Frye*, for that matter) overlay on normal relevancy requirements, the difference might also be eliminated by raising the relevancy bar. If we are worried about jury overvaluation,[115] but not persuaded that there is differential overvaluation between factual observation and expert opinion, one solution could be to raise the standards of relevancy in all cases, perhaps by requiring reliability, or substantial reliability, for all evidence, and not just expert evidence.

This is not the place to consider this possibility in depth, largely because of the pervasive implications such a change in the baseline standards for relevancy might have on a wide range of other issues, including questions of access to litigation, the desirability (or not) of using the same rules and criteria of admissibility for criminal as for civil cases,[116] and the desirability (or not) of having the same rules for defendants as for the prosecution in crimi-

113 Fed. R. Evid. 701(c).

114 *See* Leslie I. Boden & David Ozonoff, *Litigation-Generated Science: Why Should We Care?*, 116 Envtl. Health Persp. 117, 121 (2008) (arguing for the lowering of the standards to admit expert testimony).

115 The arguments of Professor Friedman are in this neighborhood. *See* Friedman, *supra* note 35. Friedman appears to believe that there is overvaluation of expert testimony, but that overvaluation neither explains the *Daubert* revolution nor provides a satisfactory solution to the problem of too-frequent or too-large verdicts in mass tort and similar cases.

116 On the possibility that application of *Daubert* has produced, in fact and in practice, differences between civil and criminal cases with respect to admission of expert testimony, see Paul C. Giannelli, Daubert *Revisited*, 41 Crim. L. Bull. 302, 305 (2005).

nal cases.[117] It may be, for example, that the extremely low standards of relevancy embodied in Rule 401 and its ilk are a product of the justifiable desire to allow a criminal defendant the greatest leeway in presenting evidence in defense, such that the more pervasive regime of permissibility that now exists is merely the consequence of the combination of a willingness to assist defendants whose liberty or life is at issue coupled with a reluctance to have the trial system use different rules of evidence for different types of cases and different sides of the same case. And that reluctance, in turn, may be a function, at least in part, of having a court system whose judges typically hear both civil and criminal cases, thus making it difficult to imagine a successful system in which judges employed different evidentiary rules and principles from one case to another. Pulling too hard at the loose thread of expert testimony, therefore, may cause too much of the entire apparatus of civil and criminal procedure, as well as court organization, to unravel.

That said, however, it remains worth observing that *Daubert* may itself have been a solution mismatched to the problem it was designed to solve. Let us assume that there really is a problem of outsize judgments being levied against corporations that have not done very much wrong.[118] We are far from sure that this is so, and indeed, we remain skeptical that this is a problem. But the view that there is a problem—whether because of legally unjustified sympathy for plaintiffs or because of equally legally unjustified desire to punish large corporations—is by no means frivolous.[119] And if this is a problem, then we might inquire into the causes of that problem and what remedies might be available to alleviate it.

The *Daubert* defendants and the many amici supporting them assume that the problem is that juries are persuaded by the so-called junk science in delivering their verdicts. But we know that juries are often highly sympathetic to plaintiffs in their suits against corporations or insured defendants in numerous contexts, engaging in social engineering or cost-shifting simply to allocate resources away from large corporations and towards people injured through no or little fault of their own, the law notwithstanding.[120] To the extent that this is so, the problem is not so much with junk science and with what might persuade or overpersuade a jury as with the fact that the cases get to the jury in the first place. After all, a jury inclined to punish a corporation or transfer money from corporations to injured people could do so, if it gets the case, even if they are not specifically persuaded about the existence of causation as a scientific matter.

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117 *See* CHRISTOPHER SLOBOGIN, PROVING THE UNPROVABLE 131–44 (2007) (arguing for an asymmetry between prosecution and defense in the admission of scientific evidence).

118 See HUBER, *supra* note 4, for what has become the canonical statement of this view.

119 *See* Reid Hastie & W. Kip Viscusi, *What Juries Can't Do Well: The Jury's Performance as a Risk Manager*, 40 ARIZ. L. REV. 901, 914 (1998); Lisa Litwiller, *From* Exxon *to* Engle*: The Futility of Assessing Punitive Damages as Against Corporate Entities*, 57 RUTGERS L. REV. 301, 344 (2004); Cass R. Sunstein et al., *Do People Want Optimal Deterrence?*, 29 J. LEGAL STUD. 237, 241 (2000).

120 *See, e.g.*, Hastie & Viscusi, *supra* note 119, at 903, 916–17.

It is worthwhile noting in this context that none of the numerous briefs in *Daubert* actually relied on any research to support their claims of jury-overvaluation. Nor did they provide empirical support for their implicit claim that without the junk science the problem of the corporation-punishing jury would be lessened. The essence of the arguments of Merrell Dow and its supporting amici is that juries are persuaded by junk science, and that being persuaded by the junk science is the principal cause of a legally unjustified verdict. But there was little hard evidence in *Daubert* that any of these causal links actually exist.

Insofar as there is a problem, it appears to be less the jury overvaluation of junk science, and less the role of any such overvaluation in producing a legally unjustified verdict, and more the fact that some cases are getting to juries that should not. If the case does not get to the jury, then the possibility of jury-produced and legally unjustified charity, punishment, or cost-shifting is eliminated. So one possibility may be the laxity of the showing required to survive a motion for summary judgment.[121] Another might be the laxity of the general relevancy standard for admissibility. And still another could even be laxity in the underlying standards of liability.[122] If substantial reliability were a general requirement for admissibility, for example, it is possible that unreliable scientific evidence could be excluded without creating what appears to be an indefensible differential between expert and so-called direct or factual evidence.

It is an interesting question whether non-expert evidence could satisfy the existing substantive law of torts as applied in the typical mass tort case. Suppose ten witnesses testify that they had never been sick a day in their lives, that they then moved in middle age to a community in close proximity to a defendant's chemical plant, and that they were all diagnosed with the same form of cancer within a year. And suppose that this is the only evidence of causation. Under such circumstances, faithful adherence to Rule 401 might well allow the evidence, and faithful adherence to the existing law on summary judgment might permit the case to go to the jury. The question, and one to which we do not have an answer, is how often a jury in such cases would reach a judgment against the defendant as a way of compensating the unfortunate plaintiffs, regardless of any strong evidence of causation, and without any junk science whatsoever. Only if junk science would have made a

121 On the view that *Daubert* may have been more about the sufficiency of the evidence than about its admissibility, see Michael D. Green & Joseph Sanders, Admissibility Versus Sufficiency: Controlling the Quality of Expert Witness Testimony in the United States 1 (Mar. 5, 2012) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2016468.

122 Thus we see the suggestions for eliminating the causation requirement in some number of torts, including many of the torts that are at the heart of *Daubert* issues. *See, e.g.*, Margaret A. Berger, *Eliminating General Causation: Notes Towards a New Theory of Justice and Toxic Torts*, 97 COLUM. L. REV. 2117, 2117 (1997). For a challenge to the Berger position, see Allen & Nafisi, *supra* note 66, at 149–62.

judgment against the defendant more likely than without can junk science be understood as having caused what, *ex hypothesi*, is the problem.

CONCLUSION

It is revealing that not one of the briefs by or supporting Merrell Dow in *Daubert* brought forth any empirical evidence in support of the ubiquitous assertions in ten of the fourteen briefs that jury misunderstanding or overvaluation of expert testimony is a problem in need of a solution. Perhaps this was just good litigation strategy. If a raft of venerable intuitions is on your side, as it is here, and most of the real research is against you, as it is here, then relying on the common intuitions and not even mentioning the word "research" is good litigation strategy.

But good litigation strategy does not always produce good law. Much of evidence law in general has been constructed on an edifice of misinformation, pop psychology, and urban legends which is embarrassed by much of the modern research. The special treatment of expert testimony, and especially the overvaluation claims on which much of that special treatment is premised, is one of the areas in which evidence law seems most dramatically at odds with the current state of knowledge. It is ironic that the existing attempts to bring good science into the courtroom rest on such a thin scientific basis.