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Scientific Evidence as Foreign Law

Edward K. Cheng[†]

I. INTRODUCTION

In his dissent in *Daubert v. Merrell Dow Pharmaceuticals*, Chief Justice Rehnquist appeared skeptical as to whether federal judges could fulfill the gatekeeping role that the majority had constructed in its watershed opinion.¹ In a sense, Margaret Berger's defining contribution to the evidence world since *Daubert* has been to prove Chief Justice Rehnquist wrong. Her unflagging commitment to promoting science education for judges, whether through her Science for Judges program, her work on the *Reference Manual for Scientific Evidence*, or her work with the National Academy of Sciences, has set a shining example of how academic efforts can help solve, or at least positively impact, real world problems.

The occasion to write for this festschrift in celebration of my colleague, friend, and mentor thus seemed to cry out for a contribution that encompassed both of these attributes: a topic that involved science and judging, as well as one that held academic interest yet had practical implications. I hope that the following succeeds in this regard, but even if it does, I can take only partial credit, for its success would be through following Margaret's example.

Most contemporary debates about scientific evidence focus on admissibility under *Daubert* and the Federal Rules of Evidence. That bias is quite understandable—after all, it is the framework imposed by the United States Supreme Court. *Daubert*, however, rests on a fundamental assumption: that courts should treat scientific facts like any other adjudicative facts ultimately left to the jury. Perhaps the involvement of

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¹ *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 600 (1993) (Rehnquist, C.J., dissenting) (“I defer to no one in my confidence in federal judges; but I am at a loss to know what is meant when it is said that the scientific status of a theory depends on its ‘falsifiability,’ and I suspect some of them will be, too.”).

specialized knowledge requires judges to act as gatekeepers to ensure some basic level of reliability, but under *Daubert*, scientific facts are still just *facts*.

As I will argue, scientific facts fit awkwardly into the conventional framework for conceptualizing and regulating the proof of adjudicative facts. For one thing, scientific facts are rarely ever unique to the case at hand. They are instead often applicable to a variety of cases, and thus ideally should be decided uniformly. At the same time, proof of scientific facts generally depends on an entire body of knowledge, rather than a specific witness or piece of physical evidence. These attributes as well as others suggest that we should think carefully about the framework for scientific factfinding.

Consequently, in this contribution, I look not at how *Daubert* does or should operate, but rather how the legal system should treat scientific facts more fundamentally. In particular, I suggest that proving scientific facts has much in common with proving foreign law. This perspective shift could prove fruitful for understanding and addressing many of the problems in scientific evidence today. More importantly, the procedural mechanisms developed by conflicts-of-law scholars to handle proof of foreign law can be adapted to the scientific evidence context.

II. FACTUAL FRAMEWORKS

A. *The Law-Fact Distinction*

Lawyers are intimately familiar with the law-fact distinction and the many implications the dichotomy entails. Perhaps law and fact are not theoretically distinct,² but in practice, the distinction makes all the difference. Consider the implications of labeling an issue as a fact question. In an ordinary trial, the jury is the decisionmaker for facts, and the rules of evidence govern the process of proof.³ Adversarial

² See Ronald J. Allen & Michael S. Pardo, *The Myth of the Law-Fact Distinction*, 97 NW. U. L. REV. 1769, 1769-70 (2003) (arguing that laws and facts have no “essential difference,” and that the distinction is rather a function of pragmatic considerations such as the identity of the factfinder and whether the fact has general or specific import).

³ Conventionally, the rules of evidence govern only jury trials, with judges in bench trials empowered to give erstwhile inadmissible evidence whatever weight they feel fit. For an insightful article about why judges may also benefit from a rule-based evidentiary framework, see Frederick Schauer, *On the Supposed Jury-Dependence of Evidence Law*, 155 U. PA. L. REV. 165 (2006).

system values are also in full swing, with both the judge and the jury assuming a largely passive role. Factfinders ideally have no preexisting knowledge of any litigation-specific facts, and independent research is strictly prohibited.⁴ After trial, reviewing courts treat factual findings with the highest deference, but although such findings are binding on the parties through *res judicata*, there is no *stare decisis per se*—later parties in other trials are free to relitigate the issues.⁵

The process of finding law operates in sharp contrast. Judges determine the law. They are supposed to know the law,⁶ and in many instances, judges independently research relevant law and legal theory, unencumbered by any rules of proof.⁷ After trial, appellate courts treat lower court legal determinations with no deference at all. However, *stare decisis* will bind future parties to the legal decisions made in the present case, in part because law is neither party-specific nor “owned” by the parties, but rather is part of a broader scheme of justice with implications that go beyond the present case.⁸

B. *Tensions*

Despite its popularity and practical usefulness, the law-fact distinction is hardly a clean one. Over the years, various

⁴ E.g., Michael B. Mushlin, *Bound and Gagged: The Peculiar Predicament of Professional Jurors*, 25 YALE L. & POL'Y REV. 239, 241-42 (2007) (discussing the tension between jury decisions based only on presented evidence and the background experience that jurors inevitably bring into the deliberation room); Laura A. Caldwell & Kimberly A. Wilkins, *The Jailed Juror and Other Tales of Juror Misconduct: Is Reform Required in Illinois?*, 21 N. ILL. U. L. REV. 379, 393-96 (2001) (recounting a series of Illinois cases of juror misconduct involving extrarecord research).

⁵ Traditional rules requiring mutuality for issue preclusion to operate have of course been abandoned. 18A CHARLES ALAN WRIGHT, ET AL., FEDERAL PRACTICE AND PROCEDURE § 4464 (2d ed. 2009). However, imposition of “nonmutual preclusion is . . . allowed only if ‘the party against whom an estoppel is asserted had a full and fair opportunity to litigate’ in the first action,” *id.* (quoting *Blonder-Tongue Labs. v. Univ. of Ill. Found.*, 402 U.S. 313 (1971)), and offensive nonmutual preclusion is permitted only if the trial court determines such imposition to be fair, *id.* (citing *Parklane Hosiery Co. v. Shore*, 439 U.S. 322 (1979)).

⁶ As the Latin phrase goes, *jura novit curia*, or “the court knows the law.”

⁷ See generally Amanda Frost, *The Limits of Advocacy*, 59 DUKE L.J. 447, 461-67 (2009) (discussing, among other things, the ability of courts to raise jurisdictional issues or “extraordinary” merits issues *sua sponte*).

⁸ See *U.S. Bancorp Mortgage Co. v. Bonner Mall P'ship*, 513 U.S. 18, 26-27 (1994) (“Judicial precedents are presumptively correct and valuable to the legal community as a whole. They are not merely the property of private litigants and should stand unless a court concludes that the public interest would be served by a *vacatur*.” (quoting *Izumi Seimitsu Kogyo Kabushiki Kaisha v. U.S. Philips Corp.*, 510 U.S. 27, 40 (1993) (Stevens, J., dissenting))).

“hybrid” issues have surfaced that fit uncomfortably into the dichotomy and expose its tensions. For example, as Kenneth Culp Davis noted long ago, the category of facts subdivides between adjudicative facts, which are facts in the traditional sense, and legislative facts, which courts use to interpret or develop the law.⁹ While adjudicative facts may be appropriately subject to the usual strictures, legislative facts, being part of legal inquiry and the judicial realm, should and do face fewer restrictions. Indeed, building on Davis’s distinction, John Monahan and Laurens Walker have argued that social science research, a species of legislative fact, should be treated akin to “legal precedent under the common law.”¹⁰

Another orphan of the law-fact regime is foreign law. Here, I am not referencing the contemporary constitutional controversy, which asks whether American courts may legitimately use foreign laws as persuasive or moral authority in interpreting the Constitution.¹¹ Instead, the relevant foreign law problem for our purposes is the more pedestrian one of how to prove the *content* of foreign law. In today’s globalized world, courts commonly encounter cases that are governed by the laws of another jurisdiction. The problem becomes how courts determine what French law or Chinese law says about the matter at hand.¹²

⁹ Kenneth Culp Davis, *An Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364, 402-04 (1942).

¹⁰ John Monahan & Laurens Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. PA. L. REV. 477, 485-88 (1986).

¹¹ *Compare, e.g.*, *Roper v. Simmons*, 543 U.S. 551, 575-79 (2005) (discussing global trends in capital punishment for juvenile offenders), *and id.* at 604-05 (O’Connor, J., dissenting) (arguing that “the Court has consistently referred to foreign and international law as relevant to its assessment of evolving standards of decency”), *with id.* at 624 (Scalia, J., dissenting) (rejecting the idea of using foreign law). A sizable literature on the issue of foreign and international law in constitutional jurisprudence—too voluminous to catalog here—has developed in the wake of *Roper* and other cases.

¹² *See generally* Aurora Bewicke, *The Court’s Duty to Conduct Independent Research into Chinese Law: A Look at Federal Rule of Civil Procedure 44.1 and Beyond*, 1 CHINESE L. & POL’Y REV. 97 (2005) (reporting recent cases involving the application of foreign law). Some courts evade the foreign law problem altogether by simply applying the law of the forum, a practice that commentators have criticized. *See, e.g.*, *Vishipco Line v. Chase Manhattan Bank, N.A.*, 660 F.2d 854, 860 (2d Cir. 1981) (suggesting that applying the law of the forum is permissible, even if technically incorrect under choice-of-law rules, if neither party objects); RESTATEMENT (SECOND) CONFLICTS OF LAW § 136 cmt. h (1971) (“When both parties have failed to prove the foreign law, the forum may say that the parties have acquiesced in the application of the local law of the forum.”); Roger J. Miner, *The Reception of Foreign Law in the U.S. Federal Courts*, 43 AM. J. COMP. L. 581, 583 (1995) (criticizing the practice of ignoring foreign law and simply applying the convenient law of the forum).

One may be tempted to treat foreign law no differently than the law of the forum—after all, law is law. But a moment's reflection reveals the problem to be trickier than it would seem at first glance. Unlike in the case of domestic law, the judge in a foreign law case does not bring a lifetime of experience and expertise to the task.¹³ The relevant statutory and case materials are likely in another language and out of an entirely different legal tradition.¹⁴ The judge will therefore need the help of some type of factfinding process, most often through an expert provided by the parties or appointed by the court.

Questions about scientific facts present similar problems.¹⁵ Although they are treated as facts, general scientific facts, such as whether a scientific method like DNA typing is valid, or whether a substance causes cancer, fit poorly into the ordinary factual framework. The proof process for facts is built largely around the assumption that fact determinations are specific to the case. Usually, this perspective makes sense, because adjudicative facts are of little interest beyond the litigants at bar. No other institution will ever have more information or be better equipped than the jury to decide a factual issue. Second-guessing the jury only creates inefficiency.

Scientific facts, however, are different. Being general truths, they ideally should apply consistently from one case to another.¹⁶ In addition, scientific facts are easily subject to external scrutiny. Unlike ordinary facts, in which no one is the wiser, with scientific facts, whole communities of scientists stand ready to challenge erroneous court findings. The legal system therefore has an important broader interest in establishing scientific facts accurately beyond doing justice in the individual case.

¹³ See Gregory S. Alexander, *The Application and Avoidance of Foreign Law in the Law of Conflicts*, 70 NW. U. L. REV. 602, 603-04, 630-31 (1975) (noting that judges are far more likely to be ignorant of foreign law and lack the context necessary to interpret new provisions).

¹⁴ See JOHN HENRY MERRYMAN & ROGELIO PÉREZ-PERDOMO, *THE CIVIL LAW TRADITION* (1985) 61-67 (describing the idea of “legal science” in German jurisprudence and how it sharply diverges from American legal realism).

¹⁵ To be perfectly precise, the term “scientific facts” here does not include individual applications of science, which are case-specific and far more like ordinary adjudicative facts. See, e.g., *In re UNISYS Sav. Plan Litig.*, 173 F.3d 145, 161 (3d Cir. 1999) (Becker, C.J., dissenting) (drawing a distinction between general methodology questions which are for the judge, and questions about the reliability of a specific expert witness, which are for the jury).

¹⁶ See *supra* note 15.

C. *Finding a Home for Scientific Evidence*

Given the problems with the factual regime, one option is to treat scientific evidence as akin to law, along the lines of Monahan and Walker.¹⁷ Here, however, the fit remains problematic. The proof process for law is relaxed precisely because judges are assumed to be well-versed and experienced in interpreting the laws of their home jurisdiction. Yet, judges rarely if ever will have such a high comfort level with scientific issues.¹⁸

But if scientific evidence is neither fish nor fowl, how should we handle it? The standard response for a law review article is to propose some kind of third, hybrid category. The proposal in turn prompts the reader to roll her eyes, and rightly so—after all, the whole point of a dichotomy is to make rough divisions, and adding a third or fourth classification is rarely justified. But in this case, there actually already exists such a hybrid category, and it is the one for foreign law.

Foreign law and scientific facts are neither law nor fact for roughly the same reasons. Approaching them as factual questions neglects their status as generalized inquiries subject to external verification. Approaching them as legal questions ignores judges' profound lack of expertise and experience in the substantive areas. Both inquiries thus fall into a no-man's land between law and fact. Indeed, they are so similar that the governing doctrines should arguably cohere.

The good news is that conflicts-of-law scholars have grappled with the problem of proving foreign law for some time. Indeed, the poor fit between the law-fact dichotomy and foreign law questions has borne itself out in actual doctrinal wrangling. At common law and historically in the federal courts, questions of foreign law were treated as questions of fact so that pleading requirements, the rules of evidence, and

¹⁷ Monahan & Walker, *supra* note 10, at 488.

¹⁸ For example, consider Judge Kozinski's reaction to the Supreme Court's *Daubert* decision:

As we read the Supreme Court's teaching in *Daubert*, therefore, though we are largely untrained in science and certainly no match for any of the witnesses whose testimony we are reviewing, it is our responsibility to determine whether those experts' proposed testimony amounts to "scientific knowledge," constitutes "good science," and was "derived by the scientific method." . . . Mindful of our position in the hierarchy of the federal judiciary, we take a deep breath and proceed with this heady task.

Daubert v. Merrell Dow Pharms., 43 F.3d 1311, 1316 (9th Cir. 1995).

adversarial values all applied.¹⁹ Yet, in 1966, Federal Rule of Civil Procedure 44.1 did the unthinkable—it recharacterized foreign law as a question of law, opening the door to de novo appellate review and independent judicial investigations.²⁰

Courts have arguably never fully adopted the fact or law framework exclusively. Instead, the regime governing foreign law questions often ends up as a hybrid, mixing and matching procedures and requirements from both categories of proof. For example, despite defining foreign law to be a question of law, federal courts have effectively held that a failure to provide sufficient evidence of foreign law remains a valid ground for dismissal.²¹ Along similar lines, while federal appellate courts have outwardly encouraged judges to do independent research on foreign law,²² in practice, judges remain reluctant,²³ and perhaps more tellingly, rely substantially on experts, something they would almost never do for domestic law.

Such hybridization also appears outside the federal context. Texas has “a hybrid rule by which the presentation of the foreign law to the court resembles the presentment of evidence but which ultimately is decided as a question of law.”²⁴ Other states handle foreign law questions primarily through judicial notice,²⁵ but as one leading casebook observes, for cases involving “foreign legal system[s] . . . alien in language and structure,” courts will often rely heavily on party presentation and decline to do independent research (evoking “fact”), yet

¹⁹ Arthur R. Miller, *Federal Rule 44.1 and the “Fact” Approach to Determining Foreign Law: Death Knell for a Die-Hard Doctrine*, 65 MICH. L. REV. 613, 617-24 (1967) (describing the process of finding foreign law at common law).

²⁰ FED. R. CIV. P. 44.1 & advisory committee’s notes; see also TEX. R. EVID. 203. But see Griffin v. Mark Travel Corp., 724 N.W.2d 900, 902 (Wis. Ct. App. 2006) (noting that Wisconsin maintains the common law classification of foreign law as fact); Amsellem v. Amsellem, 730 N.Y.S.2d 212, 215 (N.Y. Sup. Ct. 2001) (holding that “the interpretation of French law is an issue of fact that can be resolved at trial”).

²¹ See *Esso Standard Oil S.A. v. S.S. Gasbras Sul*, 387 F.2d 573, 581 (2d Cir. 1967) (holding that plaintiff “failed in its burden of proof” regarding foreign law and that even under Rule 44.1, plaintiff failed to show “it ha[d] a good cause of action”), cited in *Adams v. Arabian Am. Oil Co.*, No. 92-35028 1993 U.S. App. LEXIS 25448, at *7-8 (9th Cir. Sept. 28, 1993) (unpublished opinion) (noting that although “there is no ‘burden of proof’ in the evidentiary sense with respect to foreign law . . . the plaintiff who pleads foreign law still must successfully persuade the court that he has a good cause of action”).

²² See *Twohy v. First Nat’l Bank of Chi.*, 758 F.2d 1185, 1193 (7th Cir. 1985).

²³ RUDOLF B. SCHLESINGER, ET AL., *COMPARATIVE LAW* 73 (6th ed. 1998).

²⁴ See, e.g., *Long Distance Int’l, Inc. v. Telefonos de Mex.*, 49 S.W.3d 347, 351 (Tex. 2001) (discussing TEX. R. EVID. 203).

²⁵ E.g., N.Y. C.P.L.R. 4511 (2007).

dispense with the ordinarily restrictive rules of evidence (evoking “law”).²⁶

The regimes for handling foreign law are by no means uniform: the particular breed of hybridization differs from one jurisdiction to another.²⁷ Considered together, however, they offer a new perspective on the proof of scientific evidence, and implicitly suggest some avenues for reform. The next Part draws out some of these implications.

III. APPLYING THE FOREIGN LAW MODEL

What would be the ramifications of imposing a foreign law model on scientific evidence? To get a sense, this Part maps some of the more fundamental features of a typical foreign law framework onto the scientific evidence context. In the abstract, some of the resulting proof requirements and procedures may appear a bit radical, but a closer look shows them to be sensible, and in some cases, not all that different from judges’ natural inclinations.

A. *Proof at Trial*

A hybrid treatment of scientific facts would undoubtedly result in important changes to the process of proof at trial. For example, one of the key changes that arose when foreign law shifted from a fact to a law regime was the relaxation of the focus on oral presentation of evidence. The move to a law regime also affected the applicability of the rules of evidence, judicial notice, and pleading requirements.²⁸

1. Oral Presentation

Whatever can be said about the merits of conventional direct and cross examination, they almost certainly do not

²⁶ SCHLESINGER, *supra* note 23, at 69.

²⁷ *Id.* at 95-98 (surveying the states and concluding that a plurality follow FED. R. CIV. P. 44.1, but that a significant number adopt some type of judicial notice approach, and a small minority continue to treat foreign law as fact).

²⁸ *E.g.*, FED. R. CIV. P. 44.1 (“In determining foreign law, the court may consider any relevant material or source, including testimony, whether or not submitted by a party or admissible under the Federal Rules of Evidence.”); TEX. R. EVID. 203 (“The court, in determining the law of a foreign nation, may consider any material or source, whether or not submitted by a party or admissible under the rules of evidence, including but not limited to affidavits, testimony, briefs, and treatises.”).

apply to scientific questions.²⁹ Consider how good instructors and researchers generally convey new scientific ideas. Ideas are developed through a (hopefully) carefully constructed lecture in which background concepts build up to a main thesis.³⁰ And as any veteran of a science course knows, sound understanding of that lecture almost always requires lengthy and prior preparation with reading materials.³¹ This recipe undoubtedly continues to hold true in the courtroom, where cases often turn on a stack of scientific articles (or lack thereof). The choppy back-and-forth of ordinary courtroom testimony is suboptimal and confusing, and knowledgeable experts unfamiliar with legal examination methods become easily derailed by the attorneys.

2. Rules of Evidence

The applicability of the rules of evidence also changes considerably for the better. One of the biggest weapons in the rules of evidence is the hearsay rule, which requires that witnesses testify only about matters for which they have personal knowledge. Scientific witnesses will almost never satisfy the rule, since science is a collaborative process, taking place over considerable distances and time. Expert testimony rules, of course, create sizable exceptions to the hearsay rule, allowing witnesses to use inadmissible evidence for the purpose of reaching their conclusions,³² but the strong presumption is

²⁹ See Harold L. Korn, *Law, Fact, and Science in the Courts*, 66 COLUM. L. REV. 1080, 1086 (1966) (“The larger issue, beyond criticism of obstacles to expert testimony, is whether oral communication is at all conducive to correct determination of complicated scientific and technological issues.”).

³⁰ Indeed, the use of mini-lectures to juries has become increasingly common in scientific cases. See, e.g., Marvin J. Garbis, *Aussie Inspired Musings on Technological Issues—Of Kangaroo Courts, Tutorials & Hot Tub Cross-Examination*, 6 GREEN BAG 141, 144 & n.16 (2003) (recounting a federal patent trial in which the judge had considered having a “tutorial expert . . . give[] the jury an introductory tutorial lecture”).

³¹ See, e.g., *State v. Erickson*, 574 P.2d 1, 6 (Alaska 1978) (questioning, in a case involving cocaine’s proper classification, whether a hearing would provide better evidence than looking at briefs and judicial research); Neil Vidmar & Shari Seidman Diamond, *Juries and Expert Evidence*, 66 BROOK. L. REV. 1121, 1152-53 (2001) (discussing psychological studies showing that jurors who receive summaries of expert testimony “were more likely to make clear distinctions . . . and recall more trial-relevant information”).

³² FED. R. EVID. 703 (“If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted.”).

that these bases are never revealed to the factfinder.³³ Even under the learned treatises exception to the hearsay rule, scientific journal articles “may [only] be read into evidence but may not be received as exhibits.”³⁴ The end result is that jurors are structurally prevented from grappling with the basis of an expert’s opinion, forcing them to either believe the expert or not. This “deference” model³⁵ of expert testimony is rife with danger, particularly since relying on traditional cues for assessing witness credibility is not necessarily a sound method for assessing scientific experts.³⁶ Furthermore, there is almost no reason to judge scientific facts upon the idiosyncrasies of a particular scientist. Unlike with traditional facts, in which eyewitnesses are not generally fungible, with scientific facts the witnesses typically are. The expert is a synthesizer of vast quantities of information, and it is the information and not the expert that ideally should be the focus of the inquiry.

3. Judicial Notice

For similar reasons, judicial notice practice also improves. For adjudicative facts, judicial notice involves an extremely high bar. Words like “indisputable,” or “beyond controversy” litter the landscape, discouraging parties and courts from deviating from the ordinary presentation of

³³ FED. R. EVID. 703 (“Facts or data that are otherwise inadmissible shall not be disclosed to the jury . . . unless the court determines that their probative value in assisting the jury to evaluate the expert’s opinion substantially outweighs their prejudicial effect.”).

³⁴ FED. R. EVID. 803(18). The federal version of the learned treatises exception is in fact liberal when compared to some state schemes. *See, e.g.*, CAL. EVID. § 1341 (creating hearsay exception only for “books of science . . . made by persons indifferent between the parties . . . when offered to prove facts of general notoriety and interest”); Glenn Koppel, Re: Scientific Evidence as Hearsay, Evidence Listserv Discussion, Feb. 24, 2010 (on file with author) (discussing the narrowness of the California exception).

³⁵ Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education?*, 87 NW. U. L. REV. 1131, 1133 (1993).

³⁶ *But see* Sanja Kutnjak Ivkovi & Valerie P. Hans, *Jurors’ Evaluations of Expert Testimony: Judging the Messenger and the Message*, 28 LAW & SOC. INQUIRY 441 (2003) (presenting research showing that jurors “consider both the messenger and the message in the course of evaluating the expert’s credibility”); Daniel W. Schuman & Anthony Champagne, *Removing the People From the Legal Process: The Rhetoric and Research on Judicial Selection and Juries*, 3 PSYCHOL. PUB. POL’Y & L. 242, 253-54 (1997) (reporting research suggesting that jurors evaluate experts based on “a very sensible set of considerations—the expert’s qualifications, reasoning, factual familiarity, and impartiality,” and that they “attempt to go beyond superficial considerations”).

evidence.³⁷ For questions of foreign law, however, the strictures become considerably more relaxed, a state-of-affairs that arguably better suits scientific evidence. Since scientific facts are generalized facts, the court can afford to be more inquisitive, and judicial notice need not demand iron-clad evidence.

4. Pleading

Finally, the hybrid model for foreign law retains (at least in spirit) the pleading requirements from the fact regime. As previously noted, failure to provide evidence of foreign law therefore can provide grounds for dismissal. Retaining these pleading requirements in the scientific context seems similarly sensible. When dealing with the law of the forum, extensive pleading is not required because everyone is presumed to have access to the governing law, and because the court has both expertise and comprehensive research mechanisms at its disposal. This is of course not true for scientific facts. Placing burdens on the moving party thus seems eminently reasonable.³⁸

B. Seeking Information Beyond the Parties

The aforementioned changes to the proof process may be the more fundamental implications of imposing a foreign law model on scientific facts, but perhaps the more exciting ones are the inquisitorial mechanisms that the foreign law model suggests. In ascertaining the foreign law applicable to a case, some courts have demonstrated the power of independent judicial research, court-appointed experts, and external institutions. To be sure, some judges still resist using these mechanisms because they run sharply against adversarial

³⁷ FED. R. EVID. 201 (“A judicially noticed fact must be one not subject to reasonable dispute . . .”); FED. R. EVID. 201 advisory committee’s notes (noting that for adjudicative facts, “[a] high degree of indisputability is the essential prerequisite”).

³⁸ My embrace of a conventional pleading regime for scientific facts may initially appear in tension with Margaret Berger’s well-known proposal to dispense with proof of general causation in toxic tort cases. See Margaret A. Berger & Aaron D. Twerski, *Uncertainty and Informed Choice: Unmasking Daubert*, 104 MICH. L. REV. 257 (2005); Margaret A. Berger, *Eliminating General Causation: Notes Towards a New Theory of Justice and Toxic Torts*, 97 COLUM. L. REV. 2117 (1997). Margaret’s thesis, however, is a substantive one—namely that tort law should rethink its focus on causation and refocus on things like culpability and failures to test. My focus, in contrast, is on the process of proof presuming no change in the substantive law.

norms, but their explicit recognition in the foreign law context has promoted greater acceptance, a process that could improve how courts handle scientific evidence.

1. Court-Appointed Experts

Court-appointed experts are perhaps the most modest suggestion to come from the foreign law hybrid model. The Federal Rules of Evidence explicitly discuss and allow the use of court-appointed experts in scientific evidence cases.³⁹ Some courts have used them over the years,⁴⁰ and the Federal Judicial Center has published material describing, facilitating, and encouraging their use.⁴¹ Indeed, even Justice Breyer, writing in *Joiner v. General Electric Co.* managed to make a pitch.⁴²

That said, the reality on the ground is that court-appointed experts are rarely used.⁴³ For some judges, the idea of a neutral expert is anathema, whether because it is inconsistent with the adversarial process, or because it smacks too much of judicial abdication. But for most, the difficulties of finding, funding, and accommodating a court-appointed expert are simply not worth the perceived benefits, so trudge on the judge (or jury) must. An added endorsement from the hybrid model, however, may be a welcome boost of legitimacy, encouraging judges to do more along these lines.

³⁹ FED. R. EVID. 706; see also Andrew MacGregor Smith, Note, *Using Impartial Experts in Valuations: A Forum-Specific Approach*, 35 WM. & MARY L. REV. 1241, 1268 & n.134 (1994) (cataloging states with evidence provisions similar to Rule 706).

⁴⁰ See, e.g., Debra L. Worthington et al., *Hindsight Bias, Daubert, and the Silicone Breast Implant Litigation*, 8 PSYCH. PUB. POL'Y & L. 154, 162 (2002) (listing several high-profile examples, including the breast implant, DES, asbestos, and Parlodel litigations).

⁴¹ E.g., JOE S. CECIL & THOMAS E. WILLGING, COURT-APPOINTED EXPERTS: DEFINING THE ROLE OF EXPERTS APPOINTED UNDER FEDERAL RULE OF EVIDENCE 706 (1993); Joe S. Cecil & Thomas E. Willging, *Accepting Daubert's Invitation: Defining a Role for Court-Appointed Experts in Assessing Scientific Validity*, 43 EMORY L.J. 995, 1004-05 tbl.1 (1994).

⁴² Gen. Elec. Co. v. Joiner, 522 U.S. 136, 149-50 (Breyer, J., concurring) (discussing the use of court-appointed experts, "special masters and specially trained law clerks" as helpful mechanisms in science-related cases).

⁴³ DAVID H. KAYE, ET AL., THE NEW WIGMORE: A TREATISE ON EVIDENCE, *Scientific Evidence* § 10.4.1, at 348; Samuel R. Gross, *Expert Evidence*, 1991 WISC. L. REV. 1113, 1191 (1991).

2. Independent Judicial Research

The next level of reform deals with independent judicial investigations. Beyond considering party-provided information and arguments, judges handling questions of law may generally conduct independent research. As previously noted, a motivation for this exception to the usual rule against *ex parte* behavior is that courts should correctly apply legal rules regardless of the parties' positions, especially since those decisions will become precedents in future cases. Even for core legal questions this practice has its detractors,⁴⁴ but it is reasonably well accepted.

Independent judicial research can be quite useful for judges attempting to understand scientific testimony as well. Party testimony in this sphere tends to become a battle of the experts with the court placed in the unenviable position of mediating between two or more well-credentialed scientists.⁴⁵ In this context, the natural inclination of any beleaguered decisionmaker is to do independent library research on his own. I have argued elsewhere that this practice is both legitimate and desirable, despite the obvious sacrifice to adversarial norms.⁴⁶ The judges themselves, however, are evenly split,⁴⁷ although moving to a hybrid model may legitimate the practice as it has in the foreign law context.

3. External Institutions

Perhaps the most radical reform suggested by the foreign law model is the use of an external institution with greater expertise for determining scientific facts. In the foreign law context, this general idea surfaces in the use of comparative law research centers and certification procedures. For example, in Germany and France, courts have historically used comparative law centers, notably the Max Planck Institute for Foreign and International Private Law and the

⁴⁴ See, e.g., Adam A. Milani & Michael R. Smith, *Playing God: A Critical Look at Sua Sponte Decisions by Appellate Courts*, 69 TENN. L. REV. 245 (2002).

⁴⁵ The classic articulation of this problem is found in Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40 (1901). As Judge Hand asks, "how can the jury judge between two statements each founded upon an experience confessedly foreign in kind to their own? It is just because they are incompetent for such a task that the expert is necessary at all." *Id.* at 54.

⁴⁶ Edward K. Cheng, *Independent Judicial Research in the Daubert Age*, 56 DUKE L.J. 1263, 1274-75 (2007).

⁴⁷ *Id.* at 1276-77 & figs.1 & 2.

French Center of Comparative Law, to gather information on “unfamiliar foreign laws.”⁴⁸ Somewhat analogously, federal courts, when confronted with ambiguous substantive issues of state law under diversity, often certify such questions to state supreme courts.⁴⁹

Concededly, no such procedures appear to exist in American courts for gathering information about foreign law. Use of comparative law centers is a European phenomenon, whereas certification surfaces only with regard to state law issues under *Erie*.⁵⁰ Yet, on a conceptual level, the procedures seem eminently sensible. If a court faces a difficult or ambiguous question of foreign law and is at a loss as to how to resolve it, whom better to ask than a foreign court?⁵¹

The analog to these mechanisms in the scientific evidence context is to certify questions to relevant scientific bodies asking for advice. Clearly the context is not exactly the same, since a foreign or state supreme court has conclusive authority to declare the rule for its jurisdiction, whereas scientific bodies obviously do not. Nonetheless, an opinion on the state of science from, for example, the National Research Council of the National Academy of Sciences, can be extremely helpful, if not de facto conclusive in resolving scientific questions in court.⁵²

One charge against such certification is its lack of democratic accountability, and that may indeed be a serious cost of the practice. However, as a practical matter, previous reports by the National Academy of Sciences on scientific matters with legal import have been well received and influential in legal circles. The most famous instance is

⁴⁸ Alexander, *supra* note 13, at 637 & n.157.

⁴⁹ Doug M. Keller, Note, *Interpreting Foreign Law Through an Erie Lens: A Critical Look at United States v. McNab*, 40 Tex. Int'l L.J. 157, 178 & n.203 (2004) (discussing certification); Geri J. Yonover, *A Kinder, Gentler Erie: Reining in the Use of Certification*, 47 ARK. L. REV. 305, 313-17 (1994) (discussing the history of certification and finding certification statutes among the majority of states).

⁵⁰ Keller, *supra* note 49, at 183 & n.253 (reporting that there is currently “no procedure by which federal courts can certify a difficult foreign legal question to the relevant foreign court,” except for Puerto Rico, which is “clearly a unique situation”).

⁵¹ *Id.* at 184-85 (proposing the application of *Erie*-type procedures to the foreign law context).

⁵² See generally D.H. Kaye, *The NRC Bullet-Lead Report: Should Science Committee Make Legal Findings?*, 46 JURIMETRICS J. 91, 104-05 (2005) (raising the question whether science committees like the National Academies should make legal determinations in addition to scientific findings).

perhaps the DNA study,⁵³ but more recent panels on lead bullet analysis⁵⁴ and the like have been similarly successful.⁵⁵ All of these previous reports have arisen independent of any formal judicial request or funding, but one wonders if a more formal link could prove beneficial for both sides.⁵⁶

C. *Decisionmakers*

The last area in which the foreign law model might offer suggestions for scientific evidence inquiries is in the decisionmaking process itself. Under a foreign-law-as-fact framework, the jury was the finder of foreign law, and appellate courts reviewed these decisions with a high level of deference. With the shift to a more law-oriented framework, foreign law became the province of the judge and was reviewed *de novo* on appeal.

1. Factfinder

Scientific evidence as it currently stands already occupies the middle ground in terms of decisionmaker. Nominally, scientific facts are facts for the jury. *Daubert* is merely a reliability screen, no different than other admissibility inquiries under the rules of evidence. But in practice, as everyone knows, *Daubert* has had monumental significance on the way litigants prove scientific facts in court. After all, excluding an opponent's scientific expert effectively negates his ability to present any scientific evidence at all, and thus cases often live and die at *Daubert* hearings.⁵⁷

⁵³ NAT'L RESEARCH COUNCIL, THE EVALUATION OF FORENSIC DNA EVIDENCE (1996); NATIONAL RESEARCH COUNCIL, DNA TECHNOLOGY IN FORENSIC SCIENCE (1992).

⁵⁴ NAT'L RESEARCH COUNCIL, FORENSIC ANALYSIS: WEIGHING BULLET LEAD EVIDENCE (2004).

⁵⁵ Perhaps the most ambitious project of all has been the recent National Research Council report on forensic science, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD (2009). Its impact still remains to be seen.

⁵⁶ My conversations with Margaret, who has of course served on some of these efforts, suggests that they are exceptionally expensive and impractical for all but the most controversial and pressing problems. One wonders, however, if perhaps less expensive versions could be similarly organized.

⁵⁷ David G. Owen, *A Decade of Daubert*, 80 DENV. U. L. REV. 345, 362 n.115 (2002) (quoting D. Alan Rudlin, *The Judge as Gatekeeper: What Hath Daubert-Joiner-Kumho Wrought?*, 29 PRODUCT SAFETY & LIABILITY REP. 329, 336 (2001) ("[T]he Daubert hearing and ruling have effectively become virtually as case outcome determinative as a class certification hearing and ruling: once decided, a case either shrivels up and goes away, or becomes more dangerous to try.")).

Adopting the foreign law model may therefore involve a change in factfinder that is more significant from a formal standpoint than a practical one. For all intents and purposes, judges have already claimed a lion's share of the scientific factfinding process. Undoubtedly, however, adopting the foreign law model would complete the transformation and give it greater transparency.

2. Appellate Review

At present, federal appellate courts review scientific reliability determinations under *Daubert* only for abuse of discretion.⁵⁸ The application of an abuse-of-discretion standard is perfectly in line with appellate review standards for other evidentiary rulings, but critically misses the generality that distinguishes scientific from ordinary adjudicative facts. The current *Joiner* doctrine contemplates having one case find a scientific or forensic method sufficiently reliable to be admissible, while a second case does not. The problem is that there can be only one right answer, and precedent should reflect that.⁵⁹

Again, shifting to a foreign law model would help legitimate a change to de novo review, which would have appellate courts perform their established role in ensuring uniformity and consistency among lower courts. Deferential review is well-established for facts and the evidentiary rules that govern them. By converting the proof of scientific facts into a more law-like hybrid, the benefits of de novo review become more obvious, increasing the feasibility of such a shift.

IV. CONCLUSION

The foreign law model offers a third option beyond the conventional law-fact distinction for handling the proof of scientific facts. The problems of proving foreign law and proving scientific facts are sufficiently close that the relatively modern scientific evidence field can take advantage of the

⁵⁸ *Gen. Elec. v. Joiner*, 522 U.S. 136 (1997).

⁵⁹ My co-authors and I argue precisely along these lines in our treatise, and as it happens, many courts have seemingly distinguished case-specific scientific evidence, which should be reviewed deferentially, from "trans-case scientific issues," which should be reviewed de novo. *Joiner*, however, draws no such distinction, making it problematic and in need of additional sharpening. DAVID L. FAIGMAN ET AL., *MODERN SCIENTIFIC EVIDENCE* § 1:34, at 100-03 & n.17 (2009).

wisdom developed over the years by conflicts scholars. In its strong form, the foreign law model provides a specific, concrete model for reform in scientific evidence. But even in its weak form, the linking of foreign law and scientific evidence is a useful thought experiment that provides a launching point for discussion on how we might rethink the process of proof in scientific cases.⁶⁰

A final matter worth acknowledging is the obstacles a hybrid vision for scientific evidence might encounter. Doctrinally, the most serious barriers are probably the constitutional ones. The Seventh Amendment guarantee of jury trials, for example, poses problems for the move to a judicial factfinder. One response might be to revisit the arguments in support of Federal Rule of Civil Procedure 44.1's constitutionality,⁶¹ but those arguments are far less persuasive in the scientific evidence context, if for no other reason than that scientific facts are still "facts" by any common understanding, and no amount of doublespeak will turn them into "law." Consequently, any practical reform may need to perpetuate a *Daubert* structure in which the jury remains the nominal factfinder, even if it features high levels of judicial supervision.

Along more cultural lines, as Sam Gross and others have argued, given our adversarial traditions, the legal system often resists and ignores inquisitorial reforms.⁶² Advocating for each of these reforms in isolation may therefore be too much to ask. However, one way to combat cultural resistance is to start with practices with which judges are familiar and comfortable, and then expand them gradually. For example, *Daubert* itself is somewhat inquisitorial in flavor, since it sharply chastens the conventional, adversarial presentation of expert evidence by imposing a judicial gatekeeper. *Daubert* has become widely adopted beyond the federal system and has unquestionably

⁶⁰ This more chastened view may be the more realistic one, since the problem of proving foreign law is not without continuing difficulties. See Alexander, *supra* note 13, at 630 (suggesting that both common law and civil law methods of proving foreign law have been similarly "ineffective").

⁶¹ Miller, *supra* note 19, at 684-88 (discussing various reasons why foreign law, although a question of fact at common law, may not require jury determination under the Seventh Amendment); see also Note, *Proof of the Law of Foreign Countries: Appellate Review and Subsequent Litigation*, 72 HARV. L. REV. 318, 322 n.38 (1958) ("[I]t is arguable that since foreign law was decided by a jury at common law, a federal court is bound by the seventh amendment to give the question to the jury and exercise a narrow scope of review." (citation omitted)).

⁶² Cheng, *supra* note 46, at 1303; Gross, *supra* note 43, at 1197-98.

influenced the way judges (and evidence scholars) think about scientific evidence. What explains its success? Certainly being a Supreme Court edict helped, but the genius of *Daubert* was framing the reform of scientific evidence as an admissibility problem. Judges are comfortable making admissibility decisions; *Daubert* is only a modest extension.

If judges have (or will) become accustomed to the Rule 44.1 framework for handling foreign law, then shifting scientific evidence questions into this hybrid regime could be more successful than adopting the reforms piecemeal. Lawyers are creatures of analogy, and once comfortable with Rule 44.1, extending it to scientific evidence may only require a minor mental shift.

* * *

Two aspects of Margaret's scholarship and approach to evidence have always struck me as important guideposts for future generations of evidence scholars. One is aspirational, the other cautionary.

The aspirational thread is that in thinking about evidence and proof, one should avoid tunnel vision and confining oneself exclusively to the "Rules." No article better demonstrates the rewards of this kind of "outside-the-box" thinking than Margaret's 1997 article on eliminating general causation.⁶³ Proving causation in toxic tort cases is often a remarkably difficult task from an evidentiary standpoint, resulting in unnecessary social costs.⁶⁴ Margaret's solution to the problem, however, is not endless tweaking of the evidentiary doctrines, but rather considering new tort perspectives and changing the substantive tort requirements.⁶⁵

The cautionary thread is simply that scientific evidence problems are, as Margaret likes to say, "very difficult." The problems of expert evidence have plagued courts for over two centuries,⁶⁶ and while as academics we are preternaturally disposed to elegant and grand solutions, those solutions are unlikely to work out. Real life is too messy, and in this business, silver bullets are few and far between. Change and improvement will realistically arise through accretion, not revolution.

⁶³ Berger, *supra* note 38.

⁶⁴ *Id.* at 2118, 2122-31.

⁶⁵ *Id.* at 2152.

⁶⁶ TAL GOLAN, LAWS OF MEN AND LAWS OF NATURE: THE HISTORY OF SCIENTIFIC EXPERT TESTIMONY IN ENGLAND AND AMERICA 4 (2004).

My hope is that linking scientific evidence with foreign law pays tribute to both these nuggets of wisdom distilled from Margaret's long and distinguished career. On the first score, the link blends evidence law with comparative law, two fields so disparate that I dare say they share few if any scholars in common. On the second, by hewing closely to well-established precedents in the conflicts field and using modest analogies to port them over to scientific evidence, the proposal eschews the grand "solution" in favor of the messier but more gradual and flexible "approach."

Of course, none of this is to say that Margaret will not have her doubts about my crazy idea, but I would not have it any other way.