

**SCIENTIFIC GERRYMANDERING AND BIFURCATION:
HOW A COMMON PROCEDURAL DEVICE REWARDS CORPORATE DECEIT**

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INTRODUCTION

Environmental litigation must often examine the propriety of corporate conduct in areas of scientific complexity. In the second generation of climate nuisance suits, for example, allegations of corporate participation in the climate disinformation campaign are woven into plaintiffs' claims. Toxic tort, currently and most notably in the Roundup litigation, presents another area of environmental litigation grappling with the legal ramifications of alleged corporate deception. Toxic tort suits often surface allegations and, in many cases disturbing evidence of, corporate scientific gerrymandering, or corporate efforts to finesse, slow, or even mislead scientific understanding of the toxicity of chemicals and related products. The manner and extent to which scientific gerrymandering is explored and litigated within those suits is often driven by another typical feature of toxic tort litigation – the common use of the procedural device of bifurcation. Judges frequently bifurcate toxic tort suits into causation and negligence phases, with the causation phase heard first. Bifurcation in toxic tort suits involving issues of scientific gerrymandering requires judges to decide whether evidence of scientific gerrymandering is relevant to and may be presented during the causation phase of a toxic tort trial. And, typically, as Judge Vince Chaabria recently ruled in *In re: Roundup Products Liability Litigation* (MDL No. 2741), judges hold that scientific gerrymandering is not relevant to causation and that evidence of scientific gerrymandering cannot be presented during the causation phase.

Rulings that prevent the admission of evidence of scientific gerrymandering during the causation phase of bifurcated trials can, however, be critiqued on both doctrinal and normative grounds. From a doctrinal perspective, scientific gerrymandering (how a corporate defendant shaped scientific knowledge about a chemical or product risk) is often directly relevant to causation (whether the product causes the relevant harm). This is so because effective corporate scientific gerrymandering can define the current state of science about risk, particularly when questions about the presence and/or extent of risk lie at the frontiers of scientific knowledge. Additionally, common tort and evidence doctrines support shifting or reducing causal burdens in the face of defendant misconduct that exacerbates asymmetrical access to information, like scientific gerrymandering (which might be likened to spoliation of evidence). From a normative perspective, permitting consideration of scientific gerrymandering during causation can be justified even if the introduction of such evidence increases the risk that juries will erroneously find that a chemical or product causes harm. Even if a chemical or product is ultimately shown not to cause a suspected harm, scientific gerrymandering is nonetheless a “wrong” that creates independent and distinct harms, including magnifying risks of exposure and extending a period of fearful uncertainty among those exposed (until such time as the question of extent and nature of risk can be objectively resolved). Moreover, tort litigation can be a more effective process than regulatory or private governance alternatives to right this wrong by surfacing corporate scientific gerrymandering. And, from a policy perspective, allowing the introduction of evidence of corporate scientific gerrymandering during the causation phase of bifurcated toxic tort trials would discourage scientific gerrymandering, thereby increasing transparency and rigor in research, improving the efficacy of and public confidence in regulation, and enriching the informational landscape for understanding chemical effects.

PART I: THE TOXIC TORT BACKDROP, AS EXEMPLIFIED BY THE ROUNDUP LITIGATION

[Part I explains how scientific gerrymandering is commonly raised and dealt with in toxic tort suits, including by offering as a specific example an overview of allegations of scientific gerrymandering and related legal rulings in the Roundup litigation.]

PART II: RELEVANCE, SCIENTIFIC GERRYMANDERING AND TOXIC TORT CAUSATION

[Part II explains the complex issues surrounding causation and the admissibility of causation evidence in toxic torts suits and then offers an account of why allegations of scientific gerrymandering should be considered—as an evidentiary, doctrinal matter—relevant to causation.]

PART III: UNFAIR PREJUDICE, SCIENTIFIC GERRYMANDERING AND ESTABLISHED TORT AND EVIDENCE DOCTRINES

Even if scientific gerrymandering is relevant to general causation and therefore *prima facie* admissible, judges might nonetheless exclude evidence of scientific gerrymandering upon a finding that its probative value is substantially outweighed by a danger of “unfair prejudice, confusing the issues, [or] misleading the jury.”¹ Juries presented with evidence of corporate scientific gerrymandering sometimes hold toxic tort defendants liable even where evidence of causation is relatively weak.² It is oft-hypothesized that in doing so, juries are commingling the substantive causal question (does chemical X cause cancer) with a desire to punish defendants for engaging in scientific gerrymandering or other wrongdoing.³ Judges may interpret this as unfair prejudice or confusion of the issues, the danger of which is sufficiently pronounced and potentially harmful to warrant exclusion of evidence of scientific gerrymandering during the causation phase of bifurcated toxic tort trials.⁴

¹ FED. R. EVID. 403 (“The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.”).

² Margaret A. Berger, *Eliminating General Causation: Notes Towards a New Theory of Justice and Toxic Torts*, 97 COLUM. L. REV. 2117, 2147 (1997) (suggesting that this occurred in the Bendectin litigation) (“Merrell’s failure to test- pre-and post-marketing, when it received reports of adverse effects—seemingly explains the large number of plaintiffs’ verdicts handed down by jurors, despite Merrell’s strong scientific evidence pointing to the absence of general causation; the jurors commingled weak evidence on causation with compelling evidence on breach of duty and damages.”); Wendy E. Wagner, *Choosing Ignorance in the Manufacture of Toxic Products*, 82 CORNELL L. REV. 773, 828-32 (1997) (“It would seem more than coincidental that in those cases in which juries have awarded damages in spite of weak causation evidence, the defendant manufacturer’s negligence in testing often rose to the level of gross negligence or recklessness sufficient to support the simultaneous award of punitive damages.”).

³ *E.g.*, David E. Bernstein, *The Breast Implant Fiasco*, 87 CAL. L. REV. 457, 505 (1999) (reviewing MARCIA ANGELL, M.D., *THE CLASH OF MEDICAL EVIDENCE AND THE LAW IN THE BREAST IMPLANT CASE* (1996)) (“[J]uries frequently rule against manufacturers in the absence of sufficient evidence of causation to punish them for misbehavior, particularly when there is scientific uncertainty on the underlying causation issue.”) (citing to articles by Margaret A. Berger, Feldman, and Wendy Wagner); Richard A. Nagareda, *Outrageous Fortune and the Criminalization of Mass Torts*, 96 MICH. L. REV. 1121, 1122-25 (1998); Lars Noah, *Civil Jury Nullification*, 86 IOWA L. REV. 1601, 1643 (2001) (identifying this as an example of civil jury nullification).

⁴ Thomas McGarity posits that concerns about commingling on causal questions have even motivated the “corpuscular” approach to *Daubert* gatekeeping in toxic tort cases. Thomas O. McGarity, *Proposal for Linking Culpability and Causation to Ensure Corporate Accountability for Toxic Risks*, 26 WM & MARY ENVTL L & POL’Y REV 1, 41 (2001). In *In re: Roundup Products Liability Litigation*, Judge Chhabria granted Monsanto’s request to

This approach seems reasonable on the surface. A defendant's efforts to avoid the development or acceptance of a scientific link between its chemical and harm, while unseemly, don't make the chemical more or less likely to cause cancer. Hence, the thinking goes, weighing the fact that a defendant engaged in scientific gerrymandering when evaluating whether the plaintiff has shown that a chemical causes harm is unfairly prejudicial because it rests the decision on causation on an "improper basis," moreover one that is "emotional" in the sense that it is driven my anger at the company.⁵

Scratch the surface, however, and it becomes apparent that this reasoning is facile. As explained in Part II, through science gerrymandering, defendants deliberately shade and shape the universe of information about a chemical and its effects that is available to regulators, plaintiffs and fact finders. Learning not just the current state of the science, but understanding that the state of the science is the way it is—including with respect to remaining uncertainties and knowledge gaps—in part because of defendants' strategic choices, is both proper and fair when evaluating what causal conclusions to draw from the current state of the science. Scientific gerrymandering can work in powerful ways to shape the availability, perceptions of, and the actual state of scientific knowledge on a subject and includes a range of conduct: Declining to conduct research into product risks; suppressing internal research about product risks; withholding or misrepresenting data to researchers; shutting down studies whose early results look; "actively work[ing] to obfuscate especially damaging information produced by others;" undertaking an "affirmative campaign of information and obfuscation;" attacking the integrity of researchers to "distract or even intimidate academic or government scientists whose research has adverse implications for a company;" and "finance[ing] counter-research designed to refute third-party research, either by producing different results or by suggesting that the results of independent research cannot be reproduced."⁶

Moreover, it is consistent with long-established tort and evidence doctrines to consider informational asymmetries and interference when deciding whether a plaintiff has satisfied its burden, including specifically with respect to causation. Important tort doctrines—*Summers v. Tice* alternate causation, *res ipsa loquitur*—recognize that a defendant's access to superior information and wrongful interference with the production of information provide compelling reasons to lessen the causal burden on plaintiffs. Similarly, the evidentiary doctrine of spoliation sanctions defendants for destroying evidence, often by inviting juries to infer that the disappeared evidence would have benefited the plaintiff. Juries responding to less-than-definitive evidence on causation can rationally, and consistent with these doctrines and the element of general causation, reason that the defendant's scientific gerrymandering impoverished the informational landscape on causation and evaluate the parties' respective showings on causation through that lens.⁷ When juries do so, they are not making an "inferential error,"⁸ but engaging

bifurcate the trial and significantly limit the evidence of scientific gerrymandering that could be introduced during the causation phase, reasoning that "plaintiffs' . . . attacks on Monsanto for attempting to influence regulatory agencies and manipulate public opinion regarding glyphosate. . . . when it comes to whether glyphosate caused a plaintiff's NHL, these issues are mostly a distraction, and a significant one at that."). Pretrial Order No. 61 Re: Bifurcation at 1, *In re Roundup Products Liab. Litig.*, 390 F Supp. 3d. 1102 (N.D. Cal. 2018). He did, however, concede that that "evidence that Monsanto manipulated the outcome of scientific studies, might be admissible during the causation phase." *Id.* at 2.

⁵ Advisory Committee Note, FED. R. EVID. 403.

⁶ Wendy Wagner, *When All Else Fails: Regulating Risky Products Through Tort Litigation*, 95 GEO. L.J. 693, 716-17 (2007).

⁷ *Id.* at 716-17 (positing that juries might without inappropriate emotion or scientific misunderstanding factor in the reasons for incomplete evidence on causation, such as a defendant's misconduct, and grant a spoliation-like presumption on causation to the plaintiff).

⁸ Victor J. Gold, *Federal Rule of Evidence 403: Observations on the Nature of Unfairly Prejudicial Evidence*, 58 WASH. L. REV. 497, 506 (1983) (positing that evidence should be understood to be unfairly prejudicial based on its propensity to cause a trier of fact to commit inferential error and explaining that "[i]nferential error occurs when the jury incorrectly decides that evidence is probative of an alleged fact or event").

in sound reasoning that many other doctrines attest is relevant to evaluating causation.⁹ To deny juries that important contextual backdrop may, in fact, make it harder for juries to accurately assess causation; it is widely recognized that the party bearing the burden “needs evidentiary depth to tell a continuous story.”¹⁰

Notably, the identified tort and evidence doctrines go much farther than simply factoring informational absence or misfeasance into weighing parties’ showings on causation; they often function to shift the burden entirely to the defendant to show that it did *not* cause the plaintiff’s harm or even, in the case of spoliation, grant relief to the plaintiff. These doctrines are not directly applicable to scientific gerrymandering (nor is it argued that they should be). The doctrines are raised and explored to support the more general propositions that (1) linking evidence of informational misfeasance to evaluations of causation is common, accepted and justified; and (2) even if juries do respond such evidence by inferring that in the absence of defendant’s scientific gerrymandering better information would exist about the connection between a chemical and harm and that information would support a causal connection, that is a reasonable conclusion related to the causal question – and not improper or unfairly prejudicial for purposes of Federal Rule of Evidence 403.

A. Tort Doctrine and Burden-Shifting Causation

The burden-shifting rule of *Summers v. Tice* (also called alternative-cause cases) allows a tort defendant who did not cause the plaintiff harm to be held liable when certain conditions are met. In *Summers v. Tice*, two defendants carelessly discharge their shotguns in the direction of the plaintiff.¹¹ A shot from one of the defendants’ shotgun shells hits the plaintiff in the eye, but the plaintiff, though no fault of his own, cannot discern whose.¹² The burden is then shifted to each defendant to prove that it was not its shot that hit the plaintiff. This invites and blesses an outcome where a defendant who did not in fact cause the plaintiff harm, but is unable to prove so, is held liable.¹³

The situation where a plaintiff is harmed by an exposure and causation is muddled by scientific gerrymandering is, in some obvious and significant ways, distinct from the *Summers v. Tice* paradigm. In *Summers v. Tice*, a defendant’s negligence clearly harms the plaintiff, although it is unclear whose; in the toxic tort situation, it is possible that the plaintiff’s chief harm is not caused by negligence at all. However, important justifications for the burden-shifting permitted in *Summers v. Tice* are not only present but arguably more pronounced when defendants engage in scientific gerrymandering that obscures whether the defendant’s product caused the plaintiff’s harm.

Summers v. Tice allows for burden-shifting in part because of the asymmetry of information regarding causation between the plaintiff and defendant.¹⁴ The defendant is understood to be in a superior position to know, or investigate, whether it caused the plaintiff’s harm. This kind of information

⁹ Indeed, judges may likewise rationally and without unfair prejudice or issue confusion rationally give plaintiffs a boost on causation where a defendant obscures evidence of causation. See Wagner, *Choosing Ignorance*, *supra* note 2, at 828-32 (explaining how a judge in the Missouri Court of Appeals overlooked deficiencies in plaintiffs’ proof on causation because the defendant’s own conduct wrongly preventing plaintiffs from accessing information about toxic chemical releases).

¹⁰ *Old Chief v. United States*, 519 U.S. 172, 190, 117 S.Ct. 644, 654, 136 L Ed 2d 574 (1997).

¹¹ 33 Cal 2d 80, 82, 199 P2d 1, 2 (Cal. 1948).

¹² *Id.*

¹³ *Id.* at 3, 84 (“The one shot that entered plaintiff’s eye . . . could not have come from the gun of both defendants. It was from one or the other only.”).

¹⁴ 33 Cal 2d at 86, 199 P2d at 4 (“The injured party has been placed by defendants in the unfair position of pointing to which defendant caused the harm. . . . Ordinarily defendants are in a far better position to offer evidence to determine which one caused the injury.”).

asymmetry is at its zenith as between a corporate chemical owner and an exposed individual.¹⁵ The corporate chemical owner possesses proprietary information about the chemical, deep scientific sophistication, and access to data about chemical test results; indeed, it may be challenging for a plaintiff to know he was exposed to a given chemical, let alone that the chemical might cause a particular harm or his harm.¹⁶ Those injured by toxic substances can properly be considered “the party least capable of initiating the lengthy scientific process needed to assess risk, as plaintiffs usually begin with no relevant information and inferior resources.”¹⁷

And information asymmetry is a strong justification for burden-shifting in tort law, as evidenced by the fact that information asymmetry supports burden-shifting in other contexts. For example, the doctrine of *res ipsa loquitor* allows factfinders to infer that a defendant’s negligence caused the plaintiff’s harm even in the absence of evidence of demonstrating the same; that the defendant possess superior knowledge or access to information about the occurrence weighs in favor of giving the jury a *res ipsa* instruction or granting the plaintiff a *res ipsa* inference.¹⁸ Indeed, eminent torts scholar Judge Guido Calabresi identifies information asymmetry as one of three considerations integral to understanding *res ipsa* cases, remarking on the importance of “which of the parties is in a better position either to reveal or to seek out explanatory evidence” or “which side has more knowledge and therefore which side should bear the incentive to come forward with the evidence.”¹⁹

Another factor justifying burden-shifting in the *Summers v. Tice* context is the relative culpability of the plaintiff and defendant.²⁰ The plaintiff is innocently shot from out of nowhere. The defendant, meanwhile, even if it did not in fact cause the plaintiff’s harm, did through its negligence risk harming the plaintiff, leading to the uncertainty about causation. Thus, even the “innocent” defendant – the defendant whose shot did not connect – is in some sense culpable, and clearly more culpable than the plaintiff. This justification for burden-shifting is also pronounced in the toxic tort context because corporate scientific gerrymandering can properly be considered more culpable than mere negligence that obscures causation. Unlike in case of the careless shooter, the corporate defendant who engages in scientific gerrymandering does so purposefully in the face of suspected or known risk in the name of profit.²¹ While defendants do

¹⁵ Wendy E. Wagner, *Choosing Ignorance*, *supra* note 2, at 798-800 (explaining the reasons for information asymmetry between a product manufacturer and exposed individual).

¹⁶ See generally Wendy E. Wagner, *Commons Ignorance: The Failure of Environmental Law to Produce Needed Information on Health and the Environment*, 53 DUKE L.J. 1619, 1633-1658 (2004) (explaining information asymmetries involving the manufacturers of products and factors giving rise to and exacerbating those asymmetries).

¹⁷ Berger, *supra* note 2, at 2130.

¹⁸ *Pacheco v Ames*, 149 Wash 2d 431, 437, 69 P3d 324, 327 (2003) (“[T]he purpose of the rule is to require the defendant to produce evidence explanatory of the physical cause of an injury which cannot be explained by the plaintiff.”) (quoting *Morner v. Union Pacific Railroad Co.*, 31 Wash.2d 282, 296, 196 P.2d 744 (1948)). Indeed, asymmetry of information is required in some jurisdictions to invoke the doctrine of *res ipsa loquitor*. *DeBusscher v Sam's E., Inc.*, 505 F3d 475, 481 (6th Cir 2007) (“Under Michigan’s version of the doctrine of *res ipsa loquitor*, the plaintiff must establish that . . . [e]vidence of the true explanation of the event must be more readily accessible to the defendant than to the plaintiff.”).

¹⁹ *Williams v KFC Nat. Mgt. Co.*, 391 F3d 411, 424 (2d Cir 2004) (Calabresi, J., concurring). See also RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 17 (2010) (“[E]ven though the defendant’s superior access to information is not a prerequisite for *res ipsa loquitor*, courts sometimes consider the extent of the defendant’s access in *res ipsa* cases.”).

²⁰ *Summers v Tice*, 33 Cal 2d at 83; 199 P2d at 2 (“defendants were negligent in so shooting and plaintiff was not contributorily negligent”) (“They are both wrongdoers both negligent toward plaintiff.”).

²¹ Even the failure to exercise due care to discern product risk is culpable. Berger, *supra* note 2, at 2134 (proposing that “[i]f a corporation fails to exercise the appropriate level of due care, it should be held liable to those put at risk by its action, without regard to injuries that eventually ensue; it is culpable because it has acted without taking into account the interests of those who will be affected by its conduct.”). And it is hard to imagine a “good reason” for

not seek to harm exposed plaintiffs (or act knowing that disease is substantially certain to result), they engage in scientific gerrymandering purposefully, making that conduct akin to an intentional tort with heightened conceptions of responsibility and culpability.²²

The foregoing analysis should not be taken to argue that *Summers v. Tice* burden-shifting applies whole cloth to toxic tort suits characterized by scientific gerrymandering. As noted at the outset, one important aspect of *Summers v. Tice* is that the harm is negligently caused and the burden is being shifted to a group of defendants who were all negligent and whose negligence obscured the question of causation.²³ The analysis does, however, show that two important “reasons of policy and justice”²⁴ for *Summers v. Tice* burden-shifting are not only present, but pronounced in the context of toxic tort suits accompanied by scientific gerrymandering – the asymmetry of information between plaintiff and defendant and the relative culpability of plaintiff and defendant. That this is so suggests that the risk that disallowing evidence of scientific gerrymandering causation phases of trial seeks to avoid—namely, the risk that a jury might impose liability on a defendant who did not in fact cause the plaintiff’s harm—is a risk that tort doctrine sometimes accepts for reasons salient in the present context. In short, there is evidence that we are less concerned about holding a defendant who doesn’t cause (or can’t be proven to have caused) harm liable where the defendant committed a wrong and that wrong makes it harder to understand whether the defendant caused the plaintiff’s harm.²⁵

There are, moreover, non-frivolous (although admittedly doctrine-expanding) arguments that can be made for burden-shifting in these types of toxic tort cases. Even though *Summers v. Tice* does not standing alone justify burden-shifting on causation on these facts, some combination and extension of *Summers v. Tice*, *res ipsa* doctrine, and cases holding that increased risk can be used to show causation (as exemplified by *Zuchowicz v. United States*²⁶), could be invoked to permit burden-shifting with respect to causation. These types of cases arguably fall within a category of tort cases “where the evidence that the defendant was negligent was sufficient,²⁷ but where the evidence that the plaintiff was injured on account of that negligence was seemingly weak,” or “in which it often was not clear whether (1) negligent

engaging in scientific gerrymandering that would make that conduct ethical. *See generally* David G. Owen, *Philosophical Foundations of Fault in Tort Law*, 201, 226 in *PHILOSOPHICAL FOUNDATIONS OF TORT LAW* (David G. Owen ed. 1995) (“Thus, the basic ethic revealed to lie behind responsibility for accidental harm is captured in the dual-faceted choice-blame principle, that choosing to risk harm to others without good reason is blameworthy, but that so choosing for good reason is proper.”).

²² David G. Owen, *Philosophical Foundations of Fault in Tort Law*, 201, 207, 218 in *PHILOSOPHICAL FOUNDATIONS OF TORT LAW* (David G. Owen ed. 1995) (explaining the values underlying tort law and observing that “a person should not choose to harm others solely to advance interests of his own” and that “the bodily integrity interest is accorded a higher abstract value than property”). *See also id.* at 220 (reasoning that “conduct is faulty, as a preliminary matter, if it reflects a choice to cause harm to another”).

²³ *See, e.g.*, *Dept. of Env’tl. Regulation v CTL Distrib., Inc.*, 715 So 2d 262, 264 (Fla. Dist. Ct. App. 1998) (“The case law addressing burden-shifting or market share liability involves situations where each of the defendants acted negligently but there was a lack of evidence as to which of the negligent defendants had caused the plaintiff’s injury.”); Restatement (Third) of Torts § 28 (2010) (specifying that *Summers v. Tice* alternative-cause applies “[w]hen the plaintiff sues all of multiple actors and proves that each engaged in tortious conduct that exposed the plaintiff to a risk of harm”).

²⁴ *Summers v. Tice*, 33 Cal. 2d at 88; 199 P2d at 5.

²⁵ Wendy E. Wagner, *Commons Ignorance*, *supra* note 16, at 1632 (observing that “common law courts . . . have sometimes requir[ed] actors to disprove that they caused harm when they are best situated to know how their activities might affect others” and citing to shifting of the burden of proof under *Summers v. Tice* or in response to evidence destruction and the application of the doctrine of *res ipsa loquitor*).

²⁶ 140 F.3d 381 (2d Cir. 1998).

²⁷ In the present context, the negligent conduct might be conceived of as the failure to warn about a suspected product risk, promoting exposure in the face of suspected risk, or simply the failure to establish safety prior to exposure.

behavior (2) of the defendant was a cause of the injury.”²⁸ Judge Calabresi, discussing *Summers v. Tice*, *res ipsa*, and *Zuchowicz*, observes that “recently . . . a consensus [has] developed that such cases should go to a jury upon a relatively light showing by the plaintiff of but for causation.”²⁹ For present purposes, the above-described doctrines are being invoked for a much more limited purpose –to explain why evidence of scientific gerrymandering is important and appropriately considered in evaluating causation. If such evidence prompts a jury to view the plaintiff’s evidence on causation more favorably, this can be understood as a doctrinally grounded and rational inference as opposed to an unfairly prejudicial or improper basis for decision. That there are non-frivolous arguments that doctrines like *Summers v. Tice*, *res ipsa*, and *Zuchowicz* could be extended to allow for burden-shifting on causation in these types of toxic tort cases suggests that some risk of jury commingling on questions of causation is an outcome within the realm of accepted tort doctrine.

B. Spoliation

The familiar evidentiary doctrine of spoliation provides another example of how the common law permits informational misconduct to influence findings on causation. Courts possess inherent power to sanction parties for engaging in spoliation of evidence (destroying, altering, failing to preserve evidence relevant to an anticipated or pending legal action). While the showing required to justify the imposition of sanctions differs somewhat across jurisdictions, typical requirements include that there be an obligation to preserve evidence (usually arising from litigation or the reasonable anticipation of litigation), the party interfered with evidence with a culpable state of mind (which can include everything from negligence to bad faith), and that a reasonable factfinder could conclude that the evidence would have been relevant.³⁰ Relevance is understood in this context to mean that “the lost evidence would have supported the claims or defenses of the party that sought it,”³¹ but – importantly – bad faith or willfulness can give rise to a presumption that the missing evidence would have supported the opposing party’s claim.³² Sanctions for spoliation can include an adverse inference instruction to the jury (inviting it to infer that the missing evidence would have benefited the opposing party) and even, in egregious circumstances, a default judgment against the spoliator.³³

Spoliation doctrine thus permits bad faith conduct with respect to evidence of causation to substantively alter the fact finder’s interpretation of causation evidence and even causal burdens. Courts can infer that the despoiled causation evidence would have helped the opposing party both for purposes of triggering spoliation sanctions and, in the form of an adverse inference sanction, with respect to substantive resolution of the issues by the fact finder. An adverse inference sanction relating to evidence of causation would permit a jury to make an inference that the missing evidence would have been

²⁸ *Williams v KFC Nat. Mgt. Co.*, 391 F.3d 411, 429 (2d Cir 2004) (Calabresi, J., concurring).

²⁹ *Id.*

³⁰ *Victor Stanley, Inc. v Creative Pipe, Inc.*, 269 FRD 497, 520-21 (D. Md. 2010) (summarizing these requirements as the showing required in the Fourth Circuit and observing that “[d]istrict courts in the Second, Fifth, Sixth, Seventh, and Ninth Circuits have identified the same factors for sanction-worthy spoliation.”).

³¹ *Victor Stanley, Inc. v Creative Pipe, Inc.*, 269 FRD 497, 520-21 (D. Md. 2010).

³² *Victor Stanley, Inc. v Creative Pipe, Inc.*, 269 FRD 497, 532 (D. Md. 2010) (“When the party alleging spoliation shows that the other party acted willfully in failing to preserve evidence, the relevance of that evidence is presumed in the Fourth Circuit.”).

³³ *Victor Stanley, Inc. v Creative Pipe, Inc.*, 269 FRD 497, 533-34 (D. Md. 2010) (“Sanctions that a federal court may impose for spoliation include assessing attorney’s fees and costs, giving the jury an adverse inference instruction, precluding evidence, or imposing the harsh, case-dispositive sanctions of dismissal or judgment by default.”). *Goodman*, 632 F.Supp.2d at 506; *In re NTL, Inc. Secs. Litig.*, 244 F.R.D. at 191.

unfavorable to the despoiling party.³⁴ So if, for example, a defendant improperly failed to preserve the results of a study assessing whether a chemical caused a harm, the jury could infer that the study would have showed that the chemical does in fact cause the harm. And, of course, if a court finds that conduct is sufficiently egregious, it may simply issue a default judgment against the defendant—a remedy that goes well beyond even burden-shifting.

Scientific gerrymandering as contemplated herein does not typically constitute spoliation. Scientific gerrymandering encompasses much broader and earlier in time efforts to slow, shape, distort, and limit the development and public availability of (negative) scientific evidence. It might perhaps be better viewed as preventing the creation of evidence, or predetermining and defining the scope of available evidence, as opposed to the destruction of evidence.

Scientific gerrymandering does, however, bear salient similarities to spoliation. Both spoliation and scientific gerrymandering involve contexts where there is information asymmetry, in that parties have differential access to information important to the claim.³⁵ Moreover, in both contexts, the party with superior access to information obtains or seeks to maintain its advantage in a culpable manner. And in both contexts, it is often unknowable if the unavailable information would, in fact, have aided the party who has made it unavailable. In the context of spoliation, an allegedly malfunctioning product might disappear before it can be examined; in the context of scientific gerrymandering, a study that might have been conducted but for a manufacturer's promotion of misleading evidence of safety is never conducted or a bogus study may taint scientific understanding.³⁶

Spoliation doctrine, in circumstances similar in important ways to scientific gerrymandering, provides for the strong medicine of sanctions to deal with comparable informational misconduct. The current approach to scientific gerrymandering presents a stark difference. The judicial posture toward scientific gerrymandering could be characterized as one of judicial agnosticism (wherein judges treat scientific gerrymandering like any other type of evidence) if not one of judicial deference to the gerrymanderers (in light of the fact that judges seem strongly inclined to protect gerrymanderers from evidence of their wrongdoing during the causation phase). The similarities between spoliation and scientific gerrymandering suggest that neither agnosticism nor deference is compelled and may in fact be unwarranted.

C. Admissibility of Scientific Gerrymandering Evidence during Causation Phases, In Context

Viewed in context—against the backdrop of the tort and evidence doctrines described above, as compared to prominent reform proposals, and in light of the balancing required by Federal Rule of Evidence 403—the proposition that evidence of scientific gerrymandering should be allowed during the causation phase of bifurcated toxic tort suits is modest. Notably, scholars have proposed numerous significant reforms to address the steep informational and evidentiary burden plaintiffs face in

³⁴ *Jimenez-Sanchez v Caribbean Restaurants, LLC*, 483 F Supp 2d 140, 143 (DPR 2007) (explaining that an adverse inference instruction is warranted where a foundation for spoliation is established by “evidence sufficient to permit the trier of fact to find that the party against which the inference is sought to be made knew of (1) the litigation or the potential of litigation and (2) the potential relevance of the missing evidence to the litigation.”).

³⁵ Wendy E. Wagner, *What's It All About, Cardozo?*, 80 TEX. L. REV. 1577, 1592-93 (2002) (observing that spoliation sanctions can be understood at least partly as a means by which “courts might shift or adjust liability rules around problems of asymmetrical information” where “the plaintiff . . . is disadvantaged by the defendant’s superior access to information.”).

³⁶ And this can have important impacts on the assessment of causation in litigation. See Sanne H. Knudsen, *Adversarial Science*, 100 IOWA L. REV. 1503, 1531 (2015) (“[G]enerating debate within the scientific literature has direct and predictable consequences on the outcome of cases. Because the plaintiff bears the burden of proof, scientific uncertainty on issues like causation will almost always benefit the defendant.”).

establishing toxic tort causation. Margaret Berger offers a “proposed model” under which “liability in negligence would be imposed for failure to provide substantial information relating to risk and proof that the failure caused plaintiff’s injury would not be required,”³⁷ reasoning that “if a defendant is negligent in discovering and disseminating substantial adverse information about its product . . . it should be liable for adverse health effects those exposed, and plaintiffs should be relieved of proving general causation.”³⁸ Wendy Wagner proposes that if a manufacturer cannot publicize minimal safety research prior to marketing a product “the plaintiff is entitled to a presumption that the insufficiently tested product caused her harm.”³⁹ Some reform proposals focus specifically on scientific gerrymandering. Robert McGarity proposes that when a defendant is found to have engaged in scientific gerrymandering-like activities (“funding bogus science, screening and hiding negative studies, and stopping ongoing studies when they appeared to be going the wrong way”⁴⁰), courts should allow certain culpability-based causal presumptions regarding general causation. Namely, if the plaintiff proved to the jury’s satisfaction that the defendant was culpable, a presumption would arise that the substance was capable of causing the plaintiff’s disease.⁴¹ These proposals for significantly more far-reaching reform underscore the relative modesty of requiring defendants to bear the risk that their scientific gerrymandering may influence jury decisions on general causation.

The *Federal Rules of Evidence* also permit, if not compel, the introduction of gerrymandering evidence during causation phases. Under the applicable doctrinal test, set forth in the Federal Rule of Evidence 403, relevant evidence of scientific gerrymandering should be excluded only upon a finding that its probative value is *substantially outweighed* by a danger of *unfair prejudice*.⁴² The above analysis illustrates that it is not unfairly prejudicial (i.e., not an improper consideration) for juries to factor evidence of scientific gerrymandering into their evaluation of the strength of causal evidence.⁴³ And juries’ evaluations of causation in the shadow of scientific gerrymandering should not be dismissed merely as an “emotional” desire to punish bad corporate behavior.⁴⁴ A jury may, in fact, be well positioned to discern the motivations behind gerrymandering and draw accurate conclusions about causation therefrom. Indeed,

³⁷ Berger, *supra* note 2, at 2143-44.

³⁸ *Id.* at 2147. Notably, Berger makes this assertion after describing evidence of how Merrell engaged in scientific gerrymandering with respect to Bendectin.

³⁹ Wagner, *Choosing Ignorance*, *supra* note 2, at 834-35 (“The plaintiff thus establishes a prima facie case with proof of the following: (1) inadequate minimal testing on a product, (2) normal or foreseeable exposure to the product, and (3) serious harm that might be causally linked to exposure to the product.”).

⁴⁰ McGarity, *supra* note 4, at 65 (2001).

⁴¹ *Id.* at 57 (“The plaintiff would prevail on the general causation issue unless the defendant proved with Daubert-reliable expert testimony that the substance was incapable of causing the disease.”).

⁴² FED. R. EVID. 403 (emphasis added).

⁴³ Courts have noted that adverse inferences imposed as sanctions for spoliation do not constitute unfair prejudice. Viewed through the lens of spoliation, there is no prejudice created by admitting evidence of scientific gerrymandering. Even if a jury were to infer that absent defendant’s interference better scientific evidence of a connection between defendant’s chemical and plaintiff’s harm would exist, that simply speaks to the presence or absence of general causation—a proper basis for decision. *Jimenez-Sanchez v Caribbean Restaurants, LLC*, 483 F Supp 2d 140, 145 (D.P.R. 2007) (“The possibility of undue prejudice is not great, since evidence of spoliation could only lead to a reasonable jury inferring that the [missing evidence] in some way hurt CR’s case and that is not an improper basis for a decision.”).

⁴⁴ Although even that is arguably not unfairly prejudicial—it is, indeed, a jury’s prerogative to infuse its decisions with normative assessments of culpability. See Gold, *supra* note 8, at 504 (“Emotive aspects of a case have an effect on a jury because those aspects are commonly perceived as vital to the rendition of justice. Eliminating evidence with emotional appeal would thus also eliminate public confidence in our system of laws as a moral force.”).

the ability of twelve laypersons to interject human sensibilities into a proceeding otherwise dominated by the cold logic of the law arguably embodies the true worth of the jury system. This ability adds to, rather than detracts from, truth and accuracy by advancing the jury's empathic understanding of what the participants likely did and why.⁴⁵

However, one need not accept that introducing evidence of scientific gerrymandering during the causation phase creates *no* risk of unfair prejudice to conclude that, as a matter of straight forward application of existing doctrine, it is admissible. It is enough to accept *any* of the following propositions—that there is high probative value to evidence of scientific gerrymandering *or* that it is not improper to consider scientific gerrymandering when weighing causation *or* that even if there is a danger of unfair prejudice, it does not substantially outweigh probative value. And, in evaluating whether to exclude evidence as prejudicial, judges are meant to deliberate “with an appreciation of the offering party's need for evidentiary richness and narrative integrity in presenting a case.”⁴⁶ In evaluating probative value and prejudicial risk, courts consider “the full evidentiary context of the case as the courts understand it,”⁴⁷ and here recognition of how scientific gerrymandering can shape the existing state of science on causation is an important aspect of that evidentiary context.

Finally, the arguments that have been offered to this point have operated within existing doctrinal constructs. There are also, however, powerful arguments that it is normatively desirable to allow juries to hear evidence of scientific gerrymandering during the causation phase. Notably, many of the same normative rationales motivate the far more aggressive proposals to reform causal requirements in toxic tort and address scientific gerrymandering referenced above.

PART IV: NORMATIVE CONSIDERATIONS

Put simply, scientific gerrymandering is bad, tort law is a useful and appropriate venue for surfacing and discouraging scientific gerrymandering, and admitting evidence of scientific gerrymandering during the causation phase enhances tort law's ability to function in this manner. Notably, this normative case for greater policing of scientific gerrymandering within the causation phase of toxic tort trials does not require fealty to one side or the other in the larger, vociferous and heated debate about the propriety and stringency of causal requirements in toxic tort more generally.⁴⁸ While admissibility during causation would likely be viewed as a step in the right direction by those who favor

⁴⁵ Gold, *supra* note 8, at 504.

⁴⁶ *Old Chief v United States*, 519 U.S. 172, 183, 117 S.Ct. 644, 651, 136 L Ed 2d 574 (1997).

⁴⁷ *Old Chief v United States*, 519 U.S. 172, 182, 117 S. Ct. 644, 651, 136 L Ed 2d 574 (1997) (“An item of evidence might be viewed as an island, with estimates of its own probative value and unfairly prejudicial risk the sole reference points in deciding whether the danger substantially outweighs the value and whether the evidence ought to be excluded. Or the question of admissibility might be seen as inviting further comparisons to take account of the full evidentiary context of the case as the court understands it when the ruling must be made.”).

⁴⁸ Compare Richard J. Pierce, Jr., *Causation in Government Regulation and Toxic Torts*, 76 WASH ULQ 1307, 1312 (1998) (arguing that reduced causal burdens in toxic tort “would produce a series of adverse effects. . . . The direct adverse effects would include a massive increase in the use of scarce judicial resources to decide toxic tort cases, a massive increase in the cost of many socially beneficial products, and unavailability of many socially beneficial products. The indirect effects would include deterioration in the overall health of the population.”) with Berger, *supra* note 2, at 2119 (“[E]liminating causation furthers tort law's corrective justice rationale that liability is linked to moral responsibility.”) and McGarity, *Proposal for Linking Culpability and Causation to Ensure Corporate Accountability for Toxic Risks*, *supra* note 4, at 6 (“[C]ausation has proven a very effective stumbling block that has not only precluded compensation for all but the most clearly understood environmentally caused diseases, but has also stood in the way of ambitious attempts to protect the public health generally through toxic tort litigation.”).

reducing the causal burdens of toxic tort plaintiffs, even those comfortable with current (or even perhaps supportive of more stringent) judicial gatekeeping via *Daubert* might support the evidentiary approach recommended herein on the grounds as a means to dissuade scientific gerrymandering.

A. Scientific Gerrymandering is Bad

Scientific gerrymandering exacerbates the risk of harmful chemical exposures, undermines public confidence in the public health system, and contributes to public anxiety about personal safety. Many (most notably, Wendy Wagner) have argued persuasively that existing regulatory and common law regimes combine to discourage quality research into the health effects of chemicals, leading to widespread public exposure to chemicals of uncertain safety.⁴⁹ In this account, because it is so difficult to discern long-term health impacts associated with specific chemicals and for plaintiffs to establish causation related thereto (rendering it unlikely that the tort system will impose liability) and because manufacturers recognize that research that they conduct that suggests or reveals a health risk could spur regulation and/or become evidence in a tort suit, the tort and regulatory systems discourage manufacturers from undertaking research in the first instance. Reports of adverse health effects (or suspicions about the same) may spur additional inquiry by a manufacturer, but sometimes the response is to scientifically gerrymander—conduct an inquiry focused on exonerating a chemical as opposed to objectively understanding its effects with information tightly held and shared strategically with external audiences. Scientific gerrymandering can in this way impede the recognition, prompt assessment, informed regulation and even medical treatment of a chemical’s potential health risk, thereby increasing the magnitude (duration, extent and in some cases health consequences) of exposure. Delays occasioned by scientific gerrymandering can thus extend an already lengthy process for understanding risks. Even in the best of all possible worlds – with prompt detection of a risk and immediate efforts to study it – “time is needed” because “[e]xcept in the atypical case in which a rare and serious effect is almost instantly discernible, an immediate answer will not be forthcoming; often a considerable interval must elapse before the scientific community reaches even tentative conclusions on issues of causation.”⁵⁰

Sometimes, this will not result in actual, physical harm as the chemical will ultimately be exonerated; other times, it will result in more individuals being exposed for longer periods at higher levels and delay monitoring for and treatment of any associated health effects. Either way, it increases the period in which individuals lack the opportunity to make an informed choice about whether to expose themselves to a chemical in light of the suspected health risk and extends the anxiety-producing period of uncertainty among those so exposed about the effects of exposure once a suspected risk becomes known and is being further examined.

Scientific gerrymandering also dupes regulators and the public, thereby (once it is exposed) undermining public faith in and the integrity and efficacy of laws and institutions tasked with protecting human health and the environment. Doubt about whether the existing system in fact protects against chemical risk in turn contributes to a broader sense of vulnerability and anxiety about personal safety as well as loss of control over bodily integrity. Thomas McGarity asserts that existing causation rules encourage scientific gerrymandering and are likely to lead to what he terms an “accountability crisis”:

My criticism of the *Daubert* line of cases is that its comforting message to corporate America that companies will not be held liable in tort for damages they did not clearly

⁴⁹ Wagner, *Commons Ignorance*, *supra* note 16; Wendy E. Wagner, *Choosing Ignorance*, *supra* note 2, at 790-95 (1997) (detailing how the common law system, including the requirement that plaintiff prove causation, creates disincentives for manufacturers to develop information about product risk).

⁵⁰ Berger, *supra* note 2, at 2119 (citing to the development of information about the health risks posed by asbestos as an example).

cause will be heard by at least some companies as an invitation to press the limits of corporate responsibility. The recently exposed tobacco documents reveal with startling clarity how potential toxic tort defendants can “bend science” to meet their litigative and public relations needs. That capacity and the general inability of resource-strained regulatory agencies to uncover and punish illegitimate attempts to manipulate the regulatory process will combine to produce an accountability crisis that will ultimately precipitate strong political demands to change the system.⁵¹

Scientific gerrymandering thus inflicts harms to our institutions and systems of government and public sense of security and well-being that are independent of any manifested health impact related to chemical exposure.⁵²

The negative consequences of scientific gerrymandering outweigh any potential utility of such conduct. It could be argued that transparency about suspected health harms and worrisome initial study results would create more public anxiety in light of lay difficulty understanding information about chemical testing and risk, thus creating unnecessary fear about chemicals that will ultimately be proved safe. In a system cleansed of scientific gerrymandering, however, the public could better trust manufacturers to share information and work in a cooperative fashion with regulators to promptly and diligently evaluate product risk, limiting the perceived need to self-police exposures.

If, in the absence of scientific gerrymandering, quicker and more thorough cooperative investigation leads to a regulatory pause in the use of a chemical, it could also be argued that this deprives the public of the benefit of the chemical in the interim. One might take the view that most chemicals turn out to be safe and scientific gerrymandering is actually beneficial in that it functions to forestall unnecessary limits on chemical use (or private eschewing of chemicals) during the extended period required to establish their safety. A difficulty with this view is that scientific gerrymandering is not costless even when a chemical ultimately turns out not to pose physical harm; as described above, revealed scientific gerrymandering imposes independent and significant systemic and institutional harms. Moreover, it is hard to justify entrusting decisions about whether and when the utility of a chemical should outweigh risks from exposure to the manufacturer, who has a strong incentive to outweigh utility.

It can also be argued that scientific gerrymandering is not in fact as culpable as it often appears to be *ex post*. Scientific gerrymandering may often be motivated by a genuine belief at a company that a chemical is useful and safe as opposed to from a calculated decision to hide health risks and prioritize profits over people. However, such confidence may well be misplaced, a product of optimism sustained by corporate culture. Indeed, that corporate teams are susceptible to this type of optimism bias suggests that greater transparency is needed to provide a more objective assessment of even early hints of chemical-related risk. And though it could be argued that it is too hard to differentiate culpable scientific gerrymandering from well-intentioned corporate efforts to understand and manage chemical risk, for a variety of reasons explained further below, the tort system, while not perfect, may be best positioned to reveal and address scientific gerrymandering.

B. Institutional Suitability of Tort Law

⁵¹ McGarity, *Proposal for Linking Culpability and Causation to Ensure Corporate Accountability for Toxic Risks*, *supra* note 4, at 3-4.

⁵² Notably, a key rationale for spoliation sanctions is protection of the judicial system itself, not just compensation for party's unjustly denied access to evidence.

Tort law is generally recognized to effectively ferret out scientific gerrymandering, particularly as compared to the regulatory process.⁵³ The adversary process provides plaintiff attorneys with the incentive and means (the discovery process) to surface evidence of scientific gerrymandering.⁵⁴ Indeed, “[t]he success of litigants in uncovering and exposing suppressed adverse research is a signature feature of most toxic tort claims.”⁵⁵ And judges can perform an effective gatekeeping function with respect to sorting, identifying and making rulings on the admissibility of conduct that constitutes scientific gerrymandering.

Of course, even if tort law is good at discovering scientific gerrymandering, this does not speak to whether it is good at responding to or deterring revealed scientific gerrymandering. Perhaps the strongest argument that can be made that tort law generally (and allowing introduction of scientific gerrymandering during causation specifically) provides an inadvisable venue for redressing scientific gerrymandering is that it is blunt and overly punitive. Evidence of scientific gerrymandering in toxic torts suits, particularly when presented during the causation phase, punishes and discourages scientific gerrymandering by increasing the possibility that causation will be found and liability will be imposed on a manufacturer. Sometimes this increases accuracy because the defendant’s scientific gerrymandering in fact obscured what is a true health risk of a chemical. It also, however, increases the risk that liability will be imposed for phantom harms, i.e., where a chemical does not in fact cause plaintiffs harm. Richard Nagareda, for example, critiques mass tort for serving a means of moral condemnation for punishing defendants’ bad behavior (failing to warn about possible health risks, lying about widely known health risks) even when that behavior does not cause plaintiffs harm (because the possible health risks are ultimately disproved or because despite defendants’ fraud, plaintiffs know the risks about the product).⁵⁶ He argues that this moral condemnation should occur “not through the vehicle of tort litigation but, if at all, through democratic deliberation in the political process.”⁵⁷

Nagareda’s and similar arguments are persuasive in some circumstances, but significantly less so where, as in the case of scientific gerrymandering, the defendant’s misconduct actively obscures the causal question itself. When they gerrymander the science about product risks, defendants not only decline to share information about possible risk with plaintiffs, but, recognizing a potential risk of which they are uniquely aware, actively seek to discourage objective assessment of the nature of any risk while avoiding regulation that could minimize the number of individuals exposed. As explained *supra*, this presents not simply the harm of denying consumers informed consent and exposing them to possible risk (from failing to warn about potential risk), but the additional and distinct harms of (1) extending the duration of uncertainty and fear for exposed individuals (until such time as the scientific uncertainty can be resolved); and (2) upping the gamble by substantively expanding the magnitude of the risk posed if a substance is ultimately found to cause harm. The magnitude of the risk grows when scientific

⁵³ McGarity, *supra* note 4, at 60-61 (“One of the considerable advantages of a tort reparations regime is its capacity to get to the truth of the matter in ways that are largely unavailable to regulatory agencies engaged in traditional rule-making and enforcement.”). See generally Wagner, *When All Else Fails*, *supra* note 6, at 697-702 (explaining the myriad advantages that courts enjoy regarding access to information about risk products held by manufacturers as compared to political and regulatory processes).

⁵⁴ *Id.* (“Private attorneys . . . are adept at uncovering evidence of culpability in the discovery that precedes common law trials, and they are willing to spend the resources necessary to copy and organize documents, take depositions, and fight the company’s efforts to resist discovery.”).

⁵⁵ *Id.* at 711.

⁵⁶ Richard A. Nagareda, *supra*, note 3, at 1122-25 (referring to this situation as one of “outrageous fortune,” or “situations in which a manufacturer may have engaged in conduct that many might regard as irresponsible or morally culpable, but where that manufacturer, nonetheless, may have had the sheer good luck not to cause harm to consumers.”).

⁵⁷ *Id.* at 1125.

understanding about whether and what type of harm a chemical may cause is slowed because the delay increases the number of individuals exposed to the potential risk, the intensity of their exposure, and the consequences of exposure (by delaying identification of health impacts and possible treatments).⁵⁸ The effect of regulatory approval under U.S. law is particularly powerful in this regard, producing a lock-in effect that produced widespread lay acceptance and spreads to other markets where approval may be harder to revoke if harms are later recognized. Notably, these harms arise *whether or not the product in fact causes the suspected harm*.

Permitting evidence of scientific gerrymandering to be factored into causation is thus warranted even though it leads to an increased risk of imposing liability where there is not in fact causation. This is so for a few reasons. First, liability without causation does not impose unusually or pronounced justice concerns in this context. While the extent of the increased risk cannot be quantified, it is useful to recall that defendants possess numerous tools to respond to and rebut allegations of scientific gerrymandering and its effect on casual knowledge. Juries may conclude that there was no gerrymandering or that in its absence, a chemical would have been more closely linked to harm. The extent of the risk is thus unclear but there are reasons to believe it is not overwhelming. It is also useful to recall that “there is a risk of error whenever circumstantial evidence is relied on in reaching findings of negligence.”⁵⁹

Moreover, when the risk comes to fruition and a defendant is held liable for a harm it did not in fact cause, this outcome is not so objectionable in the present context. Scientific gerrymandering is culpable and imposes independent harms that are tightly linked to causation.⁶⁰ Additionally, while tort law generally eschews liability for negligence that does not cause harm, the type of negligence confronted here is distinct: “It is one thing to allow individual misbehavior that puts a few lives at risk to go unpunished and thus undeterred by the tort system. . . . It is quite another thing to allow a company to put thousands of lives at risk negligently with no common law or criminal remedy, as occurs in the toxic tort context when exposed plaintiffs are unable to prove causation.”⁶¹ Finally, and perhaps most importantly, defendant manufacturers can reduce the risk by taking care not to engage in scientific gerrymandering. Wendy Wagner’s account of outcomes in the breast implant litigation illustrates this point well.⁶² Manufacturers knew about and suppressed evidence that silicone implants were leaking, contributing to large jury awards.⁶³ Once research developed showing that the leaked silicone did not in fact cause connective-tissue and autoimmune diseases, jury verdicts petered off, causing Wagner to conclude that “had the manufacturers conducted research on the safety of implants prior to marketing and made that information available to juries, jury verdicts would likely have been favorable to them,” as it was “the very fact that they took advantage of their asymmetric access to information and withheld information from patients contributed to juries awarding significant judgments against them.”⁶⁴

⁵⁸ Berger, *supra* note 2, at 2143 (“The failure to disseminate information about the ill-effects of asbestos, known to its manufacturers from a wide variety of sources, undoubtedly delayed the regulation of asbestos products. As a consequence, many workers and their families suffered exposures to asbestos, some of which produced, or will produce, disease and, in some instances, death.”).

⁵⁹ RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 17 (2010) (recognizing that this risk of error “does produce an element of discomfort [in the context of *res ipsa*] inasmuch as the defendant can be found negligent without any evidence as to the nature or circumstances of the defendant’s actual conduct.”).

⁶⁰ See generally Wagner, *Choosing Ignorance*, *supra* note 2, at 816 (“The traditional common-law approach to assigning responsibility for proving causation in toxic tort cases creates, at least in theory, a ‘recurring miss’; manufacturers can act negligently, but avoid liability precisely because of that misconduct.”) (internal citation omitted).

⁶¹ Bernstein, *supra* note 3, at 504.

⁶² Wagner, *When All Else Fails*, *supra* note 6, at 715-16.

⁶³ *Id.*

⁶⁴ *Id.*

Inviting evidence of scientific gerrymandering into the causation phase would thus deter scientific gerrymandering, put the risk of an inaccurate finding on causation on the defendant who engaged in scientific gerrymandering, and afford the plaintiff some correction for the gerrymander-impooverished and distorted state of scientific knowledge on causation. Notably, this parallels the “prophylactic, punitive, and remedial rationales underlying the spoliation doctrine” which “serve both normative—designed to punish culpable conduct and deter it in others—and compensatory—designed to put the party adversely affected by the spoliation in a position that is as close to what it would have been in had the spoliation not occurred—functions,” namely to “(1) deter parties from engaging in spoliation; (2) place the risk of an erroneous judgment on the party who wrongfully created the risk; and (3) restore the prejudiced party to the same position he would have been in absent the wrongful destruction of evidence by the opposing party.”⁶⁵ For all of the above reasons, including evidence of scientific gerrymandering at the causation phase is thus appropriate under existing doctrine and justified on normative grounds.

⁶⁵ *Victor Stanley, Inc. v Creative Pipe, Inc.*, 269 FRD 497, 533-34 (D. Md. 2010) (internal citations omitted).