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META-EVIDENCE: DO WE NEED IT?

*Christopher B. Mueller**

This Essay applies the prefix “meta” to evidence law to help determine whether existing evidence doctrine and its underlying values serve us well in the settings of toxic tort suits and child abuse prosecutions. There are other indications in this closing decade of the twentieth century that evidence doctrine is inadequate on matters of specific detail¹ and in more sweeping ways.² But something can be learned from the two controversial areas considered here.

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1. Omitted is a discussion of Federal Rules of Evidence that are spectacular in their failure, like FED. R. EVID. 201 on judicial notice (seldom cited; more complicated than it is worth); and FED. R. EVID. 301 on presumptions in civil cases (incoherent because it seems to adopt the Thayer “bursting bubble” philosophy, but legislative comments imply that presumptions are more durable and unacceptable because courts think many presumptions simply *should not* disappear when counterproof is offered). Other problematic provisions include FED. R. EVID. 608 (confusing because it bars extrinsic proof of acts by witness, but not when such proof contradicts his or her direct testimony); FED. R. EVID. 407 (which does or does not apply in strict liability suits and is or is not substantive under *Erie* doctrine); and numerous hearsay exceptions, including FED. R. EVID. 803(3) (state-of-mind statements); FED. R. EVID. 804(b)(1) (former testimony); and FED. R. EVID. 804(b)(3) (statements against penal interest).

2. Empirical experiments suggest that laypeople are not good at detecting deliberate falsehood, and there is some indication that observers are *worse at it* when they watch facial expressions (they do better to listen to voice and focus on posture and physical cues other than expression). See Michael J. Saks, *Enhancing and Restraining Accuracy in Adjudication*, LAW & CONTEMP. PROBS., Autumn 1988, at 262-64; Olin G. Wellborn III, *Demeanor*, 76 CORNELL L. REV. 1075, 1078-91 (1991). In addition, several academic psychologists have made strong arguments that eyewitness identification testimony, which is particularly important in criminal prosecutions, is unreliable. See, e.g., EYEWITNESS TESTIMONY: PSYCHOLOGICAL PERSPECTIVES (Gary Wells & Elizabeth Loftus eds., 1984). Critics suggest that our approach to expert testimony has also failed in different ways—we invite too much of it because applicable legal standards are vague and uncertain (even irrelevant), and expert testimony sometimes violates important process values underlying the hearsay doctrine and the Confrontation Clause. See, e.g., Ronald L. Carlson, *Policing the Bases of Modern Expert Testimony*, 39 VAND. L. REV. 577, 584-86 (1986); Ronald L. Carlson, *Collision Course in Expert Testimony: Limitations on Affirmative Introduction of Underlying Data*, 36 U. FLA. L. REV. 234, 242-51 (1984). Further, doctrinal scholars continue to attack the hearsay doctrine head on, usually arguing that it is dysfunctional and excludes too much. See generally Roger C. Park, *A Subject Matter Approach to Hearsay Reform*, 86 MICH. L. REV. 51 (1987) (summarizing and replying to standard attacks and proposing limited reform); Eleanor Swift, *A Foundation Fact Approach to Hearsay*, 75 CAL. L. REV. 1339 (1987) (proposing alternative to hearsay doctrine).

Among branches of adjective law, evidence is not alone in facing evolutionary challenge.³ In civil procedure, the Federal Rules (now more than fifty years old) sought to reduce formalism, introduce flexibility, expand the concerns that count in litigation and propel cases toward trial on the merits. But now the Federal Rules of Civil Procedure are expected to provide guidance on questions far beyond the vision of their framers, and their meaning and utility are in question in the setting of complex litigation, especially consolidated suits and class actions.⁴ In criminal procedure, serious challenges have arisen in sentencing, where the modern effort to achieve fairness by flexibility was overwhelmed by complaints that instead the result was uneven application. The new approach involves specific guidelines, which have been met in turn with a barrage of criticism.⁵ In choice of law and jurisdiction, conventional doctrine is on the verge of incoherence or irrelevance in some settings. The promising analytical tool known as interest analysis and the uneasy marriage of jurisdiction-selecting rules and general principles set out in the Second Restatement seem almost meaningless in mass toxic exposure cases, where traditional barriers to jurisdiction in any single federal court have come to be seen as quaint. Reformers hope to ameliorate these problems by federalizing choice of law rules and expanding personal and subject matter jurisdiction in federal courts, but these attempts are mired down and enormously problematic.⁶

3. For evidence scholars, the enthusiasm that greeted the coming of the Federal Rules has passed and experience in applying the Rules has brought imperfections to light. Also, questions of legitimacy similar to those confronting constitutional theorists are beginning to affect evidence law. Modern challenges to common values and assumptions have taken on a stridency not always seen in academic or political discourse, and are beginning to reach evidence law.

4. See, e.g., Steven N. Subrin, *How Equity Conquered Common Law: The Federal Rules of Civil Procedure in Historical Perspective*, 135 U. PA. L. REV. 909, 992 (1987) (principal architect of Civil Procedure Rules "made an art form out of procedural formlessness," rejecting arguments that "form is the essence of procedure" and that "oversimplified practice in a merged system would ultimately lead to chaos."). See generally A.L.I. COMPLEX LITIGATION PROJECT, chs. 1-3 (Tent. Draft No. 1, 1989), chs. 3, 5 (Tent. Draft No. 2, 1989) (recommending, inter alia, sweeping intersystem consolidation system and expanded federal jurisdiction).

5. For a discussion of the problem, see generally Stephen Breyer, *The Federal Sentencing Guidelines and the Key Compromises Upon Which They Rest*, 17 HOFSTRA L. REV. 1 (1988) (analyzing competing goals and practical needs that led to compromises in guidelines).

6. Governmental interest analysis as a method of choice of law was developed by the late Professor Currie and championed in recent years by Professor Kay. See, e.g., BRAINERD CURRIE, *SELECTED ESSAYS ON THE CONFLICT OF LAWS* 188-282 (1963); Herma Hill Kay, *A Defense of Currie's Governmental Interest Analysis*, 215 R.C.A.D.I. 22 (1989). The American Law Institute endorsed elements of this approach, combined with lists of factors and contacts pointing to the state of "most significant relationship," all supplemented by narrow default rules addressing particular problems. See factors set forth in RESTATEMENT (SECOND) OF

I hope "meta-evidence" calls to mind an approach to issues of proof combining standard doctrine and its underlying values with insights from the sciences and with at least renewed awareness that structural problems and occasionally substantive issues affect evidentiary dilemmas.⁷ My own answer to the question in the title is neither certain nor sanguine, but qualified and conflicted. In the areas considered here, I think the answer is yes and no. In toxic tort cases, the yes part is that evidence law needs help, that existing doctrine is inadequate and underlying values do not take us very far, that we need both evidence reform and help from science. The no part is that science can only help a little, that unaddressed structural problems and difficult issues of procedure and substance have strained evidence law and the factfinding function of courts, and that easy expedients like lowering the barriers that keep cases from going to juries are not promising. In child abuse prosecutions the yes part is that science can help a little, but the no part is that science cannot do much to help determine particular issues of historical fact or resolve difficult hearsay problems.

CONFLICT OF LAWS § 6 (1971). In the setting of consolidated complex litigation, including mass tort litigation, many hope for salvation in federalized choice of law rules. See, e.g., A.L.I. COMPLEX LITIGATION PROJECT, ch. 6 (Tent. Draft No. 3, 1990).

Apart from the problem of finding consensus, the difficulty with this step is that federalizing choice of law rules is likely to result either in applying the laws of many states to various aspects of litigation with multistate elements (simplifying the selection process but leaving great complexities), or selecting the laws of only a few interested states on the basis of substantive preferences (which would make federalized choice of law clumsy and awkward, and would effectively adopt federal substantive standards). On the problems of federalized choice of law rules, see generally Mary K. Kane, *Drafting Choice of Law Rules for Complex Litigation: Some Preliminary Thoughts*, 10 REV. LITIG. 309 (1991) (discussing problems arising in complex litigation context relating to choice of law rules). On the problem of expanded federal jurisdiction, see generally Linda S. Mullenix, *Complex Litigation Reform and Article III Jurisdiction*, 59 FORDHAM L. REVIEW 169 (1990) (addressing substantive and procedural problems surrounding complex dispute resolution).

7. I am not the first in the legal academy to borrow the prefix. See William N. Eskridge, Jr., *Metaprocedure*, 98 YALE L.J. 945 (1989) (reviewing ROBERT M. COVER ET AL., *PROCEDURE* (1988)). This review, using rhetoric attempting to nudge readers toward an academic vision of political correctness, contrasts the "Hobbesian Paradigm" of private-rights litigation with the "Brown Paradigm" that adjudication is a process for developing and articulating "public values," and assumes we know just outcomes and a just society when we see them. I am unpersuaded by this attempted "paradigm shift" (I think that is a word visionaries might use) and less confident about what makes just outcomes and just societies. In the areas addressed in this Essay, nobody can be sure what the right vision is because the social and economic background is complex and contested and seldom grasped in a comprehensive way, and lofty visions do not produce the arguments that count.

I. UNDERLYING VALUES: A BRIEF APPRAISAL

A. *What Do We Have Here?*

Underlying American evidence law are a handful of well-known concerns, usually described in general terms. High on the list are mistrust of juries, insuring care in factfinding and controlling the manner and scope of trials.⁸ Stated more softly are policies relating to particular suits (intrinsic policies) and broader (extrinsic) policies. In addition to being general (perhaps for that reason) these concerns overlap and sometimes conflict, are complicated and many sided and find expression in different ways in different doctrines.

Also underlying American evidence law are two cultures that generate competing and sometimes conflicting views of the nature of trials. One may be called the truth-seeking vision, holding that an important social purpose of trials is to reach sound results and that accurate factfinding is essential to this end.⁹ The other may be called the rhetorical vision, holding that parties are responsible for trying suits and must have not only the means to *develop and uncover* truth in any particular case, but also the means to *persuade* fact finders as to what is true. Not surprisingly, academic scholars emphasize the former, while practicing lawyers emphasize the latter, and judges are harder to characterize.

Hearsay, to pick the central doctrine of American evidence law, implicates most of these concerns. The conventional reason for excluding hearsay is mistrust of juries—a fear that lay fact finders cannot properly appraise remote statements and are too unsuspecting. However, the concerns underlying hearsay are somewhat broader. Care in factfinding is implicated because remote statements bypass the safeguards of the trial process (oath, demeanor, cross-examination), and it seems to be universally agreed that *any* fact finder (not just lay juries) can better appraise a

8. Without being exhaustive, it is easy to see that evidence doctrines reflect these concerns. Evidence of prior crimes is carefully regulated, in efforts to accommodate competing interests in admitting relevant evidence against concerns that fact finders may react in anger and defendants may be tried for what they are rather than what they did or did not do. See FED. R. EVID. 609. Further, documentary evidence is expected to be proved by use of documents rather than less reliable accounts from human memory, unless special reasons appear to justify doing otherwise. See FED. R. EVID. 1002. Virtually all evidence must be shown by knowledgeable witnesses to be what the proponent claims, lest fact finders make easily avoidable mistakes. See FED. R. EVID. 602.

9. There is also a grand vision holding that the main purpose of courts is to articulate “public values,” but few people in the profession or the academy subscribe wholeheartedly to that view, and it is far more common to suppose that court judgments play slow and incremental roles in reflecting and building cultural values, as a necessary and good by-product of resolving particular disputes, and that only in rare instances do individual judgments have dramatic impact on public values. See *supra* note 7.

human account by a live witness than one by a remote witness.¹⁰ And in criminal cases especially, the serious limitations that hearsay doctrine puts on use of statements produced or gathered by government agents reflects multiple concerns: jury credulity and care in factfinding are implicated. So are intrinsic policy concerns, because juries are unlikely to appreciate the pressures faced by prosecution witnesses and law enforcement agents, and probably *no* fact finder can reliably appraise statements by such people. Further, as a matter of intrinsic policy we discourage both police and prosecutors from generating the out-of-court statements to be used against people charged with crime.

Hearsay doctrine is also a focal point of conflict between the truth-seeking and rhetorical visions of trials. Emphasizing the former, reformers have long thought all prior statements by testifying witnesses should be admissible. Emphasizing the latter, practitioners insist on live testimony by live witnesses, and believe juries remember the *messenger* who recites remote statements and overlook the strengths or frailties of the remote speaker. Practitioners, as anyone can see by reading Federal Rule of Evidence 801(d)(1), largely won this battle.¹¹

The rules governing burdens of persuasion and presumptions illustrate other intrinsic policy concerns—"intrinsic" because they are linked to applicable substantive principles. Burdens of persuasion make it easier or harder to prevail on various kinds of claims or defenses, and a major reason for civil presumptions is quite similar, relieving certain litigants from having to prove important points.¹² Privilege rules rest on extrinsic policies—"extrinsic" because the focus is to protect and encourage certain relationships independently of substantive issues in suit, perhaps most importantly the spousal and attorney-client relationships.

B. *What's Missing Here?*

Perhaps nobody who teaches evidence feels comfortable with all evidence doctrines or the ways they express and embody underlying values.

10. For penetrating appraisals of the hearsay doctrine, see Park, *supra* note 2; Swift, *supra* note 2. See also my own appraisal of hearsay and reactions to Park and Swift in Christopher Mueller, *Post-Modern Hearsay Reform: The Importance of Complexity*, 76 MINN. L. REV. (forthcoming 1992).

11. FED. R. EVID. 801(d)(1) (authorizing nonhearsay treatment for only few prior statements by testifying witnesses).

12. In employment discrimination suits, for instance, claimants can prevail even if they lack direct evidence of discrimination by taking advantage of a presumption that arises on proof of some points that are more easily shown. See *Texas Dep't of Community Affairs v. Burdine*, 450 U.S. 248, 253 (1981) (discrimination presumed if plaintiff shows membership in protected class, application for opening for which she was qualified, and that job went to another).

Perhaps, also, everyone who teaches evidence thinks doctrine is sometimes wrongheaded, sometimes manipulable, sometimes too rigid or particular or too loose or general, and that the underlying concerns are elastic and the tradeoffs incommensurable—balancing probative worth against such factors as prejudice or privacy or tendency to confuse. Such doubts about doctrine and its underlying values are serious and have surely crossed many of our minds, but equally serious are gaps in wider knowledge and understanding.

One such gap in understanding is that we have little proof beyond common sense that our doctrines are wise, and thus innumerable questions can be asked on this subject.¹³ In toxic tort litigation and child abuse prosecutions, for example, we have little insight on the question of whether experts can educate juries by presenting them with insights on matters of hard science or social science, although work in these related areas is proceeding rapidly.¹⁴ Perhaps our understanding will improve through experiments in social science, but we should not expect too much; it is hard to set up control models in which we can *know* what is true or how *actual* juries function, and in most litigation settings the idea of truth itself is infused with value judgments that are hard to reach and harder yet to measure.¹⁵ We should take some solace in the fact that the same lament applies to *substantive* doctrine too, and I think evidence

13. Do juries misappraise hearsay? Do prior deeds or crimes shed light on truthfulness or lack thereof? Do our hearsay exceptions rest on factors that truly bear on reliability?

14. Based on empirical studies, some scholars argue that experts can help jurors exercise sounder judgment in other circumstances. See Steven O. Penrod & Brian L. Cutler, *Eyewitness Expert Testimony and Jury Decisionmaking*, LAW & CONTEMP. PROBS., Autumn 1989, at 43, 62-69 (discussing eyewitness identification); William Thompson, *Are Juries Competent to Evaluate Statistical Evidence?*, LAW & CONTEMP. PROBS., Autumn 1989, at 9, 24-40 (discussing use of statistical evidence in criminal cases); Neil J. Vidmar & Regina A. Schuller, *Juries and Expert Evidence: Social Framework Testimony*, LAW & CONTEMP. PROBS., Autumn 1989, at 133, 149-50 (discussing Battered Woman and Rape Trauma Syndrome, eyewitness identification).

15. The Article by Vidmar and Schuller reports studies showing that jurors in simulations are affected by Battered Woman Syndrome testimony, concluding that such testimony had a "salutary effect on the more prejudicial beliefs," apparently meaning that jurors develop more sympathy for "the fear [a] woman feels in an abusive relationship" and about her "inability to leave a setting in which abuse is threatened." See Vidmar & Schuller, *supra* note 14, at 154. Perhaps the conclusion is correct, but the fact that expert testimony had persuasive effect does not show the previous level of sympathy was wrong. Later, Vidmar and Schuller acknowledge that simulations differ from actual trials because in simulations jurors "read a transcript, listen to an audiotape, or view a videotape" and verdicts are "hypothetical" and have "no real consequences." *Id.* at 175. Criticism on these grounds, they conclude, is "valid," but they defend the research on the ground that many studies have been done, that some involved "actual jurors" and found "consistent trends" and that findings are "consistent with more general bodies of social psychological theory." *Id.*

people must make peace with the notion that doctrine itself reflects estimation or judgment more than certainty or experimental measurement.¹⁶

Another gap is that we have little understanding of the impact of bureaucratic litigation on evidence law. Standard doctrine focuses on the two-party suit raising compact questions of guilt or innocence, negligence or due care. The focus is not consolidated or class claims or complex questions like toxicity. Procedural conventions do not work the same way in bureaucratic litigation, and evidence law cannot work the same way either.¹⁷

A third gap is a sense for the systemic impact of evidence doctrine. Are we reaching satisfactory results, or not? Do plaintiffs or prosecutors lose when they should win because our evidence rules are not working well, or vice versa? We have little or no knowledge of the impact of doctrines on the performance of courts.

II. TOXIC TORT CASES

Issues of causation are hard in toxic tort suits for many reasons. From one perspective, the difficulties stem from scientific uncertainties that are unavoidable because: (1) science does not have an answer (how much do animal studies reveal about human reactions?); (2) statistical evidence from epidemiological studies varies widely in strength in ways typically described in terms of significance levels and confidence intervals;¹⁸ (3) most proof of toxicity leaves questions of individual attribution unanswered (whatever we may know about the sample, did a *particular*

16. Despite extended theoretical studies, we have little more than faith to sustain the belief that products liability law produces a safer world. See generally GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* (1970) (discussing legal and economic principles of accident law); WILLIAM LANDES & RICHARD POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* (1987) (analyzing common law of torts through positive economic theory); STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* (1987) (discussing accident law's effect on human behavior). The real effects and shortcomings of legal doctrines creating racial preferences are seldom examined or questioned by legal scholars, although critics have begun to emerge.

17. See, e.g., Kenneth Abraham & Glen Robinson, *Aggregative Valuation of Mass Tort Claims*, *LAW & CONTEMP. PROBS.*, Autumn 1990, at 137, 141, 146-47 (1990) (proposing use of statistical claims profiles as evidence in mass tort cases and suggesting use of presumptions and rules allocating burden of proof to discourage individual claimants from claiming more damages than profile permits).

18. Statistical significance turns on p-value, which essentially describes the frequency that exposure would be associated with a symptom as a matter of chance (without playing a causal role). Usually epidemiologists require a p-value of .05 or better, meaning that chance would explain observed symptoms only 5% of the time. Confidence interval describes the range in which the mean of a study parameter is found, and conventionally epidemiologists set a confidence interval of 95% (for that or any other selected confidence interval, a large sample produces more persuasive results than a small one). See generally Troyen A. Brennan, *Causal Chains and Statistical Links: The Role of Scientific Uncertainty in Hazardous-Substance Liti-*

claimant become sick from exposure?); and (4) possibilities of multiple or synergistic causation appear (did asbestos cause lung cancer, or was smoking the cause, or both?).¹⁹

From a related perspective, these difficulties stem from differences between the cultures of science and law. Epidemiologists think of cause as statistical correlation and focus on groups, with the aim of identifying risk or developing treatment or strategies to minimize risk. Tort law faces questions of individual causation, and lawyers and judges tend to see causation as a chain of events, with the purpose of determining legal responsibility and furthering the aims of compensation and deterrence.

From another perspective, the difficulties are structural. Should tort law be the mechanism for compensating victims of toxic torts, or should insurance programs (first-party or public coverage) perform the function? Should special agencies resolve claims, or should they be litigated in common law courts?

From yet another perspective, the difficulties are procedural and substantive rather than evidential. Should tort law compensate for increased risk where physical injury is not yet manifest? Can tort law appropriately regulate risk and deliver compensation in toxic tort cases? Should claimants be compelled or encouraged to litigate in collective suits, with liability determined on the basis of aggregate information and compensation based on damage schedules? On these issues, we still have neither answer nor consensus,²⁰ although asbestos and other toxic tort litigation has already spawned extraordinary procedural innovation,

gation, 73 CORNELL L. REV. 469, 505, 510-11 (1988) (defining p-value and explaining confidence intervals).

19. See generally the useful and readable account by Troyen A. Brennan, *Helping Courts with Toxic Torts: Some Proposals Regarding Alternative Methods for Presenting and Assessing Scientific Evidence in Common Law Courts*, 51 U. PITT. L. REV. 1 (1989) (discussing need to aid courts in understanding complex scientific evidence).

20. For the classic argument that courts should award collective relief in toxic tort cases, basing liability findings on statistical proof and awarding scheduled damages, see David Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 851, 908-24 (1984). But see the strenuous rebuttals in Richard A. Epstein, *The Consolidation of Complex Litigation: A Critical Evaluation of the ALI Proposal*, 10 J.L. & COM. 1, 5-33 (1990); Richard A. Epstein, *The Legal and Insurance Dynamics of Mass Tort Litigation*, 13 J. LEGAL STUD. 475, 479-506 (1984); Peter Huber, *Safety and the Second Best: The Hazards of Public Risk Management in the Courts*, 85 COLUM. L. REV. 277, 319-20, 331-35 (1985). See generally George L. Priest, *The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law*, 14 J. LEGAL STUD. 461 (1985) (discussing historical development of enterprise liability theory and its judicial acceptance in 1960s).

elaborate claim resolution mechanisms and other bureaucratic mechanisms to pay claims.²¹

A. *An Evidence Dilemma*

Nobody can be confident that we are on the verge of answering these questions. Courts continue to entertain toxic tort suits, and the causation issue has an evidential dimension that cannot be avoided. Unfortunately evidence law speaks to this issue only vaguely and not very usefully.

It is well known that standard doctrine often condemns statistical proof, either for demonstrable misuse or more generally in "blue bus" cases because such evidence is considered inferior to particularized proof and likely to mislead.²² On the other hand, statistical proof is admitted in discrimination and paternity suits and recognized as the basis of forensic testimony in criminal cases.²³ Such proof has been admitted in collective toxic tort suits like *In re Agent Orange Product Liability Litigation*,²⁴ and courts seem ready to admit it in individual toxic tort suits. However, it is at least open to doubt in both settings that evidence of this sort can carry the day without individualized proof of causation.²⁵

Evidence law also has something to say on the admissibility of expert testimony. Federal Rules of Evidence 702 and 703 set up open-textured standards that say essentially that experts can testify if qualified, if

21. See Samuel Issacharoff, *Administering Damage Awards in Mass-Tort Litigation*, 10 REV. LITIG. 463, 470-87 (1991); Jack Ratliff, *Special Master's Report*, in *Cimino v. Raymark Industries, Inc.*, 10 REV. LITIG. 521, 528-35 (1991); Symposium, *Claims Resolution Facilities and the Mass Settlement of Mass Torts*, LAW & CONTEMP. PROBS., Autumn 1990, at 1, 1 (Frances E. McGovern ed.; collecting articles on point).

22. See the notorious case of *State v. Collins*, 68 Cal. 2d 319, 438 P.2d 33, 66 Cal. Rptr. 497 (1968), wherein a prosecutor misused the product rule to try to demonstrate guilt. "Blue bus" problems arise when a claimant tries to prove, for example, that an instrumentality operated or produced by the defendant caused the injury because most observed instrumentalities in the area were operated or produced by the defendant. See *Guenther v. Armstrong Rubber Co.*, 406 F.2d 1315, 1317-18 (3d Cir. 1969); *Smith v. Rapid Transit*, 58 N.E.2d 754, 755 (Mass. 1945).

23. See, e.g., *Casteneda v. Partida*, 430 U.S. 482 (1977) (statistical evidence made prima facie case of discrimination in selection of grand juries); *Plemel v. Walter*, 735 P.2d 1209 (Or. 1987) (paternity index).

24. 597 F. Supp. 740 (E.D.N.Y. 1984) (lengthy examination of epidemiological proof in approving settlement of class action), *aff'd*, 818 F.2d 145 (2d Cir. 1987), *cert. denied*, 484 U.S. 1004 (1988).

25. See generally Steve Gold, Note, *Causation in Toxic Torts: Problems of Proof, Standards of Persuasion, and Statistical Evidence*, 96 YALE L.J. 376 (1986) (discussing issues of statistical proof and causation in toxic tort litigation).

what they have to say is helpful²⁶ and if they rely on information that their peers would rely on.²⁷ However, fifteen years after adoption of the Rules, it remains unclear whether the Rules endorse the old *Frye* standard that asks whether the underlying method and theory the expert used to arrive at a conclusion has attained a level of general acceptance in the scientific community; or whether the Rules abandon *Frye* in favor of a stricter, particularized assessment of expert testimony, or loosen *Frye* and therefore pave the way for such evidence *and* other proof that seems promising although not yet generally accepted.²⁸ One scholar has argued that the helpfulness criterion of Federal Rule of Evidence 702 requires courts to pass on the soundness of underlying theories, while the reasonable reliance criterion of Federal Rule of Evidence 703 applies to the data that informs expert opinion,²⁹ although this analysis leaves it unclear whether courts are to determine whether the method or theory is sound and, if so, by what criterion.

In this climate of uncertainty, courts conflict on fundamental points, like whether epidemiological evidence is critical in proving toxicity;³⁰

26. FED. R. EVID. 702 (witness qualified as expert may testify as to "scientific, technical, or other specialized knowledge [if it] will assist the trier of fact to understand the evidence or to determine a fact in issue").

27. FED. R. EVID. 703 (experts may base opinions on facts or data reasonably relied on by other experts in same field). Experts may also rely on first hand perceptions or may draw upon facts or information admitted at the hearing in which they are testifying. GLEN WEISSENERBERGER, *FEDERAL RULES OF EVIDENCE: RULES, LEGISLATIVE HISTORY, COMMENTARY AND AUTHORITY* § 703.1, at 303 (1987).

28. The *Frye* standard came from *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). For an argument that Federal Rules of Evidence 703 and 705 abandon any form of categorical standard in favor of individualized assessments of expert testimony, see Margaret A. Berger, *United States v. Scop: The Common-Law Approach to an Expert's Opinion About a Witness's Credibility Still Does Not Work*, 55 BROOK. L. REV. 559, 565-69, 588-89 (1989). But in 1991 the Fifth Circuit held, in an en banc decision, that scientific testimony on the issue of toxic causation must satisfy the *Frye* standard and that a court may properly reject testimony that it believes other experts in the field would not find convincing. See *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106, 1113-15 (5th Cir. 1991) (incorporating *Frye* standard in FED. R. EVID. 703 and approving award of summary judgment for defendant in case alleging that toxic fumes caused cancer, in part because plaintiff's physician relied on facts and data that were critically inaccurate and incomplete, as measured by what other experts would rely on; per curiam opinion with 13 participating judges; Judge Clark concurring in result, relying on FED. R. EVID. 403; four others join in separate dissenting opinions by Judges Reavely and King). For a modern attempt to modify the *Frye* standard by looking at reliability, "fit" and risk of prejudice or confusion, see *United States v. Downing*, 753 F.2d 1224, 1226 (3d Cir. 1985).

29. See Edward J. Imwinkelried, *The "Bases" of Expert Testimony: The Syllogistic Structure of Scientific Testimony*, 67 N.C. L. REV. 1, 13-19 (1988).

30. *Compare In re Agent Orange Prod. Liab. Litig.*, 611 F. Supp. 1223, 1250 (E.D.N.Y. 1985) (relying heavily on epidemiological evidence, rejecting animal models, criticizing claimants for failing to offer proof by examining physicians), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied*, 487 U.S. 1234 (1988) with *Ferebee v. Chevron Chem. Co.*, 736 F.2d 1529, 1535-36

whether the opinion of a treating physician on toxicity should suffice to prove causation where the physician is not an expert in toxicology and the diagnosis is highly controversial;³¹ whether experts testifying on the basis of experimental data may depart from conclusions reached by those who originally gathered the data;³² whether bioassays or animal studies can support an inference of cause;³³ and whether courts should require epidemiological evidence to attain the levels of statistical significance and confidence intervals that scientists would require.³⁴

B. How Can We Solve These Problems?

Almost certainly, some problems can be resolved through common law evolution or reform of the Rules. A pending reform proposal *would* address the matter of a standard for scientific evidence, and the apparent intent is to adopt a modified *Frye* standard in which scientific evidence would need "significant support and acceptance within the scientific community."³⁵ Surely this reform is a step forward in at least *addressing* a basic question, and the strength in the proposal is that it would require *some* external validation before scientific evidence would be admissible.

(D.C. Cir.) (causation need not be proved by epidemiological or animal studies; tissue samples, standard tests and testimony by examining physician suffice), *cert. denied*, 469 U.S. 1062 (1984).

31. See *In re Agent Orange*, 611 F. Supp. at 1247 (criticizing claimants for failing to offer proof by examining physicians).

32. Compare *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823 (D.C. Cir. 1988) (experts should not use epidemiological data to reach conclusions that differ from those reached by people who gathered data), *cert. denied*, 493 U.S. 882 (1989) and *Lynch v. Merrell-National Lab.*, 830 F.2d 1190 (1st Cir. 1987) (denying use of expert testimony regarding birth defects caused by Bendectin "in the absence of any confirmatory epidemiological data") with *DeLuca v. Merrell Dow Pharmaceuticals, Inc.*, 911 F.2d 941 (3d Cir. 1990) (approving meta-analysis that uses data gathered in several studies to reach conclusions that differ from those reached in original studies).

33. See *In re Agent Orange*, 611 F. Supp. at 1234, 1238 (rejecting animal models).

34. Compare *Brock v. Merrell Dow Pharmaceuticals, Inc.*, 874 F.2d 307, *modified*, 884 F.2d 166 (5th Cir.) (statistical proof may be admitted even if it does not satisfy usual standard of significance, but it may not suffice to carry day), *cert. denied*, 110 S. Ct. 1511 (1990) with *In re Paoli R.R. Yard PCB Litig.*, 916 F.2d 829 (3d Cir. 1990) (questioning whether usual .05 level of significance should be required before statistical evidence may be admitted), *cert. denied*, 111 S. Ct. 1584 (1991).

35. Pending changes to Federal Rules of Evidence 702 and 703 can be read as setting a test or standard. As revised, Rule 702 would add a requirement that "information" provided by expert testimony be "reasonably reliable" and would modify the helpfulness criterion by requiring that such information "substantially assist" the fact finder. The accompanying Advisory Committee's note provides that the committee does not intend to "return" to the *Frye* standard, but that a court should "reject testimony that is based upon premises lacking any significant support and acceptance within the scientific community or that otherwise would be only marginally helpful." *Preliminary Draft of Proposed Amendments to the Federal Rules of Civil Procedure and the Federal Rules of Evidence*, 137 F.R.D. 53, 157 (1991).

Arguably the proposal miscasts the balance (it would be better to put directly to courts the question of scientific validity, to be decided like other issues on the basis of testimony), but requiring external validation is realistic in recognizing that judges are not scientists and not well situated to make independent scientific judgments.³⁶

But no general standard or test can show courts how to resolve causation issues at the frontiers of understanding, and the cases show courts are struggling even to find an approach. Courts need help that evidence law cannot provide. Proposals for science courts have gotten nowhere, perhaps because they require legislation that Congress is not prepared to enact, perhaps because it is understood that science alone cannot answer questions with legal and political dimensions.³⁷ Intermediate proposals for mechanisms to bring science into the courtroom, such as science advisory panels and education for judges, merit serious consideration despite the problems to be expected in merging such mechanisms into an adversary system.³⁸ Also needed is some insight on the underlying logic of scientific standards of statistical proof.³⁹

If scientists require high significance levels and narrow confidence intervals (high confidence) as a margin of safety because they doubt their capacity to anticipate and control variables, perhaps the scientific and legal standard should be the same—the practice of scientists is a good guide to the reliability of statistical data. To the extent scientists observe strict standards because they have time to refine approaches or pursue other avenues of approach, and need not resolve some particular question in order to move forward, perhaps courts are justified in making do with less.

It has been argued that if a physician would prescribe treatment in the belief that he knows the cause of an ailment, a court should treat the physician's opinion as good enough to prove cause.⁴⁰ Yet doctors treat

36. See, e.g., Richard O. Lempert, *Social Science in Court: On "Eyewitness Experts" and Other Issues*, 10 LAW & HUM. BEHAV. 167, 175 (1986) (if psychologists do not agree on value of their insights, "how can a psychologically naive judge, whose primary task is to resolve the case in front of him, be expected to value it properly?").

37. See, e.g., Sheldon R. Trubatch, *Informed Judicial Decisionmaking: A Suggestion for a Judicial Office for Understanding Science and Technology*, 10 COLUM. J. ENVTL. L. 255 (1985).

38. See Brennan, *supra* note 19, at 10.

39. See David H. Kaye, *Statistical Significance and the Burden of Persuasion*, LAW & CONTEMP. PROBS., Autumn 1983, at 13, 20-23; Glen O. Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases*, 68 VA. L. REV. 713, 749-67 (1982); Richard W. Wright, *Causation in Tort Law*, 73 CAL. L. REV. 1737, 1821-26 (1985).

40. See Charles Nesson, *Agent Orange Meets the Blue Bus: Factfinding at the Frontier of Knowledge*, 66 B.U. L. REV. 521, 529 (1986) (investigative scientists are likely "to suspend

suspected cancers and other ailments without understanding clinical cause, and even the certainty of one physician with one patient seems inadequate as a basis to impose thousandfold liability for a thousand claimants if toxicological evidence of other sorts cannot be had. The quest to adapt scientific methods and standards to toxic tort litigation is still in an embryonic stage. Few mass toxic tort cases have been actually *tried on any* issue, and most lead to settlements, perhaps because the parties themselves fear that trials and evidence rules cannot be depended upon to achieve good results. But evidence issues will not likely be avoided forever, and courts need technical help that neither experience nor refinement of doctrine can provide.

III. CHILD ABUSE PROSECUTIONS

The issues in child abuse prosecutions are hard for obvious reasons: the charged misconduct is repellent and tragic; the cost of a mistaken verdict seems high; the cases pit child against parent or guardian and parents or guardians against each other; there are few witnesses with firsthand knowledge; and there are few disinterested witnesses.

A. Hearsay

The hearsay challenge comes from the fact that remote statements by the child often say what happened and who did it and seem probative on central points. Remote statements may be critical if the child is too young to testify, is traumatized by the courtroom setting or the accused, and where clinical evidence is inconclusive or other evidence is lacking. Also remote statements vary widely, sometimes coming shortly after the event when the child speaks to family members, social service people, friends, police or doctors and sometimes coming much later during interviews with professional psychologists, where a picture of abuse emerges only slowly. Remote statements may also be hard to appraise because the alleged abuse is the focal point of a dispute between adults generating pressures on the child, or because the suspect is a parent and a crucial figure in the child's life.

B. Expert Testimony

The challenge of expert testimony comes from its use to present accounts of "Child Sexual Abuse Syndrome" (patterns of behavior in victims), which can then be compared with the behavior of a particular

judgment" while awaiting further proof in cases where doctor or lawyer "does not have the luxury of postponing decision").

child in trying to decide whether abuse occurred and whether the child should be believed.⁴¹ Courts differ in receptivity to such evidence, although much is admitted. Here are the points of greatest ongoing difficulty: Do lay fact finders need expert assistance in understanding the phenomenon of child abuse in order to make the necessary appraisals of behavior and credibility? Should experts be allowed not only to provide "framework" evidence but also make the invited comparison by testifying, on the basis of their knowledge or observation of the child, that abuse occurred (or did not) or the child is truthful (or not)? Oversimplifying, the prevailing answer to the first question is yes (expert "framework" testimony is needed and often admitted), and the prevailing answer to the second is no (commonly experts cannot testify that abuse occurred or a child is telling the truth).

C. Can Evidence Law Solve These Problems?

Modern courts have made a start. They often admit remote statements by children under exceptions for excited utterances and statements to physicians,⁴² and under catchall or rifle-shot child abuse exceptions turning on circumstantial trustworthiness.⁴³ And courts look to an array of factors that bear on reliability, including age-appropriate language, display of knowledge not likely to exist unless abuse occurred, apparent spontaneity, repetition, absence of leading questions, corroborating phys-

41. See David McCord, *Syndromes, Profiles, and Other Mental Exotica: A New Approach to the Admissibility of Nontraditional Psychological Evidence in Criminal Cases*, 66 OR. L. REV. 19, 41-42 (1987); David McCord, *Expert Psychological Testimony About Child Complainants in Sexual Abuse Prosecutions: A Foray into the Admissibility of Novel Psychological Evidence*, 77 J. CRIM. L. & CRIMINOLOGY 1 (1986); Robert P. Mosteller, *Legal Doctrines Governing the Admissibility of Expert Testimony Concerning Social Framework Evidence*, LAW & CONTEMP. PROBS., Autumn 1989, at 85, 112-20. See generally Laurens Walker & John Monahan, *Social Facts: Scientific Methodology as Legal Precedent*, 76 CAL. L. REV. 877 (1988) (examining use of social science research data to prove contested facts in judicial proceeding); Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 VA. L. REV. 559 (1987) (application of social science research to sexual abuse cases does not concern legislative or adjudicative fact but creates "framework" to determine facts).

42. *Morgan v. Foretich*, 846 F.2d 941, 946-47, 949 (4th Cir. 1988) (child's statements to psychologist within exceptions for excited utterance and statements to physicians); *United States v. Renville*, 779 F.2d 430, 438-39 (8th Cir. 1985) (child's statements to treating physician properly admitted under exception for statements to physicians); *Haggins v. Warden*, 715 F.2d 1050, 1057-58 (6th Cir. 1983) (statements by four-year-old victim to police properly admitted as excited utterance), *cert. denied*, 464 U.S. 1071 (1984).

43. *United States v. St. John*, 851 F.2d 1096, 1098-99 (8th Cir. 1988) (statements by ten-year-old boy to clinical psychologist); *United States v. Dorian*, 803 F.2d 1439, 1444-45 (8th Cir. 1986) (statements by five-year-old girl to foster mother and social worker).

ical evidence, the presence or absence of wider disputes among caretakers and closeness in time to the event.⁴⁴

Remote statements remain problematic, however, and cases relying on factors like excitement and concern over treatment do not inspire confidence. The courts' modern confrontation jurisprudence, while cautiously flexible in allowing alternatives to live courtroom testimony by children, has not extended to the catchall exceptions the categorical endorsement that traditional exceptions enjoy, and requires instead a case by case scrutiny for trustworthiness, with no credit for independent corroboration.⁴⁵ Presumably the same scrutiny is required of rifle-shot child abuse exceptions that follow catchall exceptions in referring directly to "trustworthiness" or "reliability" as the principal criteria.

Do experience and common law evolution promise growing wisdom in this area? Such faith underlies many codified categorical exceptions that largely embody common law tradition, and reliance on judges seems essential. And in this setting the faith seems justified—judicial experience should increase understanding, and the instinct of trial judges overseen by deferential reviewing courts deserves respect. There is little reason to suppose the expertise of psychologists or therapists can help much. In toxic tort cases, proportional or classwide relief "based on the numbers" is at least plausible. However, the question in prosecutions for child abuse is inescapably singular, so what may be true in the run of cases cannot decide a particular case, and there is no reason to suppose experts can better assess the credibility of particular children than lay fact finders.

44. See *Idaho v. Wright*, 110 S. Ct. 3139, 3150 (1990) (listing spontaneity, repetition, mental state of declarant, use of terminology unexpected for child of similar age, lack of motive to fabricate).

45. Compare *Maryland v. Craig*, 110 S. Ct. 3157, 3166-67 (1990) (on specific finding of trauma, court properly allowed child to testify from another room, viewed from video monitor in court) with *Wright*, 110 S. Ct. at 3149-50 (constitutional error to admit child's incriminating statement under catchall exception, which is not "firmly rooted" for purposes of Confrontation Clause; in assessing reliability, court cannot consider corroborating evidence). In 1992, however, the Supreme Court upheld the use against an accused of five statements by a child describing an instance of abuse and identifying the defendant as the abuser. The decision, at a minimum, stands for the proposition that statements satisfying the exceptions for excited utterances and for statements made in the course of receiving medical treatment may be admitted without showing that the speaker is unavailable. The decision may even stand for the broader proposition that unavailability is never required by the Constitution unless, perhaps, it is required by the hearsay doctrine. See *White v. Illinois*, 112 S. Ct. 736 (1992) (statements by four-year-old girl to babysitter, mother and police investigator admissible as excited utterances; statements to nurse and treating physician admissible under medical treatment exception; defendant was outsider to household and child named him in all but statement to nurse, which didn't mention name; all five statements described abuse).

The judicial unease visible in the cases is understandable because the problem is truly difficult. While the accumulation of outcomes in parallel cases can tell much about the soundness of *substantive* doctrine, ongoing experience may be less revealing of the wisdom of admitting or excluding hearsay. Lacking knowledge whether a particular case or run of cases correctly found the facts, courts would be right to wonder whether a particular ruling admitting or excluding remote statements by children represents wisdom, and whether, if one case weighs in on a particular kind of hearsay, the resultant line of authority is sound.

On the wisdom of expert "framework" testimony, evidence law needs further help from social science. One supposition underlying such testimony is that lay fact finders know little about child abuse and do not understand child victims, but little is actually known about the level of general public understanding. An important premise underlying such testimony is that experts not only understand the behavior of child victims of abuse but can distinguish between the behavior of such victims and the behavior of children troubled for other reasons, which is less than certain.⁴⁶ Another is that fact finders can take a short lesson on the subject, thereby developing insights that help them evaluate the evidence, while remaining responsible and independent in performing these tasks. But we have little information that lay fact finders can grow and perform in this way.⁴⁷

Absent empirical data on public understanding and the capacity of fact finders to grow in understanding while retaining their independence, the course charted by modern courts seems appropriately cautious. Probably typical fact finders *do* know and understand the *phenomenon* of child abuse in somewhat the same way they understand drug trafficking and murder (where experts do testify on the jargon of drug traffickers and organizational patterns of drug traders, which is similar to framework evidence), but it is likely they have little feel for reactions and behavior of child victims after the fact, and evidence on this point should help understanding. In shrinking from expert psychological testimony

46. Compare John E. B. Meyers et al., *Expert Testimony in Child Sexual Abuse Litigation*, 68 NEB. L. REV. 1, 52-62, 77 (1989) (experts can often determine "with reasonable clinical certainty" whether abuse has occurred) with Josephine Bulkley, *Legal Proceedings, Reforms, and Emerging Issues in Child Sexual Abuse Cases*, 6 BEHAV. SCI. & L. 153, 179 (1988) (no reliable test or method to determine abuse).

47. At least one California decision insists that proponents of framework evidence in child abuse cases explain the risk of misunderstanding that framework would correct and give a cautionary instruction to the jury that it remains the judge of the issues. See *People v. Leon*, 263 Cal. Rptr. 77 (1989), *reh'g denied and order depublished*, No. S012979, 1990 Cal. LEXIS 158, at *1 (Jan. 18, 1990).

that a particular child was abused or should be believed in what he says, courts also seem wise in concluding that expertise on the general subject does not qualify even professional observers to tell lay fact finders whom to believe or what inferences to draw from the evidence.

IV. CONCLUSION

Courts need help that neither evidence doctrine nor experience is likely to provide in the area of toxic tort litigation. Absent some resolution of structural, substantive and procedural issues that relieves courts of the responsibility to resolve toxic causation problems, courts need more science and a better understanding of the relationship of legal and scientific standards.

In child abuse prosecutions, science is less likely to have solutions because the issues are inescapably singular and less accessible to statistical resolution. Hearsay issues are being addressed in the manner typical of common law evolution, and there is reason for some optimism that courts can resolve them. Social framework evidence describing Abused Child Syndrome may be of some use, but it too can do little to resolve particular controversies. In sum, we badly need meta-evidence in toxic tort cases, in the form of help from outside the legal profession. In child abuse prosecutions we need it less. There, outside help is useful, but only in limited ways, and progress is more likely to come from experience and doctrinal evolution.

