Admissibility Standards as Politics—The Imperial Gate Closers Arrive!!!

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INTRODUCTION

Over the last ten years, practitioners in the field of environmental or toxic torts have witnessed an unprecedented sea change in the application of federal evidentiary rules pertaining to the admission of expert witness testimony. "Scientific," "technical," or other "specialized"[1] expert evidence has become an indispensable element of an injured plaintiff's proof of causation. Experts with skills in these areas are frequently called upon to draw inferences and formulate opinions based on data derived from tests, models and peer publications "reasonably relied upon by experts in the particular field"[2] in order to establish a party's claims. Imposing a restrictive standard to the admissibility of such expert evidence seriously jeopardizes the adversary process by upsetting the balance of power between the judiciary and the jury.

Often a toxic tort plaintiff's claims may rest, in whole or in part, on novel scientific theories which have the power to affect hundreds or even thousands of people beyond the individual litigants.[3] As a result, a judicial decision to exclude expert testimony from a jury's purview not only deprives that specific plaintiff of warranted compensation, but has the potential to discourage similarly situated individuals from seeking a judicial remedy for their injuries.[4] More importantly, the absence of corrective action taken as a result of the litigation may act to "encourage the continued use of a dangerous substance."[5]

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[1] This paper uses the terms "scientific," "technical," or "other specialized knowledge" consistent with FED. R. EVID. 702.

[2] FED. R. EVID. 703 advisory committee's note.

[3] *See* David Bernstein, Comment, *Out of the* Frye*ing Pan and into the Fire: The Expert Witness Problem in Toxic Tort Litigation*, 10 REV. LITIG. 117, 118 (1990).

[4] *Id.*

[5] *See* REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 3-4 (2d ed. 2000).

A trial judge's desire to ban "junk" science from the courtroom[6] is balanced against a plaintiff's possible need to introduce novel scientific expert testimony. This is not to suggest that "junk" science has an appropriate role to play before a jury. The real issue is determining what junk science is, especially during an era of constantly evolving scientific developments. Remember, it was not too long ago that the public was led to believe that cigarettes were a harmless diversion.[7] Arguments were made that research linking cigarettes to lung cancer were "junk." Similarly, how could asbestos, the "miracle product" of the twenties and thirties, be anything but a benefit to the world? It was not until the late seventies that the world learned that this "miracle product" was lethal in dust form.[8] Again, early studies into the diseases mesothelioma and asbestosis would have been labeled "junk" science by today's standards.

To preserve the character of the adversary system, some commentators have suggested that court-appointed experts be employed to aid trial judges with little or no scientific background to distinguish "junk" science from valid scientific theories and methodologies. This is especially useful for theories that may have not yet been subject to "peer review" or are not yet "generally accepted" simply as a result of their novelty.[9] Practically, court-appointed experts are not necessarily neutral third parties capable of distancing themselves from subtle influences arising from their association with courts or judges.

One suggestion may be to more thoroughly educate trial judges on the peculiar causation problems faced by toxic tort plaintiffs since strict application of the *Daubert* factors inevitably renders most

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[6] Peter Huber popularized the controversial term "junk science." S*ee generally* PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991). *See also* Kenneth J. Chesebro, *Peter Huber's Junk Scholarship*, 42 AM. U. L. REV. 1637 (1993) (challenging Huber's account of "junk science"); Bert Black et al., *Science and the Law in the Wake of* Daubert*: A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 719-21, 748-49 (1994).

[7] Anne M. Payne, Annotation, *Products Liability: Cigarettes and Other Tobacco Products*, 35 A.L.R.5th 541 (1996).

[8] S. Charles Neill, Comment, *The Tower of Babel Revisited: The U.S. Supreme Court Decertifies One of the Largest Mass Tort Classes in History*, 37 WASHBURN L.J. 793, 798-99 (1998).

[9] Judith A. Hasko, Note, Daubert v. Merrell Dow Pharmaceuticals, Inc.*: Flexible Judicial Screening of Scientific Evidence Under Federal Rule of Evidence 702*, 1995 WIS. L. REV. 479, 501-04 (drawing on *Daubert* discretionary factors of "peer review" and "generally accepted" in discussing judges' need to familiarize themselves with scientific principles in order to decide preliminary questions on admissibility of experts).

causation evidence proffered by plaintiffs inadmissible.[10] Furthermore, as set forth *infra*, a trial judge's decision on the admissibility of expert causation evidence may effectively result in dismissal of a plaintiff's claims without getting to the merits. This result places trial judges in the role of "gate-closers" as opposed to "gate-keepers."

I. THE UNIQUE CAUSATION BURDENS FACING A TOXIC TORT PLAINTIFF

As referred to briefly above, extensive studies and research conducted by the scientific community conducted over the last fifty years have demonstrated to the world that many products people commonly come into contact with are actually harmful or even deadly.[11] In addition to asbestos and cigarettes, other such products include lead, Bendectin, DES and Thalidomicide, Agent Orange, formaldehyde, pesticides, herbicides, and benzene.[12] Many of these toxins became the subject of civil lawsuits brought by persons exposed to these substances who were suffering from chronic illnesses or diseases, or the families of those who had died as a result of their exposure.[13]

A "toxic tort" is a personal injury or related harm attributable to a plaintiff's exposure to a toxic substance.[14] The plaintiff's exposure

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[10] *See* Laurie Alberts, *Causation in Toxic Tort Litigation: "Which Way Do We Go, Judge?"*, 12 VILL. ENVTL. L.J. 33, 61 (2001).

[11] Examples include the studies of Louis Lewin, a German toxicologist, on the chronic toxicity of narcotics and other alkoids; research done by E.M. Geilling which explained the mechanism of toxicity for sulfanilamide and ethylene (chemicals which had previously been used in medications to treat various bacterial diseases, but resulted in several deaths from renal failure); the discovery that DDT and phenoxy herbicides, originally used as agricultural poisons or pesticides had the potential to kill or significantly injure humans; the revelation that the drug Thalidomide taken during pregnancy resulted in grotesque deformities to children borne by mothers who ingested the substance. By the mid-nineties, there were more than 120 scholarly journals devoted to toxicology, risk assessment, risk management, and other related fields. *See* Christopher H. Buckley Jr. & Charley H. Haake, *Separating the Scientist's Wheat From the Charlatan's Chaff:* Daubert's *Role in Toxic Tort Litigation*, 28 ENVTL. L. REP. 10293 (1998).

[12] M. Neil Browne et al., *The Epistemological Role of Expert Witnesses and Toxic Torts*, 36 AM. BUS. L.J. 1, 2 n.14 (1998).

[13] *See, e.g.*, Dart Industries, Inc. v. Commercial Union Insurance Company, 52 P.3d 79, 83 (Cal. 2002).

[14] Dorothea M. Capone, *The Unique Causation Burdens Facing the Toxic Tort Plaintiff - An Argument for Application of the Substantial Factor Test*, 17 N.Y. ENVTL. LAW. 22 (1997); *see also* Christopher L. Callahan, *Establishment of Causation in Toxic Tort Litigation, Symposium on Toxic Substances and Hazardous Waste*, 23 ARIZ. ST. L.J. 605 (1991).

can rarely be attributed to a single exposure event, but more typically arises out of chronic and repeated exposures.[15] The injury suffered by the plaintiff is ordinarily not traumatic, but instead, may develop slowly over several decades following the exposure.[16] Evidence may not be immediately apparent.[17] Rather, the injury may be in the form of a syndrome, or a terminal disease which remains latent and undetected for many years.[18] Even more rare is a toxic exposure unequivocally linked to a particular disease or illness in the way mesothelioma has been conclusively traced to asbestos exposure, or angiosarcoma's undeniable link to vinyl chloride. Unlike these illnesses, many cancers and diseases do not manifest themselves with any physical evidence of their causative agents.[19] Add to these problems an individual's physical idiosyncrasies, genetic make-up, and personal medical history and one can see how it may be virtually impossible for a plaintiff to establish causation for their injuries to a certainty.[20]

To hold a negligent tortfeasor liable for damages, a plaintiff must establish the following four traditional elements of negligence: (1) a legal duty or obligation; (2) a breach of that duty; (3) a proximate cause connection between the breach and the plaintiff's injury; and (4) an actual loss or injury to the plaintiff.[21] Tort law requires a court to find both cause-in-fact and proximate cause before imposing liability on a defendant.[22] A plaintiff can generally

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[15] David Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 849, 855-56 (1984).

[16] Paul K. Sidorenko, *Evidentiary Dilemmas in Establishing Causation: Are Courts Capable of Adjudicating Toxic Torts?*, 7 COOLEY L. REV. 441, 444 (1990). *See, e.g.*, Jackson v. Johns-Manville Sales Corp., 727 F.2d 506, 517-19 (5th Cir. 1984), *cert. denied*, 478 U.S. 1022 (1986) (discussing problems associated with latent manifestation of toxic injuries). *See also* Ayers v. Township of Jackson, 106 N.J. 557, 585, 525 A.2d 287, 301 (1987) (extended latency period is frequently referred to as one of the primary difficulties encountered by plaintiffs trying to provide causation in a toxic tort action).

[17] Neill, *supra* note 8, at 799.

[18] Patricia E. Lin, *Opening the Gates to Scientific Evidence in Toxic Exposure Cases: Medical Monitoring and* Daubert, 17 REV. LITIG. 551, 552 (1998) (discussing the nature of toxic torts); *see also* Steve Gold, Note, *Causation in Toxic Torts: Burdens of Proof, Standards of Persuasion, and Statistical Evidence*, 96 YALE L.J. 376 (1986).

[19] Gold, *supra* note 18, at 379.

[20] *Id.*; *see also* Browne et al., *supra* note 12, at 3 (causation cannot be established to certainty); Garner v. Hecla Mining Co., 431 P.2d 794 (1967) (plaintiff failed to conclusively demonstrate that uranium mining caused her decedent's cancer, even though higher than average rate of cancer existed among uranium miners).

[21] W. PROSSER ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 30, at 164-65 (5th ed. 1984).

[22] *Id.* § 41 at 263.

satisfy the law's cause-in-fact requirement by proving that "but for" the defendant's conduct, the plaintiff would not have been injured.[23] The proximate cause prong of a plaintiff's claim can be satisfied when a sufficient link is established between the tortfeasor's negligent conduct and the plaintiff's injury so as to justify the imposition of liability on that defendant.[24]

Following this relatively simple analysis, it is apparent that requiring a toxic tort plaintiff who suffered serious injury or death after exposure to a toxin to establish "but for" certainty under traditional causation standards is neither fair nor practical, since there is likely to be little or no direct evidence of causation. To demonstrate a causal link between his or her injury and the toxic substance within a defendant's control, a toxic tort plaintiff is forced to rely on indirect evidence and the opinions of experts in such fields as epidemiology and toxicology.[25]

Rather than applying the rigid "but for" analysis in a toxic tort action, it is more appropriate, and certainly more equitable, for a court to determine "whether a reasonable link exists between a plaintiff's injur[y] and the defendant's conduct" such that the court may impose liability on the defendant.[26] This approach was first suggested in a toxic tort context by the United States District Court for the District of Utah in *Allen v. United States*.[27] The trial judge in *Allen* argued that in order to satisfy public policy concerns underlying the tort doctrine, prior to a finding on the issues of duty or breach, the toxic tort plaintiff should only be required to establish that there was a "factual connection" between the injury suffered and the defendant's conduct.[28] If the plaintiff can prove the defendant engaged in conduct which created a risk of injury, and if the plaintiff's injuries are consistent with that risk, a seemingly exclusive factual connection has been created sufficient to hold the defendant

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[23] *Id.* at 265-66.

[24] *See* Derdiarian v. Felix Contr. Corp., 51 N.Y.2d 308, 314-15 (1980) (stating that a case can go to the jury only after a court has determined that proximate cause exists).

[25] *See* Capone, *supra* note 14, at 23; *see also* Palma J. Strand, *The Inapplicability of Traditional Tort Analysis to Environmental Risks: The Example of Toxic Waste Pollution Victim Compensation*, 35 STAN L. REV. 575, 577 (1983).

[26] *See* Capone, *supra* note 14, at 23.

[27] 588 F. Supp. 247 (D. Utah 1984).

[28] *Id.* at 404-05; *see also* E. Wayne Thode, *Tort Analysis Duty-Risk v. Proximate Cause and the Rational Allocation of Functions Between Judge and Jury*, 1977 UTAH L. REV. 5 ("[I]f plaintiff cannot establish a cause-in-fact that will support liability . . . plaintiff should attempt to establish the most exclusive factual connection that he can between his injury and the defendant.").

responsible for the plaintiff's injuries.[29]

Moreover, while the "but for" rule is easily applied in simple tort negligence actions involving a single defendant, it fails miserably in situations where two or more forces join together and result in an injury to a plaintiff where either of them operating alone would have been sufficient to cause the plaintiff's injuries.[30] Under such a scenario, where the negligence of each of the actors prevents the other from being a "but-for" cause, some courts have recognized each actor's negligent act or omission to be a substantial factor in bringing about the plaintiff's injury, allowing each to be held responsible for the harm inflicted upon the plaintiff.[31]

Requiring a reasonable link between a plaintiff's injury and a defendant's negligent conduct allows a court to more carefully assess the particular facts and circumstances surrounding a complained-of exposure to determine whether it is reasonable to conclude that the defendant's behavior was a substantial factor in bringing about the plaintiff's injury. Applying this analysis, a plaintiff will be capable of establishing causation through the introduction of indirect and expert testimony. From a public policy perspective, substituting the substantial factor test for the rigid and seemingly insurmountable "but for" test makes it more likely that a negligent defendant will be held responsible for the harm, and future wrongful conduct will be deterred.[32]

II. THE SPECIAL NEED FOR EXPERT WITNESSES IN TOXIC TORT LITIGATION

An expert witness is a person, who by his or her knowledge, skill, experience or training in a specific area has acquired a specialized scientific, technical, or other specialized knowledge which may "assist the trier of fact to understand the evidence or to determine a fact in issue."[33] Because toxic tort litigation involves complex scientific issues, particularly with respect to causation, plaintiffs are required to rely on the testimony of experts to establish exposure to the toxic substance, describe the nature of the plaintiff's injury, and link the

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[29] Thode, *supra* note 28, at 6.

[30] PROSSER ET AL., *supra* note21, §41 at 266; *see also* Basko v. Sterling Drug, Inc., 416 F.2d 417, 429 (2d Cir. 1969) (stating that the use of but-for analysis where more than one likely cause exists is wholly inadequate).

[31] *See* Rory A. Valas, *Toxic* Palsgraf*: Proving Causation When the Link Between Conduct and Injury Appears Highly Extraordinary*, 18 B.C. ENVTL. AFF. L. REV. 775 (1991).

[32] *See* Capone, *supra* note 14, at 23.

[33] *See* FED. R. EVID. 702.

exposure to the injury.[34]

As stated previously, it may be practically impossible for a toxic tort plaintiff to demonstrate to a certainty that a particular substance caused his or her injury. However, the corollary may be just as true: it may be equally impossible for a defendant to establish that the particular substance did *not* cause the plaintiff's injury.[35] To overcome this obstacle, a plaintiff must turn to "probabilistic" evidence to establish causation.[36]

A court will require that a plaintiff establish two types of causation: general and specific.[37] Courts are in general agreement that "[g]eneral causation addresses whether products of the same nature as [a] defendant's products are capable of causing the type of injuries alleged . . . [while] specific causation addresses whether [a] defendant's product more likely than not caused injuries in the particular case."[38] Specific causation, therefore, requires a toxic tort plaintiff to prove by a preponderance of the evidence that the

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[34] McElveen, *The Use of Experts in Toxic Tort Litigation*, *in* TOXIC TORTS 532-35 (G. Nothstein ed., 1984).

[35] *See* Buckley & Haake, *supra* note 11 (discussing the significant role expert testimony plays in a toxic tort action).

[36] *See id.* (discussing the requirement that plaintiffs must use "probabilistic" evidence to establish causation).

[37] *See* Heller v. Shaw Indus. (*Heller I*), No. CIV.A.95-7657,1997 WL 535163 (E.D. Pa. Aug. 18, 1997) (Mem.) (discussing general and specific causation), *aff'd* 167 F.3d 146 (3d Cir. 1999). See also Buckley & Haake, *supra* note 11 (quoting Mancuso v. Consolidated Edison Co. of New York, Inc., 967 F. Supp. 1437, 1445-46 (S.D.N.Y. 1997), stating:

> [The causation method] requires first that the expert determine the dosage of the toxin at issue to which the plaintiff was exposed . . . . Second, the expert must establish "general causation" by demonstrating that, according to scientific literature, levels of the toxin comparable to those received by the plaintiff can cause the specific types of injuries he alleges . . . . Third, the expert must establish specific causation by demonstrating that, more likely than not, the toxic caused the plaintiff's injuries in a particular case.

See also Ellen Relkin, *The Sword or the Shield: Use of Commercial Regulations, Exposure Standards and Toxicological Data in Toxic Tort Litigation*, 6 DICK. J. ENVTL. L. & POL'Y 1, 2-3 (1997) (discussing general and specific causation and exposure levels of toxic substances).

[38] *See Heller I*, 1997 WL 535163 at *6 (Mem) (citing Rutigliano v. Valley Bus. Forms, 929 F. Supp. 779, 783 (D.N.J. 1996), *aff'd*, 118 F.3d 1577, 1997 U.S. App. LEXIS (3rd Cir. 1997)); Mascarenas v. Miles, Inc., 986 F. Supp. 582, 587-88 (W.D. Mo. 1997) (discussing causation requirements). *See generally* Wright v. Williamette Indus., Inc., 91 F.3d 1105, 1108 (8th Cir. 1996) (requiring proof of exposure to toxic substance at levels known to cause injuries); *In re* Paoli R.R. PCB Yard Litig., 916 F.2d 829, 833 (3d Cir. 1990) (requiring exposure as element in toxic tort case); Maddy v. Vulcan Materials Co., 737 F. Supp. 1528, 1533 (Kan. 1990) (discussing need for plaintiff to demonstrate she was exposed to harmful substance).

defendant permitted a toxic substance to be released, that the plaintiff was exposed to the released toxic substance, that an injury occurred, and the injury was caused by the toxic substance released by the defendant.[39] Taking this analysis to its logical conclusion, a toxic tort plaintiff must prove that he or she was exposed to toxins produced by the defendant at levels which exceed normal background levels, and that the duration and dosage of the exposure were at levels significantly likely to cause injury to humans.[40]

Probabilistic evidence includes both epidemiological and toxicological studies.[41] Toxicological studies rely on actual tests usually involving animals to determine a specific chemical's capacity to cause harm or injury.[42] Accordingly, since the results are extrapolated, toxicological tests may inaccurately report the toxin's effect on humans.[43] Additionally, since toxicological studies are generally performed under controlled laboratory conditions, it is virtually impossible to duplicate the exact environments where exposures might occur, especially in situations involving low level exposures over an extended period of time.[44]

Epidemiology is the study of incidence, determinants, distribution, and control of a disease within a population that focuses on the patterns and factors relating to a disease, rather than the actual cause.[45] Epidemiological studies can be an indispensable tool for a plaintiff trying to establish causation in the absence of direct or particularistic evidence.[46] These studies seek to demonstrate a strong

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[39] *See* Buckley & Haake, *supra* note 11 (outlining general and specific causation).

[40] *See Heller I*, 1997 WL 535163, at *6 (Mem) (citing Mateer v. U.S. Aluminum, No. CIV.A.88-2147, 1989 WL 60442, at *6 (E.D. Pa. June 6, 1989)).

[41] *See* Gold, *supra* note 18, at 384.

[42] *See* Pier et al., *Recognition and Evaluation of Hazards*, *in* TOXIC TORTS 2 (G. Nothstein ed., 1984). As of the late 1990s, there were approximately five million organic chemicals and five hundred thousand inorganic substances known to exist, with approximately ten thousand more being synthesized each year. More than 63,000 chemicals are commonly used in industry, with about 1,000 newly developed substances entering the consumer market each year. Only a fraction of these chemical have been tested for their toxicological effects, and neither industry nor the government produce information regarding the toxicity of these chemicals unless they are statutorily required to do so. *Id.* For instance, the Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2601-29 (1986), requires manufacturers of specified chemicals to meet certain reporting requirements which include publishing the results of tests on those specified chemicals to determine their effects. The TSCA does not, however, require unspecified chemicals to meet reporting requirements.

[43] Pier et al., *supra* note 42, at 3.

[44] *Id.*

[45] *See generally* G. FRIEDMAN, PRIMER OF EPIDEMIOLOGY (2d ed. 1980).

[46] *See In re* Joint Eastern & Southern District Asbestos Litig., 52 F.3d 1124, 1128 (1995); *see also* Agent Orange Opt Out Opinion, 611 F. Supp. 1223, 1231 (E.D.N.Y.

and statistically significant relationship between the substances to which a plaintiff was exposed and the injury a plaintiff has suffered.[47]

In *Ellis v. International Playtex, Inc.*,[48] the plaintiff brought a wrongful death action against a tampon manufacturer alleging that his wife died as a result of contracting toxic shock syndrome after using a tampon manufactured by the defendant.[49] As proof of causation, the plaintiff sought to introduce epidemiological studies conducted by the Federal Center for Disease Control and the Wisconsin, Minnesota and Iowa State health departments, all of which showed a statistical link between the use of a tampon and the disease.[50] The district court refused to admit the studies claiming they lacked reliability under the Federal Rules of Evidence.[51] On appeal, the Fourth Circuit reversed the lower court's ruling, holding that the defendant failed to meet its burden of showing that the methodologies of these epidemiological studies were flawed and therefore incapable of sustaining the plaintiff's causation burden.[52]

Unfortunately, many courts have tacked in the opposite direction and have concluded that since epidemiological and toxicological studies are inherently incapable of establishing causation to a certainty, the information contained in these studies must be excluded from the jury's consideration. This result unfairly prejudices the innocent victim.[53]

In light of the unique problems associated with demonstrating causation to a certainty in a toxic tort action, many commentators have observed that the success or failure of a plaintiff's case actually hinges on the expert testimony.[54] Tragically, changes in federal

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1985), *aff'd*, 818 F.2d 187 (2nd Cir. 1987), *cert. denied*, 487 U.S. 1234 (1988) (holding that epidemiological studies of exposed population were the "only useful studies having any bearing on causation").

[47] *See* Reserve Mining Co. v. EPA, 514 F.2d 492 (8th Cir. 1975) (allowing epidemiological evidence of asbestos workers to establish a risk of asbestos exposure); *see also* American Iron & Steel Inst. v. OSHA, 577 F.2d 825 (3d Cir. 1978) (epidemiological evidence permitted to establish health risk of coke oven emissions).

[48] 745 F.2d 292 (4th Cir. 1984).

[49] *Id.* at 296.

[50] *Id.* at 299.

[51] *Id.* at 300.

[52] *Id.* at 303.

[53] *See, e.g.*, Viterbo v. Dow Chem. Co., 646 F. Supp. 1420 (E.D. Tex. 1986), *aff'd*, 826 F.2d 420 (5th Cir. 1987) (granting summary judgment in favor of defendant where plaintiff failed to supply epidemiological or other admissible evidence to support allegation that plaintiff's use of defendant's herbicide caused alleged injuries).

[54] Cynthia H. Cwik, *Guarding the Gate: Expert Evidence Admissibility*, 25 A.B.A. J. SEC. LITIG. 6 (Summer 1999).

evidentiary admissibility standards over the last ten years have resulted in trial judges as "gate-keepers" unnecessarily excluding toxic tort plaintiffs' scientific expert testimony under standards that almost invariably sound the "death knell for a plaintiff's cause of action."[55]

III. LEGAL BACKGROUND FOR THE ADMISSIBILITY OF EXPERT WITNESS EVIDENCE

Long before the Federal Rules of Evidence were adopted, the decision of the United States Court of Appeals for the District of Columbia in *Frye v. United States*[56] represented the common law standard for determining the admissibility of scientific expert testimony. At issue in the case was whether the systolic blood pressure deception test (a precursor to the present-day lie detector test) should be admissible in a criminal trial.[57] Establishing what is commonly referred to as the "general acceptance" test, the court held scientific testimony to be inadmissible unless the expert's methodology is accepted in the general community of scientists.[58] Since at the time of the decision, the lie detector test had not reached a level of general acceptance within the scientific community, the court ruled that the tests conducted on the defendant were inadmissible.[59] Under the *Frye* test, a court was not required to examine the reliability of an expert's testimony. Instead, courts looked to the general community of scientists in the particular field to see if there was substantial agreement that the methodology employed was sound.

The "general acceptance test" survived for decades and many courts relied on its reasoning to determine the admissibility of scientific evidence.[60] Over the next seventy years, an onslaught of scientific and technological advances exploded into courtrooms across the country. The holding of *Frye* came under fire for failing to offer specific guidelines for ascertaining when a scientific principle becomes generally accepted.[61]

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[55] Paul S. Miller & Bert W. Rein, *Wither* Daubert*? Reliable Resolution of Scientifically-Based Causality Issues in Toxic Tort Cases*, 50 RUTGERS L. REV. 563, 567 (1998).

[56] 293 F. 1013 (D.C. Cir. 1923).

[57] *Id.*

[58] *Id.* at 1014.

[59] *Id.*

[60] *See, e.g.*, United States v. Smith, 869 F.3d 348 (7th Cir. 1989) (spectrograms); Bundy v. Dugger, 850 F.2d 1402 (11th Cir. 1988), *cert. denied*, 488 U.S. 1034 (1989) (fiber analysis); United States v. Gould, 741 F.2d 45 (4th Cir. 1984) (psychiatry).

[61] *See, e.g.*, Richardson v. Richardson-Merrell, Inc., 857 F.2d 823, 832 (D.C. Cir.

The Rules of Evidence ("Rules") were adopted in the 1970s, and included provisions addressing the admissibility of evidence generally, as well as specific references for the introduction of expert testimony.[62] The general thrust of the Rules is simple—"all relevant evidence is admissible."[63] Nowhere do the Rules specify a standard of admissibility for scientific studies or expert opinions. Instead, Rule 702 specifically provides that:

> [i]f scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliable to the facts of the case.[64]

In 1993, the Supreme Court, in the seminal case *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,[65] held that the *Frye* "general acceptance test" was contrary to the "liberal thrust" of the Federal Rules, which were intended to lower barriers to the admission of expert testimony.[66] Additionally, the Court sought to create a uniform standard for the admissibility of scientific evidence focused on the issue of scientific validity.[67] In its ruling, the Court directed that trial judges, pursuant to Rule 104(a),[68] would determine whether the proffered expert evidence is "(1) scientific knowledge that (2)

1988) (quoting Ferebee v. Chevron Chemical Co., 736 F.2d 1529, 1536 (D.C. Cir. 1984), *cert denied*, 469 U.S. 1062 (1984)).

[62] FED. R. EVID. 401 & 701-02.

[63] *See* FED. R. EVID. 402.

[64] FED. R. EVID. 702.

[65] 509 U.S. 579 (1993). Jason Daubert and Eric Schuler both suffered from limb reduction birth defects following their mothers' ingestion of Bendectin, a popular morning sickness drug during each of their pregnancies. *Id.* at 579. Actions were brought against the drug's manufacturer, Merrell Dow Pharmaceuticals, claiming that Bendectin caused the plaintiffs' birth defects. *Id.* The trial judge granted defendant's motion for summary judgment, 727 F. Supp. 570 (S.D. Cal. 1989), and the Ninth Circuit affirmed, 951 F.2d 1128 (9th Cir. 1991), holding the plaintiffs' expert testimony inadmissible because its underlying methodology was not generally accepted in the scientific community.

[66] *Daubert*, 509 U.S. at 588.

[67] *Daubert* is centered on the idea of scientific validity. *See* MODERN SCIENTIFIC EVIDENCE 1-45 (David Faigman et al. eds., 1997); *see also* Black, *supra* note 6; Joseph Sanders, *Scientific Validity, Admissibility and Mass Torts After* Daubert, 78 MINN. L. REV. 1387, 1390 (1994).

[68] *See* FED. R. EVID. 104(a). This rule governs preliminary questions of admissibility: "[p]reliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b)." *Id.*

will assist the trier of fact to understand or determine the facts in issue."[69]

Daubert set up a two-prong test to guide trial judges in their gate-keeping role. First, judges must make a "preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid" [i.e., "reliable"].[70] Second, they must determine "whether that reasoning or methodology can be applied properly to the facts at issue"[71] (i.e., whether the expert testimony "fits" the issue to which he or she is testifying).[72] The proffered expert evidence must satisfy both prongs of the Court's test to be admissible.[73]

The Court went on to set out four discretionary factors to assist a trial judge in determining whether the proffered expert evidence is sufficiently reliable such that it may be considered by the ultimate trier of fact, i.e., the jury. The factors are as follows: (1) whether the technique or theory underlying the proffered testimony can be tested (i.e. "falsifiability"); (2) whether it has been subjected to peer review and publication; (3) whether it has been generally accepted in the scientific community; and (4) whether it has "a known or potential rate of error."[74] On remand, the Ninth Circuit introduced a fifth factor[75] that a trial judge may take into consideration: whether the expert proposes to testify about matters "growing naturally and directly out of research they have conducted independent of litigation, or whether they have developed their opinions expressly for purposes of testifying."[76]

It is important to note that while *Daubert* changed the

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[69] *Daubert*, 509 U.S. at 592.

[70] *Id.* at 580.

[71] *Id.* at 592-93.

[72] *Id.* at 591. Several "fit" analyses in the years since the *Daubert* decision have excluded testimony because the trial judge concluded that the evidence available to the expert did not address the particular disputed fact questions posed by the case, i.e., there was no "fit" between the data and the conclusions the expert wished to draw. *See, e.g.*, *In re* Paoli R.R. Yard PCB Litig., 35 F.3d 717, 743 (3rd Cir. 1994) (simply too great a "gap" between the data and the opinion offered).

[73] *Daubert*, 509 U.S. at 591-92.

[74] *Id.* at 593-94.

[75] *See* Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1317 (9th Cir. 1995).

[76] *Id.*; *see also* Sheehan v. Daily Racing Form, Inc., 104 F.3d 940, 942 (7th Cir. 1997) (inquiring whether the expert "is being as careful as he would be in his regular professional work outside of his paid litigation consulting"); Allison v. McGhan Med. Corp., 184 F.3d 1300 (11th Cir. 1999) (excluding an expert rheumatologist's opinion testimony as it was prepared for litigation); Amorgianos v. Nat'l R.R. Passenger Corp., 137 F. Supp. 2d 147, 190 (E.D.N.Y. 2001) (stating that experts' methodology was not reliable because each expert developed their hypothesis during course of litigation and did not share same with peers).

admissibility standard for scientific expert evidence, the Court expressly stated that the "inquiry envisioned by Rule 702 is a 'flexible one'"[77] and pointed out that the focus of the trial judge "must be solely on principles and methodology, not the conclusions they generate."[78] Despite this mandate, defendants continue to raise *Daubert* challenges that seek to have trial judges, acting as gate-keepers, exclude expert scientific testimony on the basis of the conclusions reached.[79] Such actions fly in the face of the express instruction from the Justices that "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of satisfying shaky but admissible evidence."[80]

Following *Daubert*, the Supreme Court had an opportunity to decide the appropriate standard of appellate review for a trial court's ruling on the admissibility of expert evidence. In *Joiner v. General Electric*,[81] the district court found that there was no evidence to conclude that the plaintiff was either exposed to polychlorinated biphenyls ("PCBs") or that the exposure to PCBs was linked to the plaintiff's lung cancer.[82] Following the direction taken by the Third Circuit in *In re Paoli R.R. Yard PCB Litigation*,[83] which took a "hard look" at the trial court's exclusion of evidence, the Eleventh Circuit reversed the district court, applying a stringent standard of review.[84] The Supreme Court reversed the Eleventh Circuit's decision and held "[i]n applying an overly 'stringent' review to [the district court's] ruling, [the Eleventh Circuit] failed to give the trial court the deference that is the hallmark of abuse-of-discretion review."[85] The Court went on to hold that whether the excluded evidence was "outcome determinative" was irrelevant to the question of standard of review.[86]

The abuse-of-discretion standard of review established by *Joiner*

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[77] *Daubert*, 509 U.S. at 594.

[78] *Id.* at 594-95.

[79] The Third Circuit embraced the Supreme Court's admonitions in *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 152 (3d Cir. 1999), where it found "an expert opinion must be based upon reliable methodology and must reliably flow from that methodology and the facts at issue—but it need not be so persuasive as to meet a party's burden of proof or even necessarily its burden of production."

[80] *Daubert*, 509 U.S. at 596 (citing Rock v. Arkansas, 483 U.S. 44, 61 (1987)).

[81] 864 F. Supp. 1310 (N.D. Ga. 1994).

[82] *Id.*

[83] 33 F.3d 716, 749–50 (3d Cir. 1994).

[84] 78 F.3d 524 (11th Cir. 1996).

[85] General Elec. Co. v. Joiner, 522 U.S. 136, 143 (1997).

[86] *Id* at 142-43.

has particular significance for plaintiffs litigating toxic tort actions. Typically, defense counsel seeking to exclude a plaintiff's proffered expert testimony will simultaneously move for summary judgment because if they are successful and the evidence is excluded, the plaintiff will not be able to establish causation. From a practical perspective, when this occurs, a plaintiff's ability to challenge the trial court's ruling on appeal often becomes a meaningless right.

Following the *Joiner* decision, lower courts were split on how, or even whether, *Daubert* applied to non-scientific expert evidence, which nevertheless could be characterized as "technical" or "other specialized"[87] knowledge.[88] The Supreme Court resolved this split in 1999 in *Kumho Tire Co. v. Carmichael*,[89] anecdotably referred to as the final case in the *Daubert* trilogy.

In *Kumho Tire*, the Court held "that *Daubert's* general holding—setting forth the trial judge's general 'gate keeping' obligation—applies not only to testimony based on 'scientific' knowledge, but also to testimony based on 'technical' and 'other specialized' knowledge."[90] The Court reiterated that a trial judge may consider one or more of the *Daubert* discretionary factors when it will help determine the expert's reliability.[91] Writing for the unanimous Court, Justice Breyer reaffirmed the "flexibility" of the *Daubert* test[92] and stated that "*Daubert's* list of specific factors neither necessarily nor exclusively"[93] applies to all expert evidence because "[l]ife and the legal cases it generates are too complex to warrant so definitive a match."[94]

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[87] *See* FED. R. EVID. 702.

[88] *See, e.g.*, Talkington v. Atria Reclameluficers Febriken B.V., 152 F.3d 254, 265 (4th Cir. 1998) (finding *Daubert* inquiry inapplicable because electrical engineer claimed to rely on training and expertise and not any particular methodology); Michigan Millers Mut. Ins. Corp. v. Benfield, 140 F.2d 915, 920 (11th Cir. 1998) (whether *Daubert* factors applicable to expert hinges on manner in which expert's testimony is presented to the jury). Courts where *Daubert* was held inapplicable to purported non-scientific evidence include: Watkins v. Telsmith, Inc., 121 F.3d 984, 990 (5th Cir. 1997) (*Daubert* factors do necessarily apply to engineering principles and practice experience); Compton v. Subaru of Am., Inc., 82 F.3d 1513, 1518 (10th Cir. 1996) (*Daubert* factors are unwarranted in cases where expert testimony is based solely on experience or training); Tamarin v. Adam Caterers, Inc., 13 F.3d 51 (2nd Cir. 1993) (*Daubert* factors are inapplicable to testimony based on payroll review prepared by accountant).

[89] 526 U.S. 137 (1999).

[90] *Id.* at 141 (citing FED. R. EVID. 702).

[91] *Id.*

[92] *Daubert*, 509 U.S. at 594.

[93] Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141 (1999).

[94] *Id.* at 151.

In response to the Supreme Court's *Daubert* trilogy, Congress amended Rule 702 in 2000.[95] By amending the rule, Congress affirmed "the trial court's role as gate-keeper" and stated "that all types of expert testimony present questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful."[96] According to the Advisory Committee notes, however, the amendment is "not intended to provide an excuse for an automatic challenge to the testimony of every expert." Instead, the trial judge has the discretion to avoid unnecessary "reliability" proceedings in cases where the "reliability of an expert's method is properly taken for granted."[97]

IV. CRITICISMS TO THE WHOLESALE ALTERATION OF ADMISSIBILITY STANDARDS PERTAINING TO EXPERT EVIDENCE

"Implicit[] in the *Daubert* line of cases" is an assumption that trial judges have the skills necessary "to understand and interpret expert evidence, or at least they have-possess better skills than six or twelve" jurors.[98] Jurors are frequently maligned as intellectual incompetents who rely on superficial characteristics of experts in judging their testimony, or "abdicate their responsibility to evaluate [an expert's] testimony" altogether because they are simply too confused.[99] When it comes to evaluating complicated scientific data derived from the fields of epidemiology, toxicology, and chemistry, however, studies demonstrate that the average trial judge is certainly no better qualified than members of a jury.[100]

The most common criticism of the Supreme Court's wholesale alteration of expert admissibility standards in *Daubert* is that it forces trial judges to become amateur scientists in order to meet their gate-keeping responsibilities.[101] Others have expressed concern over the potential for science to overwhelm a trial judge, resulting in a "blind

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[95] *See* FED. R. EVID 702 advisory committee's note at 687 & 690; *see also* David M. Maole & Paul J. Zwier, *Epistemology After* Daubert, Kumho Tire *and the New Federal Rule of Evidence 702*, 74 TEMP. L. REV. 103 (2001).

[96] *See* FED. R. EVID. 702 advisory committee's note at 687 & 690.

[97] *Id.* at 688.

[98] Neil Vidmar & Shari Seidman Diamond, *The Jury in the Twenty-First Century: An Interdisciplinary Conference Article: Juries and Expert Evidence*, 66 BROOK. L. REV. 1121, 1167 (2001).

[99] *Id.* at 1126.

[100] *Id.* at 1169.

[101] Mark Parascandola, *What is Wrong with the Probability of Causation?*, 39 JURIMETRICS J. 29, 44 (1998) ("Any mechanism to keep "junk science" out of the courtroom is only as good as those watching over it.").

application" of the gate-keeper responsibilities.[102] Finally, some commentators have concluded that a dangerous precedent is set when "judges must pit themselves against scientists who are testifying as experts in their fields."[103]

While there is little research data in the area, studies suggest that the ability of judges and jurors to make correct inferences from probability data are both poor, and specifically, that the judges are *not* superior to jurors.[104] A panel of the National Research Council also performed a series of case studies which demonstrated that judges frequently misinterpret statistical information.[105]

The most compelling data, however, comes from a recent study involving 400 state court trial judges from all fifty states whose dockets were likely to include *Daubert* type evidence.[106] A detailed survey was developed consisting of two parts. The first part focused on the admissibility standards in the individual judge's state, his or her perception of the appropriateness and value of the *Daubert* standards, additional perception questions concerning the functioning of the legal system, and the individual judge's definition of types of expert testimony as "scientific" or as "technical or otherwise specialized knowledge."[107] The second part of the survey focused on the trial judge's level of experience with specific types of scientific evidence and his or her techniques for managing scientific evidence. A particularly critical aspect of the survey assessed the judge's understanding of the *Daubert* factors, specifically, testing and falsifiability, error rates, peer review and publication, and general acceptance of the scientific community. Each judge was asked to explain his or her understanding of each criterion and how they would apply a specific factor.[108]

The study found that few of the judges had little experience with epidemiological evidence, and 73% reported they had no experience at all. A startling 96% of the judges surveyed reported that they

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[102] *Id.*

[103] Samuel H. Jackson, *Technical Advisors Deserve Equal Billing with Court Appointed Experts in Novel and Complex Scientific Cases: Does the Federal Judicial Center Agree?*, 28 ENVTL. L. 431, 436 (1998).

[104] *See* Gary Wells, *Naked Statistical Evidence of Liability: Is Subjective Probability Enough?*, 62 J. PERSONALITY & SOC. PSYCHOL. 739 (1992).

[105] *See generally* THE EVOLVING ROLE OF STATISTICAL ASSESSMENTS AS EVIDENCE IN THE COURTS (Stephen E. Fienberg ed., 1989).

[106] *See* Sophia Gatowski et al., *Asking the Gatekeepers: Results of a National Survey of Judges on Judging Expert Evidence in a Post-*Daubert *World*, 25 LAW & HUM. BEHAV. 433 (2001).

[107] *See* FED. R. EVID. 702.

[108] *See* Gatowski *supra* note 106.

received no instruction about general scientific methods and principles. As concerns the *Daubert* factors, only 4% could provide an explanation that demonstrated a clear understanding of the testing and falsifiability factor; while a startling 35% of the judges gave answers which were unequivocally wrong. Similarly, only 4% demonstrated a clear understanding of "error rate," 86% gave answers best classified as equivocal, and 10% gave clearly wrong answers. Concerning peer review, the majority of the judges clearly understood the concept, while 10% clearly did not.[109]

These judicial deficiencies and the results of other research studies are extremely significant since the *Daubert* factors of falsifiability and error rates are frequently a critical aspect of a trial judge's evaluation of the validity of an expert's scientific opinion.[110] The data in these research studies and surveys suggest that claims of judicial superiority versus juror inferiority in assessing scientific evidence are unfounded, and, at their worst, may be potentially wrong. There is simply "no evidence that juries are incompetent to evaluate expert testimony" or that if permitted to review all expert evidence available to both sides, that there is a greater potential for unsupported, exorbitant damage verdicts.[111] When faced with the task of evaluating any evidence outside of their common knowledge, jurors rely on common sense to assess the completeness and consistency of the testimony and evaluate the evidence against their knowledge in related matters.[112]

More likely, the difficulties faced by jurors lie in the manner in which the scientific information is presented,[113] and do not involve their ability to understand the information.[114] Lawyers must give

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[109] Vidmar & Diamond, *supra* note 98, at 1172-73 (interpreting Gatowski, *supra* note 106).

[110] Vidmar & Diamond, *supra*, note 98, at 1173.

[111] *Id.* at 1175.

[112] *See* Sanja Ivkovich & Valerie Hans, *Jurors and Experts*, 16 ADVOCATE: THE MAGAZINE FOR DELAWARE TRIAL LAWYERS 17, 20 (1994).

[113] Some researchers have found some indication that jurors have trouble with some complex scientific expert testimony. They noted that the reason for this difficulty may be the limits placed on jurors by the adversarial process which forces them to operate under less than optimal circumstances including confusing presentation of factual and legal issues "and other needless impediments to their fact-finding task." *See* Joe S. Cecil et al., *Citizen Comprehension of Difficult Issues: Lessons from Civil Jury Trials*, 40 AM. U. L. REV. 727, 765 (1991).

[114] Vidmar & Diamond, *supra* note 98, at 1176; Cecil, *supra* note 113, at 750-63; JOE S. CECIL ET AL., JURY SERVICE IN LENGTHY CIVIL TRIALS 38 (1987); Neil Vidmar, *Are Juries Competent to Decide Liability in Tort Cases Involving Scientific/Medical Issues? Some Data From Medical Malpractice*, 43 EMORY L.J. 885, 903-06 (1994) (reviewing studies to assess the degree to which jury verdicts agree with those of experts independently

greater attention to preparing witnesses "to provide more concrete, albeit necessarily accurate, analogues, models, and metaphors to assist lay persons in grasping complex concepts."[115] In addition, jury instructions should be written more clearly to increase juror comprehension. Some commentators have posited that procedural modifications, such as providing jurors with a written synopsis of an expert's opinion prior to his or her testimony, may aid jurors in their role as the ultimate triers-of-fact.[116] Others have suggested that opposing experts should testify back-to-back rather than following the traditional adversary system of each side presenting its own case separately. This practice would enable jurors to more easily compare and evaluate the experts' testimony.[117] For example, Arizona has instituted a number of procedural reforms that allow jurors to ask questions of witnesses by communicating their request to the judge in writing, and permitting jurors to discuss evidence during breaks and at other times instead of being forced to remain silent on the issues until deliberations.[118] Some data collected by researchers indicates that jurors often have questions about expert testimony such as the clarification of terminology, procedures used by experts to arrive at their conclusions, and the validity of the expert's inferences from the data studied.[119]

Even more chilling is the erosive effect the trial court's role as gate-keeper is having on the adversary system. The adversary process, the jury, "and the law of evidence are closely bound together" and "[w]hat happens to one inevitably affects the other two."[120] Each has

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assessing the evidence presented in malpractice cases); Mark I. Taragin et al., *The Influence of Standard of Care and Severity of Injury on the Resolution of Medical Malpractice Claims*, 117 ANNALS OF INTERNAL. MED. 780 (1992) (comparing jury verdicts on liability against the judgment of negligence made by insurance company's physician evaluator); Special Comm. A.B.A. Sec. Litig., Jury Comprehension in Complex Cases (1989) (including interviews with judges, lawyers and juries after trials involving sexual harassment, antitrust, insurance fraud, and misappropriation of trade secrets).

[115] Vidmar & Diamond, *supra* note 98, at 1178; *see also* JOSEPH SANDERS, BENDECTIN ON TRIAL: A STUDY OF MASS TORT LITIGATION 91 (1998). *See generally* AMIRAM EL WORK ET AL., MAKING JURY INSTRUCTIONS UNDERSTANDABLE (1982), Robert P. Charrow & Beda R. Charrow, *Making Legal Language Understandable: A Psycholinguistic Study of Jury Instructions*, 79 COLUM. L. REV. 1306 (1979); Joel D. Lieberman & Bruce D. Sales, *What Social Science Teaches Us About the Jury Instruction Process*, 3 PSYCHOL. PUB. POL'Y. & L. 589 (1997).

[116] *See* Vidmar & Diamond, *supra* note 98, at 1179-80.

[117] JURY TRIAL INNOVATIONS (Thomas Munsterman et al. eds., 1997).

[118] *See generally* Paula Hannaford et al., *Permitting Jury Discussions During Trial: Impact of the Arizona Reform*, 24 LAW & HUM. BEHAV. 359 (2000).

[119] Vidmar & Diamond, *supra* note 98, at 1180.

[120] Joseph Sanders, *Scientifically Complex Cases, Trial By Jury, and the Erosion of the Adversarial Process*, 48 DEPAUL L. REV. 355, 356 (1998).

been "buffeted by changes in the American legal landscape" and each is affected by factors such as increasing docket pressures and the mounting costs associated with jury trials.[121]

Moreover, trial judges traditionally function as impartial arbitrators between disputing parties in civil cases.[122] The *Daubert* changes to the evidentiary rules of admissibility have effectively weakened the parties' control over litigation (and in the particular context of a toxic tort action, it has all but destroyed the injured party's ability to control the outcome), and eliminated the trial judge's "neutrality" by empowering them to exclude critical evidence from the jury's consideration, fundamentally altering the adversary system. A fair interpretation of these realities suggests that the Supreme Court has chosen to trade judicial impartiality and the traditional adversary system for cost reductions, reduced calendar loads and an increasingly politicized judiciary managing cases in a way that erodes the average citizen's belief that the courts serve as their last chance for "equal justice."

CONCLUSION

A careful reading of the *Daubert* trilogy and its progeny makes clear that the Supreme Court intended to open the gates and liberalize admissibility standards when it will aid the trier of fact. The Court has encouraged trial courts to err on the side of admissibility based on trust that the adversarial process resolves admissibility problems through the use of "vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof" to attack "shaky but admissible evidence."[123] The Federal Rules of Evidence have been amended to codify the Court's intent.[124]

Unfortunately, the practical effect of the Court's decisions are having just the opposite affect. The gates are quietly being closed; some might even say slammed in the faces of toxic tort and other plaintiffs. District courts find seemingly innocuous reasons to routinely prohibit a plaintiff's proffered expert testimony from ever reaching a jury, oftentimes completely dismissing actions. In light of the abuse-of-discretion standard of review, their decisions are rarely

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[121] *Id.* (citing MIRJAN R. DAMASKA, EVIDENCE LAW ADRIFT 142 (1997)).

[122] *See* Wasyl, Inc. v. First Boston Corp., 813 F.2d 1579, 1582 (9th Cir. 1987) (comparing the roles of judges and arbitrators).

[123] *Daubert*, 509 U.S. at 596 (citing Rock v. Arkansas, 483 U.S. 44, 61 (1987)).

[124] FED. R. EVID. 702.

overturned.[125]

Some subtle criticism of this result recently surfaced in the Eleventh Circuit Court of Appeals opinion in *Allison v. McGhan Medical Corporation*.[126] While adhering to the Supreme Court's holding, the *Allison* court noted that the Supreme Court has decreed it is less objectionable to have judges "don[] white coats and make determinations that are outside their field of expertise"[127] than to trust the communal knowledge and common sense employed by jurors during their deliberations. Viewing the *Daubert* line of cases more critically, it is possible that the Court's reasoning "reflects a desire to reduce case dockets and make litigation more efficient because judicial gate-keeping can eliminate cases at early stages in the litigation process and streamline those that remain."[128]

This simply cannot be what the Supreme Court intended when it took us down the *Daubert* path. Rather, what may be at work is an attempt by large corporations to deflect some of society's more difficult issues, such as how to deal with the harmful effects of products not thoroughly investigated or tested, but rushed to market.[129]

How many lives have been potentially saved by evidence of the lethal dangers of asbestos revealed during the infant stages of the litigation twenty years ago? How many more people would have died from incurable lung cancer had word of cigarettes' carcinogenic propensities been withheld from the public? Where would we be if incriminating expert evidence introduced in these cases had been subjected to a preliminary review by a trial court today? Clearly, these are questions for which there is no answer.

Furthermore, the question should be asked "where are we headed?" What evidence will a plaintiff injured by toxic substances yet to be discovered have to establish in order to bring the manufacturer under the microscope? What recourse is available to persons suffering from the painful symptoms of Multiple Chemical Sensitivity ("MCS"), whose claims have already been denied by overzealous gate-keepers intent on closing the admissibility gates to a potential mass tort should future research conclude that there is a

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[125] Brandon Jensen, *Litigating the Crossroads Between* Sweet Home *and* Daubert, 24 VT. L. REV. 169, 183 (1999).

[126] 184 F.3d 1300 (11th Cir. 1999).

[127] *Id.* at 1310.

[128] *See* Vidmar & Diamond, *supra* note 98, at n. 20.

[129] *See generally* Mark D. Shifton, Note, *The Restatement (Third) of Torts: Products Liability – The ALI's Cure for Prescription Drug Design Liability*, FORDHAM URB. L.J. 2343 (2002).

strong causative link?[130] Where do parents of children who received routine vaccinations which contained the preservative Thimerosal and have been diagnosed as autistic go for relief for their young ones' suffering?[131] In the summer of 1999, the American Academy of Pediatrics and the U.S. Public Health Service informed these parents that they have concerns about ethyl mercury contained in Thimerosal since mercury is a toxic metal which can cause immune, sensory, neurological, motor and behavioral dysfunctions.[132] Will their attempts at establishing causation also be met by locked doors?

One thing is painfully clear: no matter how it is viewed, the deck is stacked against a toxic tort plaintiff seeking to introduce scientific and expert testimony to prove his or her injury. As stated by Professor Risinger following his recent research on the issue, defendants win their *Daubert* challenges to plaintiffs' proffers "most of the time" and when "defendants' proffers are challenged by plaintiffs, those defendants usually win."[133]

Early in the sixteenth century, great thinkers of the Western World unanimously believed that the earth lay at the center of the universe, and all celestial bodies, including the sun and the stars, revolved around it.[134] So deeply held was this belief, that it was considered heresy to think otherwise.[135] But one man dared to believe otherwise. Nicolaus Copernicus, sitting alone in a turret and using just his eyes (as telescopes would not be invented for more than one hundred years) sketched and re-sketched his celestial observations.[136] As time passed, it became clear to Copernicus that the earth rotated on its axis once a day and traveled around the sun once in a year.[137] For more than thirty years, Copernicus checked and rechecked his findings, fearful that he could be sentenced to death

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[130] *See Admissibility of Evidence: Civil/Criminal*, 26 MENTAL & PHYSICAL DISABILITY L. REP. 934, 934-35 (2002).

[131] *See Child-Vaccine Preservative Prompts Surge in Mercury-Poisoning Claims*, 38-AUG Trial 14 (2002).

[132] *See* http://www.cdc.gov/nip/vacsafe/concerns/thimerosol/default.htm (last visited February 13, 2003) (on file with author); *see also* http://www.autism-mercury-thimerosal.com/vacmer.html (last visited February 13, 2003) (on file with author).

[133] D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 ALB. L. REV. 99 (2000) (examining more than 2,000 cases which cited *Daubert* from its decision until August 2000).

[134] Brendan McWilliams, *Copernicus and the center of the universe*, IRISH TIMES, Feb. 19, 2003, *available at* 2003 WL 12226971.

[135] *Id.*

[136] http://www.gap.dcs.st-and.ac.uk/~history/Mathematicians/Copernicus.html.

[137] *Id.*

for his conclusions.[138] At the insistent urging of a young German mathematics professor, in 1530 Copernicus published his conclusions in the great work *De Revolutionibus*.[139] His research had profound scientific, philosophical and religious effects on the world.[140] Copernicus's novel theories laid the groundwork for the later works of great scientists and astronomers including Galileo.[141] It is not clear, however, whether his theories and research would find their way past the admissibility gates of an increasingly imperial judiciary applying a *Daubert* analysis.

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[138] *Id.*

[139] McWilliams, *supra* note 134.

[140] *Id.*

[141] *See* http://www.bluete.com/Literature/Biographies/Science/Copernicus.htm (last visited Feb. 13, 2003) (on file with author).