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UTILIZING STATISTICS AND BELLWETHER TRIALS IN MASS TORTS: WHAT DO THE CONSTITUTION AND FEDERAL RULES OF CIVIL PROCEDURE PERMIT?

Traditional judicial mechanisms that preserve litigants’ rights to due process and a jury trial challenge courts to provide litigants their day in court in an efficient and timely manner. This challenge is made exponentially harder where the litigation concerns tortious conduct affecting a large number of persons and giving rise to latent injury. In response to the recent increase in mass tort filings, courts have sought an alternative means of adjudication—the extrapolation of a statistically average, representative plaintiff to other plaintiffs. This Note examines the problems associated with mass tort actions and how two circuit courts of appeals have implemented the use of statistically representative bellwether plaintiffs in resolving mass tort issues. After comparing the use of bellwether plaintiffs to traditional mass tort mechanisms in questioning whether statistical representation violates due process and the right to a jury trial, the Note concludes with a proposition for the proper role that the use of extrapolating statistics to non-bellwether plaintiffs should take in mass tort litigation.

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Every decade presents a few great cases that force the judicial system to choose between forging a solution to a major social problem on the one hand, and preserving its institutional values on the other.1

INTRODUCTION

“It is a fundamental principle of American law that every person is entitled to his or her day in court.”2 The filing of a mass tort action can threaten to overwhelm a court’s ability to actually provide litigants with their “day in court.”3 Recognizing the importance not only of guaranteeing a litigant’s day in court, but also of having that day come in an efficient and expeditious manner,4 a number of mechanisms exist to afford judges wide latitude to efficiently handle a large number of claims at one

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3 See infra notes 22-33 and accompanying text.
4 See, e.g., Owens-Illinois, Inc. v. Levin, 792 F. Supp. 429, 431 (D. Md. 1992) (denying a preliminary injunction to stop a Maryland state court judge’s trial plan in an asbestos case, in part because the federal court recognized the importance of trying the cases in an efficient manner and that justice delayed would be justice denied).
time. Each of these mechanisms—for example, class actions, consolidation, multidistrict litigation transfers, and collateral estoppel—preserve litigants’ constitutional rights to due process and to a jury trial. The increase in mass tort litigation filings challenges the ability of traditional mechanisms to resolve cases efficiently. Acknowledging the burdens that mass tort litigation impose on a court, two United States Courts of Appeals have approved the use of the extrapolation of results from statistically representative “bellwether” plaintiffs to other “non-test” or “non-bellwether” plaintiffs.

In implementing this method, the Ninth Circuit recognized, although ultimately ignored, that this approach implicated and potentially violated due process rights. While the widespread use of statistical sampling may improve the efficiency of managing a mass tort action, the question remains whether such a procedure adequately protects non-bellwether plaintiffs’ and defendants’ rights to due process and to a jury trial when a court mandates such a procedure. The constitutionality of such a procedure is particularly questionable because courts have denied class action certification on grounds that the issues are too individualistic to be resolved on a class-wide basis.

Part I of this Note will examine the nature of the problem by defining a mass tort, explaining the difficulties that courts confront in dealing with a mass tort action, and examining how the traditional utilization of class actions, consolidation, and bellwether plaintiffs emerged as a partial response to these problems. In Part II, this Note will examine the proposed solutions to this problem as suggested and implemented by the Fifth and Ninth Circuits. Part III will analyze whether these proposals violate due process and the right to a jury trial in the context of the traditional methods used to improve judicial efficiency—class actions and collateral estoppel. Part IV will suggest the correct role that statistical sampling can and should play in mass tort litigation.

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5 See Allison v. Citgo Petroleum Corp., 151 F.3d 402, 423 (5th Cir. 1998) (explaining that the Federal Rules of Civil Procedure protect the right to a jury trial); Panther Pumps & Equip. v. Hydrocraft, Inc., 566 F.2d 8, 17 (7th Cir. 1977) (explaining that the Federal Rules of Civil Procedure were designed to comport with the requirements of due process).

6 See Jack B. Weinstein, Individual Justice in Mass Tort Litigation, 127 (1995) (arguing that mass tort cases have outstripped the ability of the common law to fashion remedies that adequately address these harms); see also Ortiz v. Fibreboard Corp., 119 S. Ct. 2295, 2315 (1999) (noting the “inherent tension” between representative suits and the “day in court” ideal).

7 See infra notes 105-47 and accompanying text.

8 See Hilao v. Estate of Marcos, 103 F.3d 767, 785 (9th Cir. 1996).

9 See, e.g., Sterling v. Velsicol Chemical Corp., 855 F.2d 1188, 1196-97 (6th Cir. 1988) (explaining that the “problem of individualization is often cited as justification for denying class action treatment in mass tort[s]”).
I. THE NATURE OF THE PROBLEM

A. What is a Mass Tort?

The term "mass torts" refers to tortious conduct affecting a large number of persons and giving rise to latent injury.\(^\text{10}\) A mass tort is distinguishable from a mass accident in that a mass accident concerns a single event that causes a uniform injury to a large number of people.\(^\text{11}\) The crucial difference between a mass accident and a mass tort is the nature of injury. Whereas those injured in a mass accident suffer injuries as a result of one uniform cause, plaintiffs in a mass tort suffer a variety of injuries over a long period of time and the causation of such injuries must be evaluated in light of individual aspects of the person.\(^\text{12}\)

The best example of a mass accident is an airplane crash. A large number of people are injured or killed as the result of a single cause—the crash of the airplane. In an airplane crash, causation can be proved on a group basis because the cause of the injury is common to each of the plaintiffs.\(^\text{13}\)

A prime example of a mass tort action is the asbestos litigation. In contrast to the mass accident, injury occurs as a result of exposure over a long period of time.\(^\text{14}\) The exposure results in different diseases and outcomes.\(^\text{15}\) Indeed, not all persons exposed contract illnesses nor does the exposure always produce unique or identifiable injuries.\(^\text{16}\) Thus, the relation between the event and the injury is far less certain and more dependant upon factors related to differences between individuals.\(^\text{17}\)

Crucial distinctions exist between a mass accident and a mass tort. In a mass tort, no single accident occurs to cause similar types of harm nor does a single set of operative facts establish liability.\(^\text{18}\) Most importantly, no single proximate cause

\(^{10}\) See Richard A. Nagareda, In the Aftermath of the Mass Tort Class Action, 85 GEO. L.J. 295, 296 n.1 (1996). In defining "mass torts," Nagareda requires that plaintiffs be geographically disbursed and distinguishes mass tort plaintiffs from toxic tort plaintiffs. See id. Such a distinction is unnecessary here.

\(^{11}\) See id.

\(^{12}\) See In re Northern Dist. of California, Dalkon Shield IUD Prods. Liab. Litig., 693 F.2d 847, 852-53 (9th Cir. 1982).

\(^{13}\) See id. at 853. Even in airplane crashes, some courts have declined to adjudicate such cases as class actions. See, e.g., McDonnell-Douglas Corp. v. U.S. Dist. Court for the Cent. Dist. of Fl., 523 F.2d 1083 (9th Cir. 1975); Causey v. Pan American World Airways, Inc., 66 F.R.D. 392 (E.D. Va. 1975).

\(^{14}\) See Nagareda, supra note 10, at 296.

\(^{15}\) See Malcolm v. National Gypsum Co., 995 F.2d 346, 351 (2d Cir. 1993) (observing the variety of ailments caused by asbestos); infra note 156.

\(^{16}\) See Malcolm, 995 F.2d at 351.

\(^{17}\) See 3 NEWBERG ON CLASS ACTIONS § 17.06 (3d ed. 1992).

applies equally to each potential injured person. In a mass tort case, such as an environmental exposure case or a products liability case, the plaintiffs typically do not have the same intensity, duration, and type of exposure, nor uniformity of disease or injury. In short, mass tort plaintiffs are exposed to a substance for different amounts of time, in different ways, and over different periods. These differences affect the problem of proving individual causation, making traditional representative treatment and efficient adjudication of these claims difficult, if not impossible.

B. The Problems of a Mass Tort Action

Filing a mass tort complaint, a consolidation or a multi-district transfer has the potential of overwhelming the resources of a particular court. The best overview of the problems encountered by courts in dealing with mass torts such as asbestos was summarized by the United States Supreme Court’s recent decision in Amchem Products v. Windsor, relying in large part on the 1990 Report by the United States Judicial Conference Ad Hoc Committee on Asbestos Litigation. The Report’s description of the asbestos problems illuminates potential problems typical to large mass tort litigation:

The most objectionable aspects of asbestos litigation can be briefly summarized: dockets in both federal and state courts continue to grow; long delays are routine; trials are too long; the same issues are litigated over and over; transaction costs exceed the victims’ recovery by nearly

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19 See In re Northern Dist. of California, Dalkon Shield IUD Prods. Liab. Litig., 693 F.2d 847, 853 (9th Cir. 1982).
21 See Georgine v. Amchem Prods., Inc., 83 F.3d 610, 626-28 (3d Cir. 1996), aff’d, 521 U.S. 591 (1997); see also In re American Med. Sys., Inc., 75 F.3d 1069, 1084 (6th Cir. 1996) (stating that absent a single happening or accident, the factual and legal issues of causation differ dramatically from individual to individual).
24 See Alvin B. Rubin, Mass Torts and Litigation Disasters, 20 GA. L. REV. 429, 429 (1986) (“These mass tort claims have a number of similarities: they result in the filing of many suits; they produce high litigation costs; they are generally resolved only after great delay; they affect not only the litigants but other users of the court system; and their total human and economic costs affect all of society.”).
two to one; exhaustion of assets threatens and distorts the process; and future claimants may lose altogether.\(^{25}\)

The Ad Hoc Committee estimated that between thirteen and twenty-one million workers had been exposed to asbestos in the workplace.\(^{26}\) This exposure led to several hundred thousand lawsuits.\(^{27}\) The claimants who suffered the most serious injuries frequently received the least compensation.\(^{28}\) During the 1980s, the asbestos lawsuits comprised more than six percent of all federal filings and were subject to delay that was twice that of other civil suits.\(^{29}\) The resulting transaction costs associated with asbestos litigation leave asbestos victims only thirty-nine cents of every asbestos dollar paid.\(^{30}\) The asbestos litigation produced the real and present danger that transaction costs would exhaust available assets before plaintiffs could collect for judgments, if obtained.\(^{31}\) There is a real concern that many plaintiffs will die before they are compensated and a great many will wait years for their awards.\(^{32}\) At least one judge has expressed the concern that trying "virtually identical lawsuits, one-by-one, will bankrupt both the state and federal court systems."\(^{33}\)

The situation concerning asbestos is not unique. Litigation involving breast implants and Dalkon Shield faced similar delays, bankruptcies, and high transaction costs.\(^{34}\) In the implant litigation, experts estimate that, for every dollar plaintiffs recover, litigation expenses will consume another sixty to seventy-five cents.\(^{35}\) Like the asbestos litigation defendants, the breast implant manufacturers faced thousands

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\(^{25}\) 1990 REPORT OF THE UNITED STATES JUDICIAL CONFERENCE AD HOC COMMITTEE ON ASBESTOS LITIGATION 3 (Mar. 1991) [hereinafter ASBESTOS LITIGATION REPORT].

\(^{26}\) See id. at 6-7.

\(^{27}\) See Windsor, 521 U.S. at 631 (Breyer, J., concurring and dissenting).

\(^{28}\) See id.

\(^{29}\) See ASBESTOS LITIGATION REPORT, supra note 25, at 10-11.

\(^{30}\) See Windsor, 521 U.S. at 632 (Breyer, J., concurring and dissenting); see also Ortiz v. Fibreboard Corp., 119 S. Ct. 2295, 2324 (1999) (Rehnquist, J., dissenting) (noting the high transaction costs of asbestos cases).

\(^{31}\) See ASBESTOS LITIGATION REPORT, supra note 25, at 2, 34-35.

\(^{32}\) See WEINSTEIN, supra note 6, at 141.

\(^{33}\) Spencer Williams, Mass Tort Class Actions: Going, Going, Gone?, 98 F.R.D. 323, 324 (1983). Plaintiffs' attorneys likewise have acknowledged that, at least during the 1980s, the courts had “difficulty handling the caseload or providing adequate and timely compensation for victims.” Kristin Loiacono, Asbestos Litigation is Up in the Air Again, 35-SEP TRIAL 11 (1999) (quoting American Trial Lawyers Association (ATLA) President Richard Middleton).

\(^{34}\) See Higgins, supra note 22, at 53; ADVISORY COMMITTEE ON CIVIL RULES AND THE WORKING GROUP ON MASS TORTS, REPORT ON MASS TORT LITIGATION 24-25 (1999) (discussing the breast implant litigation) [hereinafter REPORT ON MASS TORT LITIGATION]; see also In re A.H. Robins Co., 880 F.2d 709, 712-15 (4th Cir. 1989) (discussing plaintiffs’ efforts to minimize delays).

\(^{35}\) See Higgins, supra note 22, at 53.
of cases and the possibility of trials that could last for months.\textsuperscript{36} As a result of mass tort litigation, the manufacturer of Dalkon Shield, A.H. Robbins, and at least one implant maker, Dow Corning, filed for bankruptcy.\textsuperscript{37}

The courts continue to be confronted with a "rising tide of mass tort filings."\textsuperscript{38} As Judge Anthony Scirica correctly observed, "It's asbestos. It's breast implants. It's fen-phen [diet drugs]."\textsuperscript{39} Although the Fifth Circuit declined to certify "what may be the largest class action ever attempted in federal court,"\textsuperscript{40} contending that class certification of all nicotine-dependent smokers would be tantamount to "judicial blackmail,"\textsuperscript{41} the plaintiffs' lawyers who brought the private tobacco case have instead begun filing claims in state courts.\textsuperscript{42} These cases include classes as large as one million people.\textsuperscript{43} While some of these cases have been certified as class actions, the highly individualistic questions of addiction and causation would still have to be resolved on an individual basis.\textsuperscript{44} Thus, the mere resolution of the issues certified for class action treatment will not fully resolve these cases.

If the asbestos litigation is a prediction of the future of mass tort actions, Congress cannot be counted on to respond to any particular litigation crisis. Calls for congressional action to deal with the asbestos litigation problems emerged as early as 1985.\textsuperscript{45} In 1990, the Ad Hoc Committee recommended that Congress create a

\textsuperscript{36} See id.

\textsuperscript{37} See In re Dow Corning Corp., 211 B.R. 545, 574-76 (Bankr. E.D. Mich. 1997); WEINSTEIN, supra note 6, at 137.

\textsuperscript{38} Higgins, supra note 22, at 53 (quoting Judge Anthony Scirica); see also Ortiz v. Fibreboard Corp., 119 S. Ct. 2295, 2302 (1999) (noting the "elephantine mass of asbestos cases").

\textsuperscript{39} Higgins, supra note 22, at 53 (quoting Judge Anthony Scirica); see also REPORT ON MASS TORT LITIGATION, supra note 34, at 9 (explaining that "[m]ass tort litigation is not a temporary phenomenon").

\textsuperscript{40} Castano v. American Tobacco Co., 84 F.3d 734, 737 (5th Cir. 1996).

\textsuperscript{41} Id. at 746; see also In re Rhone-Poulenc Rorer Inc., 51 F.3d 1293, 1300 (7th Cir. 1995) (reversing class certification of a class of all hemophiliacs exposed to HIV through blood transfusions because the potential that one jury would "hold the fate of an industry in the palm of its hand").

\textsuperscript{42} See Julie Gannon Shoop, COURTS SPLIT ON STATE TOBACCO CLASS ACTIONS, 34-JAN TRIAL 18, at 18 (noting that the coalition of more than 60 plaintiff law firms that filed the case is now pursuing the same claims by filing smaller class actions in state courts around the country).

\textsuperscript{43} See id.; see also Milo Geyelin, IN FLORIDA, A VAST TOBACCO CASE LOOMS, WALL ST. J., Oct. 1, 1998 at B1 (estimating that Engle v. R.J. Reynolds Tobacco Co., 672 So. 2d 39 (Fla. App. 1996), may involve 40,000 to 1 million smokers).

\textsuperscript{44} See Barnes v. American Tobacco Co., 176 F.R.D. 479 (E.D. Pa. 1997) (holding that the issues of addiction and treatment require individual treatment); Engle, 672 So. 2d at 41 (affirming class certification on behalf of all smokers but noting that certain individual issues will have to be tried for each class member).

\textsuperscript{45} See In re School Asbestos Litig., 789 F.2d 996, 1001 (3d Cir. 1986) (citing the 1985
national asbestos dispute resolution scheme, but to date, there has been no congressional response. If the number and size of mass tort actions continue to flood the courts, congressional response by legislation for each new mass tort would be impractical. If such an approach prevailed, Congress would be faced with creating resolution schemes for asbestos, breast implants, tobacco, and now fen-phen. In the absence of a comprehensive congressional scheme to deal with mass tort actions, the federal courts, lacking authority to replace state tort law, have attempted to utilize the current tools available to craft judicial solutions to the problems of mass tort actions.

C. The Traditional Skepticism About Using Class Actions for Mass Torts

Class actions are generally an effective and efficient means for a court to handle a large number of similar claims and bind all the parties. Class actions allow a

Rand Corporation report).

46 See Amchem Prods., Inc. v. Windsor, 521 U.S. 591 (1997); see also Ortiz v. Fibreboard Corp., 119 S. Ct. 2295, 2302 (1999) (calling for a national legislation to deal with asbestos litigation). Although Congress has provided a solution in the Bankruptcy Code, see 11 U.S.C. § 524 (1994), its applicability is limited to disposing of claims only when a defendant declares bankruptcy. See Ortiz, 119 S. Ct. at 2300 (reversing global settlement of "limited fund" class action where the only existence of a limited fund was due to the parties' agreement); MANUAL FOR COMPLEX LITIGATION § 33.29 (3d ed. 1995); see also Martin v. Wilks, 490 U.S. 755, 762 n.2 (1989) (explaining that special remedial schemes such as bankruptcy are consistent with due process).

47 In March 1999, House Judiciary Committee Chairman Henry Hyde introduced the Fairness in Asbestos Compensation Act. See Fairness in Asbestos Compensation Act, H.R. 1283, 106th Cong. (1999). Neither this proposal nor any other appears likely to become law anytime soon. See Loiacono, supra note 33, at 11 (quoting Henry Hyde as acknowledging that the hearings on the bill are "only the beginning"). Indeed, both plaintiffs' attorneys and at least one manufacturer appear opposed to the bill. See id. (noting that ATLA president Richard Middleton and general counsel for Owens-Corning offered testimony opposing the Bill). The joint opposition suggests that passage of a bill dealing with asbestos is unlikely even a decade after the height of the problem. See id.

48 For example, Judge Weinstein has proposed either a quasi-national insurance scheme or a "National Disaster Court" that would address injuries in mass tort cases. See Weinstein, supra note 6, at 32-36. For discussion of other comprehensive solutions, see REPORT ON MASS TORT LITIGATION, supra note 34, at 48-59.

49 See Weinstein, supra note 6, at 136 ("Faced with innovative district court solutions to seemingly intractable problems, the appellate courts have begun to be slightly more sympathetic to class actions in mass tort cases."); see also REPORT ON MASS TORT LITIGATION, supra note 34, at 29 (noting that Judge Schwarzer has observed that "the pressures generated by mass tort litigation are driving the courts toward comprehensive aggregative procedures").

50 See Weinstein, supra note 6, at 26; see also Sterling v. Velsicol Chem. Corp., 855 F.2d 1188, 1196 (6th Cir. 1988) (acknowledging that class actions "achieve the economies
single person, or a small number of people, whom the court designates as representative of the other members of the class, to resolve a large number of claims in an efficient manner through the use of a single trial, even if in bifurcated stages.\textsuperscript{51} A court can make a determination of liability, and particularly of causation, at one time if a single event or series of events allegedly caused the same or essentially similar effect on each plaintiff.\textsuperscript{52}

There is historical and continuing skepticism about the usefulness of the class action device in mass tort litigation.\textsuperscript{53} This skepticism stems from the idea that proposed class members have a "vital interest in controlling their own litigation" when it involves personal injuries.\textsuperscript{54} This historical distrust continues to the present day as evidenced by the Supreme Court's recent decision in \textit{Amchem Products v. Windsor}.\textsuperscript{55} Although the Supreme Court recognized that "the text of the rule does not categorically exclude mass tort cases from class certification and district courts... have been certifying such cases in increasing number,"\textsuperscript{56} the Court urged lower courts to heed the comments to Rule 23(b)(3),\textsuperscript{57} which explicitly caution against the use of class actions in mass tort cases.\textsuperscript{58} Accordingly, most courts have denied motions for class certification in mass tort personal injury actions, especially actions alleging negligence over extended periods.\textsuperscript{59}  

of time, effort, and expense").


\textsuperscript{52} See \textit{WEINSTEIN}, supra note 6, at 26.

\textsuperscript{53} See \textit{In re Agent Orange Prod. Liab. Litig.}, 818 F.2d 145, 150 (2d Cir. 1987) (explaining the weaknesses of proving causation by a class action device when the strength of plaintiff's cases is widely varied and uncertain). For a brief overview of the historical basis for courts' distrust of class actions in mass tort, personal injury, and wrongful death cases, see 3 \textit{NEWBERG}, supra note 17, § 17.02.

\textsuperscript{54} Yandle v. PPG Indus., Inc., 65 F.R.D. 566, 572 (E.D. Tex. 1974); \textit{see also} Ouellette v. International Paper Co., 86 F.R.D. 476, 483 (D. Vt. 1980) (noting that personal injury "claims are likely to be the kind that individuals have an interest in prosecuting separately").

\textsuperscript{55} 521 U.S. 591 (1997).

\textsuperscript{56} Id. at 625.

\textsuperscript{57} See id.

\textsuperscript{58} See \textit{FED. R. CIV. P. 23(b)(3)} advisory committee's note ("A 'mass accident' resulting in injuries to numerous persons is ordinarily not appropriate for a class action because of the likelihood that significant questions, not only of damages but of liability and defenses of liability, would be present, affecting the individuals in different ways.").

\textsuperscript{59} See, e.g., \textit{In re Rhone-Polenc Rorer Inc.}, 51 F.3d 1293, 1304 (7th Cir. 1995) (observing that most federal courts have refused to permit the use of class action device in mass tort cases); \textit{In re Agent Orange Prod. Liab. Litig.}, 818 F.2d 145, 164 (2d Cir. 1987) (denying class certification and criticizing "usefulness of class actions" due to individualistic nature of determining causation issue in regards to defoliant exposure).
Courts generally deny motions for class certification, finding mass adjudication inappropriate, if no single event or accident causes similar harm and no single proximate cause applies equally to each potential class member. Leading cases that have certified classes in mass torts have not generally certified them for resolution of personal injury claims.

In *In re Agent Orange Product Liability Litigation*, the Second Circuit approved class certification solely for the purpose of resolving the military contractor defense. The military contractor defense alone was common to all the plaintiffs and was of central importance to the case. The Second Circuit noted that “if the [military contractor] defense succeeds, the entire litigation is disposed of.” Had the action involved civilians exposed to dioxin, the Second Circuit would have viewed class certification as error. The Third Circuit took a similar view in *In re School Asbestos Litigation*. The court in *School Asbestos* noted that class actions are appropriate for property damages, but not personal injury cases, because asbestos has the same effect on different buildings, whereas the effect on different people is not the same. This view, therefore, denies class certification to resolve any of the common issues of duty, breach, or generic causation, in part, because it rejects the idea that certification would improve the efficiency of the litigation.

Even those courts that have allowed class certification for personal injury mass tort cases have not allowed matters of individual causation to be determined on a representative basis. In *Sterling v. Velsicol Chemical Corp.*, the Sixth Circuit approved class certification in an environmental “toxic tort” case, which alleged personal injuries occurred as a result of ingesting water contaminated by the defendant’s landfill. The Sixth Circuit rejected the idea that “individualization of

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60 See *In re Northern Dist. of California, Dalkon Shield IUD Prods. Liab. Litig.*, 693 F.2d 847, 852 (9th Cir. 1982); CARL ROBERT ARON ET AL., 1 CLASS ACTIONS: LAW AND PRACTICE §15:16 (1987) (“In mass tort actions, individual questions are generally held to predominate over common questions.”).

61 See Valentino v. Carter-Wallace, Inc., 97 F.3d 1227, 1231 (9th Cir. 1996) (stating that *In re Agent Orange* and *In re School Asbestos* are the leading cases certifying classes in mass torts); see also *In re Agent Orange*, 818 F.2d at 166-67 (allowing class certification due to the centrality of the military contractor defense); *In re School Asbestos Litig.*, 789 F.2d 996, 1010-11 (3d Cir. 1986) (allowing class certification for property damages only).

62 818 F.2d 164 (2d Cir.1987).

63 See id. at 166.

64 See id. at 167.

65 Id.

66 See id. at 166.

67 789 F.2d at 996 (3d Cir. 1986).

68 See id. at 1009-11; see also *In re Three Mile Island Litig.*, 87 F.R.D. 433, 438-42 (M.D. Pa. 1980) (certifying class action for economic claims, but not for personal injuries).

69 855 F.2d 1188 (6th Cir. 1988).

70 See id. at 1191-93.
issues...justifi[es]...denying class action treatment in mass tort[s]" in favor of "the increasingly insistent need for a more efficient method of disposing of a large number of lawsuits arising out of a...single course of conduct." The mere fact that individual damages would have to be determined after common questions concerning the defendant’s liability did not forbid the use of class actions. The Sixth Circuit approved the district court’s certification of five representative plaintiffs to represent the remainder of the class on the issue of generic causation. Resolution of this issue only determined that plaintiffs’ exposure to the chemical contaminants had the capacity to cause the harm alleged. Each individual plaintiff was still required to prove proximate cause—namely to show that his or her specific injuries or damages were proximately caused by ingestion or other use of contaminated water. The Sixth Circuit’s admonition that “generalized proofs will not suffice to prove individual damages” clearly contemplated further adjudication of the plaintiffs’ claims on the issue of individualized causation.

The Sixth, Fifth and Ninth Circuits’ divergence from the Second, Third, and Seventh Circuits’ view merely concerns the efficiency of this approach. The Second Circuit in Agent Orange recognized that even if courts could resolve generic causation on a class basis, they would have to conduct separate trials on individual causation for each plaintiff. As the Second Circuit explained, class certification on a generic causation issue has three possible outcomes: (1) the exposure always causes harm; (2) the exposure never causes harm; or (3) exposure may or may not cause harm. The Sixth Circuit recognized that resolution of this issue, along with other liability questions, may improve the efficiency of handling mass tort cases;

71 Id. at 1196-97.
72 See id. at 1197.
73 See id. at 1200.
74 See id.
75 Id.
76 This issue was also recognized by the Second Circuit in deciding the inefficiency of class treatment of the inefficiency of the generic causation issue. See In re Agent Orange, 818 F.2d 145, 164 (2d Cir. 1987).
77 See In re Fibreboard Corp., 893 F.2d 706, 712 (5th Cir. 1990) (recognizing that class action treatment is appropriate for trial of common defenses and punitive damages).
78 See Valentino v. Carter-Wallace, Inc., 97 F.3d 1227, 1233 (9th Cir. 1996) (expressing approval of the Sixth Circuit approach). Although the Ninth Circuit denied certification in In re Northern District of California, Dalkon Shield IUD Litigation, 693 F.2d 847, 852 (9th Cir. 1982), the Dalkon Shield decision did not prohibit certification of classes in every mass tort case. See Valentino, 97 F.3d at 1230.
79 Cf. Valentino, 97 F.3d at 1230-33 (discussing the differences in class certification in product liability personal injury cases between the Second, Third, and Seventh Circuit with those of the Sixth and Ninth Circuits).
80 See Agent Orange, 818 F.2d at 164.
81 See id. at 164-65.
indeed, if the judge or jury were to find that there was no evidence of exposure or that the exposure never causes harm, there would be no need for further adjudication. However, even if common questions are resolved, the trial court is left with the task of trying hundreds if not thousands of individual cases—a process that could take years.

D. The Traditional Use of Consolidation & Bellwether Plaintiffs

Courts rejecting class action treatment for the common issues in mass tort personal injury cases remain faced with the specter of protracted proceedings and lengthy delays demanded by resolving hundreds or thousands of claims. Those courts that refuse to certify mass tort class actions often utilize consolidation under Rule 42 or occasionally joinder under Rule 20. The transfer of actions in different districts under the coordination and consolidation of the Multidistrict Litigation

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82 See, e.g., In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 781-83 (3d Cir. 1994) (granting summary judgment on all plaintiffs’ claims after determining that plaintiffs had not proved sufficient exposure to dioxins and furans); Thomas v. FAG Bearings Corp., 846 F. Supp. 1382, 1398-99 (W.D. Mo. 1994) (granting summary judgment because third party plaintiff failed to show that defendants’ release caused the contamination).

83 See Owens-Illinois, Inc., v. Levin, 792 F. Supp. 429, 431 (D. Md. 1992) (estimating that trying 9000 asbestos cases would take over 100 years); Cimino v. Raymark Indus., 751 F. Supp. 649, 652 (E.D. Tex. 1990) (“If the Court could somehow close thirty cases a month, it would take six and one-half years to try these cases.”), aff’d in part, vacated in part, 151 F.3d 297 (5th Cir. 1998). Apparently, the courts in Texas are more efficient than those in Maryland, but nonetheless, trying a large number of cases strains the courts’ resources.

84See Rose v. Medtronic, Inc., 107 Cal. App. 3d 150, 155, 166 (1980) (citing a list of federal courts declining to certify mass tort class actions and stating that “consolidation of actions is the preferred procedure”); see also Ripa v. Owens-Corning Fiberglass Corp., 660 A.2d 521, 533 (N.J. Super. Ct. App. Div. 1995) (observing that “tons of thousands of asbestos claims are proceeding in the federal courts on a consolidated basis”). FED. R. CIV. P. 42(a) provides:

When actions involving a common question of law or fact are pending before the court, it may order a joint hearing or trial of any or all the matters in issue in the actions; it may order all of the actions consolidated; and it may make such orders concerning proceedings therein as may tend to avoid unnecessary costs or delay.

85 The Federal Rules of Civil Procedure allow large numbers of plaintiffs to join a single action. Rule 20 allows for permissive joinder where the plaintiffs assert a right to relief jointly or assert separate rights to relief arising out of the same transaction or occurrence. See FED. R. CIV. P. 20. Although, a large number of plaintiffs does not automatically preclude joinder, multiple plaintiffs claiming exposure to the same source of toxins at different places and at different times probably cannot meet the “same transaction or occurrence” requirement of Rule 20. See Shawn Copeland et al., Toxic Tort and Environmental Matters: Civil Litigation, 64 ALI-ABA 33 (Jan. 22, 1998).
(MDL) procedures can also accomplish such consolidation.\textsuperscript{86} Although the MDL procedures contemplate that actions are transferred for the purposes of pretrial proceedings and are to be remanded for trial to the district from which the action was transferred, in practice only a small percentage of actions are remanded.\textsuperscript{87} Most actions are either settled in the transferee court or tried in the transferee court pursuant to 28 U.S.C. § 1404(a), change of venue, or parties’ consent.\textsuperscript{88} Under any of the consolidation mechanisms, the primary prerequisite is that the actions involve a common question of law or fact, and that the common issue be central to the actions to be consolidated.\textsuperscript{89}

Although consolidation improves the efficiency of the pre-trial process, courts still face the daunting possibility of adjudicating numerous similar claims.\textsuperscript{90} Unlike a class action, consolidation of separate actions “does not merge the suits into a single cause, or change the rights of the parties, or make those who are parties in one suit parties in another.”\textsuperscript{91} Accordingly, consolidated actions do not permit a claimant the right to “opt-out” as does a class action certified under Rule 23(b)(3).\textsuperscript{92}

\textsuperscript{86} See 28 U.S.C. § 1407 (1994). Multi-district litigation procedures provide that upon the motion of any party or upon the court’s own motion, the nine-member Judicial Panel on Multi-district Litigation will order transfer if the following prerequisites are met: (1) the actions to be coordinated or consolidated involve one or more common questions of fact; (2) transfer will promote the convenience of the parties and witnesses; and (3) transfer must result in the just and efficient conduct of the actions transferred. See id.

\textsuperscript{87} See Copeland et al., supra note 85, at 40.

\textsuperscript{88} See id.; see also 28 U.S.C. § 1404(a) (1994) (allowing transfer “[f]or the convenience of parties . . . in the interest of justice”). Indeed, in a complicated mass tort litigation, it is probably in the interest of the parties to have a judge familiar with the procedural and substantive background of the litigation preside over the trial.

\textsuperscript{89} See, e.g., Molever v. Levenson, 539 F.2d 996 (4th Cir. 1976) (demonstrating the harmful effects of erroneous consolidation when there is not a “common question of law or fact”).

\textsuperscript{90} See MANUAL FOR COMPLEX LITIGATION § 323 (3d ed. 1995) (“[I]n appropriate circumstances, a joint trial of common issues may be feasible, followed by separate trials of remaining issues.”).

\textsuperscript{91} In re TMI Litig., Nos. 96-7623 et al., 1999 U.S. App. LEXIS 28415, *336 (3d Cir. Nov. 2, 1999) (quoting Johnson v. Manhattan Ry. Co., 289 U.S. 479, 497 (1933)); Advey v. Celotex, 962 F.2d 1177, 1180 (6th Cir. 1992) (explaining that consolidation “does not merge the independent actions into one suit”); see also Charles Silver, Comparing Class Actions and Consolidations, 10 Rev. Litig. 495, 497 (1991) (“[A] class action is a single lawsuit that binds a large number of people, while a consolidation is a set of independent lawsuits that are processed in a coordinated and relatively efficient way.”).

\textsuperscript{92} See WEINSTEIN, supra note 6, at 139.
The use of "bellwether" or "test" plaintiffs has developed as an acceptable alternative to the use of class actions. The bellwether approach focuses on the trial of a small number of plaintiffs, usually with the claims of the other plaintiffs stayed pending resolution of the test cases. There are essentially four traditional methods of selecting bellwether plaintiffs: (1) plaintiffs' counsel selects all of the bellwether plaintiffs; (2) each side selects an equal number of representatives; (3) each side nominates plaintiffs, and the judge selects the representatives; or (4) representatives are selected from categories of plaintiffs. The traditional use of bellwether trials facilitates settlement by providing a representative picture of a range of verdicts.

Each method of selection, however, has its drawbacks. As it is best to negotiate from the strongest position possible, allowing the parties to pick or recommend bellwether plaintiffs results in each side picking the most advantageous cases for their position. If plaintiffs select all the bellwethers, they will pick what they believe are the strongest cases. Each side choosing or recommending the bellwether plaintiffs will probably result in a trial of the extremes—the strongest picked by the plaintiff and the weakest picked by the defendant—without a clear representation of the middle-of-the-road claims. Selection of cases by random sampling, which is designed to predict the average outcome, may result in the opposite problem because it would ignore the best and the worst cases.

Resolution of the bellwether plaintiffs' claims may not resolve the entire dispute even if the court decides on a motion for summary judgment that there are insufficient

93 "The term bellwether is derived from the ancient practice of belling a wether (a male sheep) selected to lead his flock." In re Chevron U.S.A., Inc., 109 F.3d 1016, 1019 (5th Cir. 1997). The ultimate purpose was to determine the confidence of the flock "that the wether would not lead them astray." Id. A similar analogy applies to the use of test plaintiffs in mass torts.

94 See Faulk et al., supra note 20, at 791-92.

95 See Copeland et al., supra note 85, at 44.


97 See Copeland et al., supra note 85, at 44; Faulk et al., supra note 20, at 806.

98 See, e.g., In re Chevron, 109 F.3d at 1019 (explaining that where each side picks the bellwethers, it is simply a trial of the best and worst cases).

99 See Faulk et al., supra note 20, at 793; Petition for Writ of Certiorari at 10, John Crane, Inc. v. Abate, 119 S. Ct. 1096 (1999) (No. 98-873) (arguing that plaintiffs chose the "most sympathetic and inflammatory" cases that were "wholly atypical" of the other 1300 consolidated claims).

facts to establish liability on a common issue.\textsuperscript{101} Alternatively, a trial of the bellwether claims may facilitate a settlement of the remaining non-bellwether plaintiffs.\textsuperscript{102} If the trial of the bellwether plaintiffs does not result in a settlement of the remaining claims, the court is left potentially with the same daunting task it encountered before the bellwether trial—trial of the remaining non-bellwether claims.\textsuperscript{103} Although the court may attempt to continue to try select groups of plaintiffs until a settlement is reached, the possibility remains that the court would have to try all of the consolidated cases.

II. THE COURTS ATTEMPT TO CRAFT A POSSIBLE SOLUTION

Whether the courts use a class action or consolidation, courts still face the possibility of resolving issues unique to individual plaintiffs, particularly the question of individual causation. In the absence of congressional response to the problems, district courts have resorted to creative procedures to improve the efficiency of resolving mass torts.\textsuperscript{104} In the last two years, two United States Courts of Appeals have approved the extrapolation of the results of bellwether trials to non-bellwether plaintiffs. Although both approaches utilize similar underlying principles, the mechanics of the approaches differ.

A. The Ninth Circuit's Approach: Hilao v. Marcos

Victims of torture, summary execution, and disappearance during the regime of the former President of the Philippines, Ferdinand E. Marcos, brought claims in federal district court in Hawaii for human rights violations during the period when Marcos imposed martial law (from September 1972 to February 1986).\textsuperscript{105} The plaintiffs filed suits for damages in the form of a class action, as well as individual direct actions.\textsuperscript{106} Granting class certification to all civilian citizens of the Marcos

\textsuperscript{101} See, e.g., In re TMI Litig., Nos. 96-7263 et al., 1999 U.S. App. LEXIS 28415, at *347 (3d Cir. Nov. 2, 1999) (reversing the extension of summary judgment to non-Trial plaintiffs for failure to present sufficient evidence of exposure); see also Deluca v. Merrel Dow Pharmaceuticals, 911 F.2d 941, 952 (3d Cir. 1990) (explaining that collateral estoppel principles did not permit the extension of the findings of a multi-district litigation, consolidated common issues trial to plaintiffs not parties to that trial).

\textsuperscript{102} See Faulk et al., supra note 20, at 792.

\textsuperscript{103} See WEINSTEIN, supra note 6, at 139-41 (discussing the problems of consolidation in the asbestos context).

\textsuperscript{104} See MANUAL FOR COMPLEX LITIGATION § 38.2 (3rd ed. 1995).


\textsuperscript{106} See In re Marcos, 910 F. Supp. at 1461.
Regime from 1972 to 1986 resulted in a class of nearly 10,000 claimants. The district court split the trial into three phases: (1) liability, (2) exemplary damages, and (3) compensatory damages. In Phase III, the compensatory damage phase, the court allowed the jury to consider the damages to a random sample of plaintiffs as representative of the injuries suffered by those in three subclasses. The court utilized this random sample representative method because "[p]ragmatically, the jury could not hear testimony of nearly 10,000 plaintiffs . . . within any practicable and reasonable time, to do justice to the class members." Importantly, however, individual plaintiffs were allowed to opt out of the certified class action and present their compensatory damage claims to the jury in a separate part of the trial.

After the jury returned a verdict in favor of the plaintiff on liability in Phase I, and the jury returned a verdict of $1.2 billion in punitive damages in Phase II, the judge appointed a special master, as a court-appointed expert, to supervise proceedings related to the compensatory damage phase of the trial. In the compensatory phase, the class action plaintiffs presented their case to the jury by using a random sample of plaintiffs chosen by a statistical sampling expert. Using a well-known statistical tool, the expert formulated a plan to randomly select 137 claims. This selection process achieved a "95% statistical confidence level that all claims would fall within the ambit of the 137 randomly selected claims." The special master then reviewed the testimony of the 137 to determine: (1) whether the abuse claimed fell within one of the three definitions presented during the liability phase; (2) whether the Philippine military or paramilitary participated in the abuse; and (3) whether the abuse occurred during the class period. The Special Master made damage determinations by ranking each claim based on seven factors. When

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107 See id. at 1462.
108 See id.
109 See id. The three subclasses consisted of (1) tortured plaintiffs, (2) families of those subjected to summary execution, and (3) families of those who disappeared as a result of the actions of Marcos. See id.
110 Id.
111 See id.
112 See id. at 1463-64.
113 See id. at 1464. The statistician was an expert in the field of inferential statistics and survey sampling. See id.
114 See id. at 1465. The 137 claims were randomly selected by computer. See Hilao, 103 F.3d at 782. Of the claims selected, 67 were for torture, 52 were for summary execution, and 18 were for disappearance. See id.
116 See id. at 1465.
117 These factors consisted of the following: (1) physical torture and the methods used; (2) mental abuse; (3) amount of time the torture lasted; (4) length of detention; (5) physical and/or mental injuries; (6) victim's age; and (7) actual losses. See id. at 1466. Using the 95% validity rate, the Special Master also took into account the number of claims likely to
the jury received the Special Master's testimony and report, however, the court specifically instructed the jury that it was entitled to modify or reject the recommendation of the Special Master on the basis of the testimony of the 137 plaintiffs. The jury was entitled to make its own judgment as to the individual damages of the 137 bellwether plaintiffs and aggregation of those claims to the class. After five days of deliberation, the jury found 131 of the randomly sampled claims to be valid and returned a verdict of approximately $766 million, only $1 million less than the Special Master recommended.

The district court considered the implications of statistical sampling on the defendant's constitutional rights to due process and to a jury trial. In making this determination, the district court relied heavily on the reasoning in *Cimino v. Raymark Industries*, the analysis of academic commentators that aggregate trials do not violate due process, and the procedural due process test set forth by the Supreme Court in *Matthews v. Eldridge*. The district court concluded that "the aggregate trial is, in some vital respects, superior to the individual trial" and held that the use of statistical sampling did not violate due process. Similarly, the court determined that the procedures used to facilitate the presentation of evidence did not violate the defendant's Seventh Amendment right to a jury trial as the "[p]ragmatic application of [the rules of evidence and civil procedure] ... is all that is necessary."

On appeal to the Ninth Circuit, the defendant challenged the method used by the court to determine the validity of the class claims. Due to the defendant's failure to raise questions about the determination of the size of the compensatory award, the only issue that the Ninth Circuit considered was the validity of the methodology used

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*See Schreiber & Weissbach, supra note 117, at 486.*

*See id.*

*See id.* The ultimate determination by the jury varied somewhat from the recommendation of the Special Master; for example, the jury reinstated three of the five claims found to be invalid and did not follow 46 of the recommendations for statistically sampled claims. *See Schreiber & Weissbach, supra note 117, at 486.*

*See In re Marcos, 910 F. Supp. at 1467.*


*In re Marcos, 910 F. Supp. at 1467 (quoting Saks & Blanck, supra note 123, at 827).*

*Id.* at 1468.

*See Hilao v. Marcos, 103 F.3d 767, 784 (9th Cir. 1996).*
in determining the individual class claims. The only question involved in determining the class members' claims was whether the individual claims were proven by sufficient evidence, because the jury had already decided the general issue of liability. The Ninth Circuit clearly recognized that the due process claim "raise[d] serious questions." The Ninth Circuit relied on Matthews to conclude that: (1) the unorthodox methodology could be justified by the time and judicial resources required to try the nearly 10,000 claims; and (2) the defendant's only interest was in the total amount of damages, not to whom the damages were paid. The Ninth Circuit did, however, note that the procedure used might present a violation of the due process rights of class members, but it did not consider that issue, as no plaintiff raised it on appeal.

The Hilao decision marked a departure from prior Ninth Circuit jurisprudence on the utility of mass tort class actions. The critical distinction is whether individual causation must be proven by individual trials or whether a "summary review of transcripts of selected . . . victims . . . able to be deposed" comports with the notion of due process. Although the unique facts of Hilao present different causation issues than those in the typical mass tort case, an analogy exists. With each individual, questions apply to individual causation issues; for example, whether the action was justified and the degree of injury and proximate cause. Even assuming the Ninth Circuit correctly rejected these issues raised on defendant's appeal, two questions remain: (1) whether mandatory statistical sampling violates a plaintiff's due process rights by awarding damages based solely on the testimony of a statistical expert; and (2) whether the determination of individual causation based solely on a statistical expert's testimony violates the right to a jury trial.

128 Unfortunately, the defendant's appeal was apparently poorly litigated. The grounds on which the defendant challenged the due process claims were unclear, and the defendant failed to question the propriety of the compensatory damages methodology until its reply brief, resulting in waiver of the issue. See id. at 784 & n.11.

129 See id. at 784.

130 Id. at 785.

131 See id. at 786 (citing Matthews, 424 U.S. at 334).

132 See Hilao, 103 F.3d at 785 & n.13. Given the fact that plaintiffs were entitled to opt out of the class, there would seem to be little harm to any plaintiff's due process rights.

133 Compare id. with Valentino v. Carter-Wallace, Inc., 97 F.3d 1227 (9th Cir. 1996) (noting due process concerns as to adequacy of notification of potential plaintiffs and abuse of discretion regarding the predominance requirement). Citation of Stering v. Velsicol Chem. Co. in the Hilao dissent by Judge Rymer illuminates this critical departure. See Hilao, 103 F.3d at 788 (Rymer, J., concurring and dissenting) (explaining that "transcripts of a selected sample of victims" for inferring the extent of injury does not "comport[ ] with fundamental notions of due process").

134 Hilao, 103 F.3d at 788.
B. The Fifth Circuit’s Proposal: In re Chevron

The Fifth Circuit considered the question of utilizing statistics to extrapolate the results of bellwether trials, not in the context of a class action, but in the context of a Rule 42(a) consolidation. More than 3000 plaintiffs brought suit against Chevron for personal injuries and property damage as a result of drinking water contaminated by Chevron’s chemical waste. The district court approved a trial plan for adjudicating the issues of “general liability or causation” and individual causation using thirty bellwether plaintiffs, fifteen selected by the plaintiffs and fifteen selected by the defendants. The defendant, Chevron, petitioned the Fifth Circuit for a writ of mandamus for relief from the trial plan. In evaluating the trial plan, the Fifth Circuit readily concluded that a selection process, whereby each side chose an equal number of bellwether plaintiffs, could be used to facilitate settlement, but not as representative of the remaining claims. The Fifth Circuit’s holding applied to this “particular sample of thirty cases . . . lacking in representativeness.” The court in Chevron suggested that a trial court could choose a representative sample by inferential statistics. In order to comport with due process concerns, the district court had to find that the sample was representative based on “competent, scientific, statistical evidence that identifies the variables involved and that provides a sample of sufficient size so as to permit a finding that there is a sufficient level of confidence that the results obtained reflect results that would be obtained from trials of the whole.” Relying heavily on the Ninth Circuit’s decision in Hilao, the Fifth Circuit concluded that a “unitary trial” of a randomly selected, statistically significant sample would comport with the “historical understanding of both procedural and substantive due process.”

Although the Chevron decision approved the use of extrapolation of the results of “bellwether plaintiffs,” there are important limitations. First, and perhaps most importantly, the extrapolation of randomly selected, statistically significant bellwether plaintiffs in Chevron would be accomplished with the mutual assent of the parties.

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135 See In re Chevron U.S.A., Inc., 109 F.3d 1016, 1017 (5th Cir. 1997); see also FED. R. CIV. P. 42(a); supra note 84.

136 See In re Chevron, 109 F.3d at 1017.

137 See id.

138 See id. at 1016.

139 See id. at 1019-20.

140 Id. at 1020.

141 See id.

142 Id.

143 Id. at 1021 (citing Hilao, 103 F.3d at 782-84, 786).

144 See id. at 1022.

145 It is clear that defendant Chevron would have agreed to the use of a statistically sound bellwether trial process. See id. at 1022 (Jones, J., concurring).
Second, the approval of a unitary trial based on extrapolating bellwether plaintiffs from statistical samples is arguably dicta. Finally, even among the Fifth Circuit panels, there is disagreement about the validity of such a trial plan.

C. The Suggestion By Professors Saks & Blanck: Cimino v. Raymark Industries

Numerous commentators have endorsed and heralded the utility of statistical sampling. Professors Saks and Blanck are perhaps the best known supporters of extrapolating statistical sampling techniques. Professors Saks and Blanck utilized, by way of illustration, the aggregation applied in Cimino v. Raymark Industries, an action consolidating over 3000 asbestos cases. In Cimino, the court certified the consolidated cases for class action treatment and divided the trial into three phases. In Phase I, the court utilized procedures approved by the Fifth Circuit in

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146 See Cimino v. Raymark Indus., 151 F.3d 297, 318-19 (5th Cir. 1998).
147 Compare In re Chevron, 109 F.3d at 1020-21 (stating that such a trial plan can be valid if it is representative) with Cimino, 151 F.3d at 336-38 (providing that such a trial plan fails to adequately address the issue of damages).
148 See, e.g., Bone, Statistical Adjudication, supra note 100; Victoria Branton, A Case for the Jury?: Seventh Amendment Rights in Asbestos Litigation, 3 TEX. F. ON C.L. & C.R. 231 (1998) (arguing that “case aggregation” is consistent with the Seventh Amendment); Faulk et al., supra note 20; Saks & Blanck, supra note 123; see also Manuel L. Real, What Evil Have We Wrought: Class Action, Mass Torts, And Settlement, 31 LOY. L.A. L. REV. 437 (1998) (advocating class action treatment of mass torts); Laurens Walker & John Monahan, Sampling Damages, 83 IOWA L. REV. 545, 546 (1998) (“[A] complete solution of the numbers problem in mass torts can only be achieved by abandoning any pretense of individual adjudication and random sampling damages without apology.”); Patrick Woolley, Mass Tort Litigation and The Seventh Amendment Reexamination Clause, 83 IOWA L. REV. 499, 502 (1998) (arguing that class action treatment of mass torts does not violate the Seventh Amendment).
149 See Saks & Blanck, supra note 123 and accompanying text. The Chevron court relied on Professor Saks and Blanck’s article for support. See In re Chevron, 109 F.3d at 1020. Moreover, numerous commentators have endorsed or sought to improve upon their analysis. See, e.g., Bone, Statistical Adjudication, supra note 100; Faulk et al., supra note 20; see also Kenneth S. Bordens & Irwin A. Horowitz, The Limits of Sampling and Consolidation in Mass Tort Trials: Justice Improved or Justice Altered?, 22 L. & PSYCHOL. REV. 43 (1998) (arguing for improvements and recognizing the deficiencies in extrapolating bellwether results, but advocating their use in mass tort cases).
150 751 F. Supp. 649 (E.D. Tex. 1990), aff’d in part and vacated in part, 151 F.3d 297 (5th Cir. 1998). Although a three-judge panel on the Fifth Circuit rejected the procedure utilized by Judge Parker in Cimino, see Cimino, 151 F.3d at 302, Professors Saks and Blanck’s proposal and arguments in support were not dependant on the approval of the Cimino procedure.
151 See Cimino, 751 F. Supp. at 652.
152 See id. at 652-53.
In Jenkins v. Raymark Industries to resolve common issues, such as the defective nature of asbestos, inadequacy of warnings, the state of the art, and punitive damages for the entire class. In Phase II, the court determined the questions about the length and sufficiency of exposure at each of the worksites where asbestos was used. Phase III divided all of the consolidated claims into five disease categories and randomly selected a group of bellwether plaintiffs for each category. The randomly selected bellwether claims were tried before a jury, and expert testimony established that the samples on the whole achieved a ninety-nine percent confidence level. After the jury verdicts for the bellwether plaintiffs, the court calculated averages for each disease category to award the remaining non-bellwether plaintiffs.

The district court in Cimino and Professors Saks and Blanck justified the use of aggregation as meeting the requirements of due process based on the reliability of the methods and a balancing of interests. Judge Parker justified the use of statistics in the asbestos context by a lengthy analysis of statistical sampling that included an overview of its use in other litigation contexts. In addition, Professor Bone analogized the utilization of aggregation as similar to class actions brought under Rule 23(b)(3):

In both procedures, the outcome of litigation involving a few parties is imposed on a larger group. In both, the purpose of adjudicating on a groupwide basis is to reduce the social and private costs of litigation and to facilitate suits that might not be cost-effective if brought separately. Moreover, when factual issues are identical throughout the class, the class action functions as a trivial form of sampling. The court in effect relies on a sample of one case, that of the representative plaintiff's, to adjudicate liability for the entire class. ... [S]ubclassing serves as a trivial form of stratified sampling. Each representative is in effect a sample from the subclass that she represents.

Perhaps the most compelling argument in favor of statistical methodology in mass torts is the reliance on the use of formulas, statistics, and models in Title VII class

153 782 F.2d 468, 470-73 (5th Cir. 1986).
154 See Cimino, 751 F. Supp. at 653.
155 See id.
156 See id. There were a total of 160 representative plaintiffs split into the following disease categories: mesothelioma (15), lung cancer (25), other cancer (20), asbestosis (50) and pleural disease (50). See id.
157 See id. at 664; Saks & Blanck, supra note 123, at 824.
158 See Cimino, 151 F.3d at 305.
159 See Cimino, 751 F. Supp. at 665-66; Saks & Blanck, supra note 123, at 824.
161 Bone, Statistical Adjudication, supra note 100, at 569-70.
action cases. The Fifth Circuit expressly approved the use of class-wide formula calculations to determine back-pay in a Title VII case, noting that such a measure was "necessitated."

The court in Cimino did not ignore the due process concerns evident in statistical aggregation and addressed the earlier concerns of the Fifth Circuit regarding the use of a class action in the case. Previously, the Fifth Circuit had determined that forty-one illustrative plaintiffs, fifteen chosen by plaintiffs, fifteen chosen by defendants, and eleven designated class representatives, could not represent the remaining 2990 class members. At that time, the Fifth Circuit explained that such a procedure could not focus on individual causation, but only on general causation and relative risk. Rather than treat the claims as discrete, the district court's trial plan treated the claims as fungible. In the view of the Fifth Circuit, too many disparities among the various plaintiffs existed for common concerns to predominate.

Taking the Fifth Circuit's concerns into consideration, the court in Cimino appeared to implement what the Fifth Circuit would later suggest possible in Chevron. Judge Parker divided the plaintiffs into five categories of disease, from which 160 samples were drawn. The sample cases took into account all the variables inherent in such cases and produced a result having a ninety-nine percent confidence level. As the plaintiffs in Cimino had consented to statistical sampling, the defendants challenged its use because of the one percent likelihood that the results of the remaining plaintiffs would be significantly different. The court justified its use of statistics based on a "100% confidence level" that plaintiffs would be denied access to the courts.

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162 See Cimino, 751 F. Supp. at 661.
163 See Pettway v. American Cast Iron Pipe Co., 494 F.2d 211, 261 (5th Cir. 1974). The Fifth Circuit in Cimino rejected the analogy to Title VII claims since they are equitable remedies. See Cimino, 151 F.3d at 317-18.
164 See In re Fibreboard Corp., 893 F.2d 706, 709-711 (5th Cir. 1990). In Fibreboard, these same defendants sought and received a writ of mandamus vacating the class-action certification. See id. at 712.
165 See id. at 708-09.
166 See id. at 711-12.
167 See id.
168 See id. at 712.
169 See Cimino, 751 F. Supp. at 666.
170 The variables were gender, race, whether living, whether ever smoked, wage earner status, age, first year exposed, last year exposed, latency, years smoked, total years of exposure, trade, and predominant craft. See Cimino, 151 F.3d at 309.
171 See Cimino, 751 F. Supp. at 666.
172 See id.
173 Id.
Although the Fifth Circuit ultimately rejected the district court’s trial plan in Cimino, the utility of statistical sampling and aggregation to non-bellwether plaintiffs remains a continuing controversy. Rather than reject the statistical sampling and extrapolation outright, the Fifth Circuit’s Cimino opinion distinguished both Chevron and statistical sampling in Title VII cases on Seventh Amendment grounds.\textsuperscript{174} Because the Fifth Circuit, consequently, never addressed the due process concerns,\textsuperscript{175} the use of extrapolation via statistical sampling by state courts remains entirely unresolved.\textsuperscript{176} Moreover, certain procedural oddities in the implementation of the Cimino district court’s plan distinguish it from the Chevron proposal and even suggest the Fifth Circuit’s approval of the original Cimino trial plan.\textsuperscript{177}

In the intervening years between the district court decision in Cimino and review by the Fifth Circuit, numerous courts have cited the techniques used in Cimino and Hilao and approved by Chevron.\textsuperscript{178} Even after the Fifth Circuit Cimino decision,

\begin{footnotesize}
\textsuperscript{174} See Cimino, 151 F.3d at 318-21. In re Chevron, 109 F.3d 1016 (5th Cir. 1997) failed to address the right to a jury trial under the Seventh Amendment. The court in Cimino distinguished Pettway v. American Cast Iron Pipe Co., 494 F.2d 211, 258-63 (5th Cir. 1974), upon which the district court in Cimino relied, because it was an equitable class action brought under Rule 23(b)(2), which is not subject to the Seventh Amendment. See Cimino, 151 F.3d at 318. The court in Cimino also distinguished, or alternatively rejected, the Ninth Circuit’s reasoning in Hilao. See id. at 319 (arguing that the reasoning in Hilao is inapplicable because it failed to address the Seventh Amendment).

\textsuperscript{175} See Cimino, 151 F.3d at 319.

\textsuperscript{176} The refusal of the Fifth Circuit to address the due process issue leaves wide open the possibility of statistical sampling in state courts as the Seventh Amendment does not apply to the states. See Gasperini v. Center for Humanities, 518 U.S. 415, 432 (1996) (explaining that the Seventh Amendment governs proceedings in federal courts, but not in state courts). Although this Note focuses primarily on the Federal Rules and litigation in federal courts, the due process arguments apply equally to proceedings in state courts.

\textsuperscript{177} See Cimino, 151 F.3d at 305-08 (discussing Phase II). These deviations do not merit discussion here, except to note that plaintiffs were not required to present evidence that they even had the necessary exposure. At least one member of the Fifth Circuit panel in Cimino indicated general approval of the original trial plan by noting that “[if Judge Parker had conducted Phase II according to his plan, . . . the only issue would be the propriety of the damages.” Id. at 335 (Garza, J., concurring).

\textsuperscript{178} See, e.g., In re Rhone-Poulenc Rorer Inc., 51 F.3d 1293, 1304 (7th Cir. 1995) (citing the Saks & Blanck article to suggest that sample trials made sense when the number of cases “was so great as to exert a well-nigh irresistible pressure to bend the normal rules”); In re Complaint of Clearsky Shipping Corp., Nos. 96-4099 et al., 1998 U.S. Dist. LEXIS 8569, at *4 (E.D. La. June 4, 1998) (requiring statistical representativeness prior to extrapolation); In re Dow Corning Corp., 211 B.R. 545, 572 (E.D. Mich. 1997) (citing Cimino, 751 F. Supp. at 664); Adams v. Marathon Oil Co., 688 So. 2d 75, 76 (La. App. 5 Cir. 1997) (noting that causation and individual damage trials were held for bellwether plaintiffs selected as “representative class members”); cf. Long v. Trans World Airlines, Inc., 761 F. Supp. 1320 (N.D. Ill. 1991) (distinguishing Fibreboard and limiting damage discovery to a sampling of class plaintiffs); In re A.H. Robbins Co., 88 B.R. 742, 746 (E.D.)
courts, including another three-judge panel of the Fifth Circuit, and commentators have continued to suggest the use of statistical sampling and extrapolation from bellwether trials.\textsuperscript{179}

III. DOES THE CONSTITUTION PERMIT EXTRAPOLATION VIA STATISTICAL SAMPLING?

The deeply-rooted traditions of Anglo-American jurisprudence consist of the fundamental right that every party is entitled to his or her ""day in court""\textsuperscript{180} and ""[t]he right to a trial by jury in civil cases at common law.""\textsuperscript{181} Neither the due process requirements of the Fifth and Fourteenth Amendments nor the Seventh Amendment right to a jury trial are ""technical conception[s] with a fixed content unrelated to time, place and circumstances."

These rules are balanced against interests of judicial economy, avoidance of conflicting judgments, and the avoidance of trial by jury in mass torts. The Fifth Circuit panels deciding \textit{Chevron}, \textit{Cimino}, and \textit{Allison} were each comprised of an entirely different panel of judges. \textit{See Allison}, 151 F.3d at 406; \textit{Cimino}, 151 F.3d at 299; \textit{Chevron}, 109 F.3d at 1017. Judge Parker, however, served as the \textit{Cimino} trial judge and on the \textit{Chevron} appellate panel. \textit{See Chevron}, 109 F.3d at 1017; \textit{Cimino}, 751 F. Supp. at 650.

\textsuperscript{179} See Steamfitters v. Phillip Morris, Inc., 171 F.3d 912, 929 (3d Cir. 1999) (acknowledging that "in some litigation contexts . . . aggregation and statistical sampling may be appropriate"); Rineheart v. Ciba-Geigy Corp., 183 F.R.D. 497, 500 (M.D. La. 1998) (suggesting the \textit{Chevron} proposal after the Fifth Circuit decision in \textit{Cimino}); Perez v. Wyeth Laboratories, Inc., 734 A.2d 1245, 1249 n.2 (N.J. 1999) (citing the \textit{Chevron} proposal); \textit{supra} notes 148-49; \textit{see also} Allison v. Citgo Petroleum, 151 F.3d 402, 419 (5th Cir. 1998) (citing \textit{Chevron}’s proposal to use bellwether trials to resolve mass torts as one possible resolution to mass tort trials with multiple issues). The Fifth Circuit panels deciding \textit{Chevron}, \textit{Cimino}, and \textit{Allison} were each comprised of an entirely different panel of judges. \textit{See Allison}, 151 F.3d at 406; \textit{Cimino}, 151 F.3d at 299; \textit{Chevron}, 109 F.3d at 1017. Judge Parker, however, served as the \textit{Cimino} trial judge and on the \textit{Chevron} appellate panel. \textit{See Chevron}, 109 F.3d at 1017; \textit{Cimino}, 751 F. Supp. at 650.


The right of trial by jury in civil cases at common law is fundamental to our history and jurisprudence. . . . The founders of our Nation considered the right of trial by jury in civil cases an important bulwark against tyranny and corruption, a safeguard too precious to be left to the whim of the sovereign, or, it might be added, to that of the judiciary.

\textit{Id.}

\textsuperscript{182} Mathews v. Eldridge, 424 U.S. 319, 334 (1976) (quoting Cafeteria Workers v. McElroy, 367 U.S. 886, 895 (1961), and describing due process); \textit{see also} Parklane Hosiery, 439 U.S. at 337 (discussing the right to a jury trial); Galloway v. United States, 319 U.S. 372, 392 (1943) ("The more logical conclusion . . . is that the [Seventh] Amendment was designed to preserve the basic institution of [a] jury trial.").
of substantial litigation expenses in re-litigating identical issues.\(^{183}\) Recognizing the importance of such policies, the United States Supreme Court and other federal courts have deemed certain types of relationships “sufficiently close” to justify preclusion.\(^{184}\) In short, federal courts only bind non-parties whose “interests were represented adequately by a party in the original suit.”\(^{185}\)

A. The Rights Affected by Extrapolation in Mass Torts

The decision by a court to utilize statistics and extrapolate the results of a bellwether plaintiff trial to non-bellwether plaintiffs necessarily implicates both due process rights and the right to a jury trial for both plaintiffs and defendants.\(^{186}\) Proponents of extrapolation characterize the right affected, at least for defendants, as a property right—the ultimate amount of money damages to be paid to the plaintiffs.\(^{187}\) The right at stake in reality, however, is a procedural due process right either to defend or prosecute, the property interest.\(^{188}\)

Interestingly, the non-bellwether plaintiffs and the defendants are in a similar situation. Non-bellwether plaintiffs would be denied the opportunity to submit their claims to a jury, and required to rely on the presentation of claims by another plaintiff whose claims were deemed statistically similar to their own.\(^{189}\) Extrapolation, likewise, precludes defendants from defending a non-bellwether plaintiff’s claim that the particular exposure caused that particular plaintiff’s disease. This confines defendants to defending only against the bellwether plaintiff’s claim. A court utilizing extrapolation denies the defendant the ability to present evidence on whether a

\(^{183}\) See Southwest Airlines Co. v. Texas Int’l Airlines, Inc., 546 F.2d 84, 94-95 (5th Cir. 1977).

\(^{184}\) Id. at 95.

\(^{185}\) Id.

\(^{186}\) Even proponents of statistical extrapolation recognize the potential due process and Seventh Amendment concerns. See Hilao v. Estate of Marcos, 103 F.3d 767, 784-85 (9th Cir. 1996); see also supra authorities cited in notes 148-49.

\(^{187}\) See, e.g., Hilao, 103 F.3d at 785; Cimino v. Raymark Indus., 751 F. Supp. 649, 665-66 (E.D. Tex. 1990), aff’d in part and vacated in part, 151 F.3d 297 (5th Cir. 1998).

\(^{188}\) See Hilao, 103 F.3d at 788 (Rymer, J., concurring and dissenting) (arguing that statistical extrapolation does not comport with due process).

\(^{189}\) Although the non-bellwether plaintiffs in both Hilao and Cimino had either opt-out rights or had agreed to be bound by the results of the bellwether plaintiffs, see Hilao, 103 F.3d at 771; Cimino, 751 F. Supp. at 653, the proposal by the Chevron court and by Judge Weinstein suggests that statistically significant bellwether plaintiffs could also bind non-bellwether plaintiffs. See In re Chevron, 109 F.3d 1016, 1018 (5th Cir. 1997); Weinstein, supra note 6, at 135 (stating that the Rule 23(b)(3) opt-out right limits the ability of class actions to provide global resolution to mass torts); id. at 136-37 (arguing for a mandatory bankruptcy-style adjudication for mass torts); id. at 139 (suggesting that mandatory consolidation would deny claimants an ability to opt-out).
particular non-bellwether plaintiff's claim is adequately represented by the bellwether plaintiff. Although the defendant may challenge the reliability of the particular method of extrapolation by the statistical expert, the defendant has no real opportunity to demonstrate the dissimilarity of any particular non-bellwether plaintiff's claims. Indeed, in Hilao and in Cimino, the only persons who testified were the bellwether plaintiffs. Such limited discovery and consequent presentation at trial hardly affords the defendant the opportunity to defend against the non-bellwether claims. To require testimony by each of the non-bellwether plaintiffs, however, would defeat the whole purpose of extrapolation—judicial economy. The use of extrapolation via statistical sampling represents an attempt to circumvent the necessity of presenting the entirety of every plaintiff's case.

The implications on both plaintiffs' and defendants' constitutional rights are not limited to the mere possibility of a one to five percent chance of different outcomes. A greater disparity of outcomes is likely because "[i]ndividual trials generate different outcomes [than trials of a group of persons]." Where almost all of the factual evidence about the non-bellwether plaintiffs is in the hands of a special master or a statistical expert, the likelihood of different outcomes is further enhanced.

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190 For example, the Special Master in Hilao reviewed only the 137 depositions and the proof of claim forms to determine whether the non-bellwether plaintiffs were suitably represented. See Schreiber & Weissbach, supra note 117, at 477; see also notes 112-20 and accompanying text.

191 See Cimino, 151 F.3d at 301; Schreiber & Weissbach, supra note 117, at 477.

192 The only persons actually deposed in Hilao were the bellwether plaintiffs. See Schreiber & Weissbach, supra note 117, at 477. Although the discovery in Cimino was far more extensive, independent medical exams (IMEs) were performed on only about half the total plaintiffs. See Cimino, 751 F. Supp. at 653 (noting that IMEs were done on only 1400 plaintiffs).

193 See supra notes 131 & 173 and accompanying text.

194 A one to five percent disparity in a judgment of $766 million, while statistically small, still represents a significant amount of money. See, e.g., In re Estate of Ferdinand E. Marcos Human Rights Litig., 910 F. Supp. 1460, 1464, 1466 (D. Haw. 1995) (indicating judgment of $766 million with a 95% statistical confidence level), aff'd, 103 F.3d 767 (9th Cir. 1996).


196 See Hilao v. Estate of Marcos, 103 F.3d 767, 787-88 (9th Cir. 1996) (Rymer, J., concurring and dissenting) ("[C]ausation [for the class] . . . rested on the opinion of a statistical expert.").

197 See Tidmarsh, supra note 195, at 1796.
possibility of a disparity of outcomes and the limited requirements for proof of causation and damages implicate both due process and the right to a jury trial.\(^{198}\) The question is whether the fundamental notions of jurisprudence permit such techniques.

B. **Constitutional Rights in the Context of Traditional Mechanisms**

The constitutionality of statistical sampling and extrapolation is best resolved by analyzing the question in the context of the two mechanisms deemed sufficiently close to depart from the general rule that one needs to be a party to be bound by the judgment:\(^{199}\) class actions and collateral estoppel.

1. **Class Actions**

The class action is a non traditional litigation procedure permitting a representative with typical claims [to] ... stand in judgment for ... a class of similarly situated persons. ... The purpose and intent of class action[s] ... is to adjudicate and obtain *res judicata* effect on all common issues ... not only to the representatives ... but to all others who are "similarly situated."\(^{200}\)

To comport with the requirements of due process and the right to a jury trial, the Federal Rules of Civil Procedure has set forth the requirements of class certification in Rule 23.\(^{201}\) In order to be certified, a class action must fit the four prerequisites of Rule 23(a): (1) the class is so numerous that joinder of all members is impracticable ("numerosity"); (2) there are questions of law or fact common to the class ("commonality"); (3) the claims or defenses of the representative parties are typical of the class ("typicality"); and (4) the representative parties will adequately protect the interests of the class ("adequacy").\(^{202}\) A mass tort class action must also meet the two requirements of Rule 23(b)(3):\(^{203}\) (1) common questions must predominate over

\(^{198}\) See Carey v. Piphus, 435 U.S. 247, 259 (1978) (explaining that "procedural due process rules are shaped by the risk of error inherent in the truth seeking process"); *Hilao*, 103 F.3d at 788 (Rymer, J., concurring and dissenting).


\(^{200}\) Ford v. Murphy Oil U.S.A., Inc. 703 So. 2d 542, 544 (La. 1997).

\(^{201}\) See FED. R. CIV. P. 23; Becherer v. Merrill Lynch, Pierce, Fenner & Smith, Inc., No. 96-1673, 1999 WL 782089 (6th Cir. Sept. 30, 1999) (explaining that Rule 23 protects the minimum requirements of due process); see also supra note 5.


\(^{203}\) Because Rule 23(b)(1) is limited to cases where the party is obligated to treat the members of the class alike or instances in which numerous parties make claims against a
individual questions ("predominance"); and (2) class resolution must be superior to other methods for the fair and efficient adjudication of the controversy ("superiority"). In addition, Rule 23(b)(3) requires that class members be alerted of their right to "opt-out" of the class action.

A class action's fundamental underlying principles are that the issues required to resolve the class representative's claims are common to the other members of the class and that the class representatives' claims are typical of the other members of the class. As a result, adjudication of the class representative's claims adequately protects the absent class members' rights and provides a far superior method than relitigating common issues numerous times. Therefore, class actions require the defendant to have engaged in a course of conduct that affected all of the plaintiffs similarly.

In the context of a mass tort, if the class representative fails the typicality requirement, the class as a whole fails the superiority requirement of Rule 23. For example, if plaintiffs' injuries occur at different places, for different amounts of time, and under different conditions, these "factual differences . . . translate[] into significant legal differences" on the issues of causation. These differences require that courts make individual determinations of the individual plaintiffs' claims. Resolution of a class representative's claim would involve a different inquiry than
those of the class that the representative purportedly represents. The standard that each individual must prove the exposure caused his or her disease mandates that individual causation cannot be proved on a class-wide basis. Rather, each plaintiff must prove, and the defendant must have the opportunity to disprove, that a particular individual's disease was or was not caused by the exposure.

Even assuming that, as a matter of law, a mass tort plaintiff's claims could be reduced to a handful of significant variables, to permit class actions in such cases "would cause the case to degenerate into multiple lawsuits separately tried." To adequately protect the rights to due process and to a jury trial would require a far more complex process than utilized in either Hilao or Cimino. To be properly representative, the class would have to be divided into subclasses, with subclass representatives typical of the remaining members of the subclass. Rather than merely subdivide the class into a handful of disease categories and use a statistician to determine a ninety-five percent confidence level, typicality requires that each representative's factual differences may not translate into legally significant differences. Thus, to meet the typicality requirement, the representative of each subclass would have to be representative of each legally significant variable. For example, if there were five disease categories, and ten significant variables, and an average of five different possible outcomes for each variable, this would produce 250 separate subclasses. Such a large number of subclasses undermines the cohesion of the class, and therefore, fails the superiority requirement. Using a conservative number of cases to provide a representative sample, based on Hilao and Cimino,

\[\text{Cf. East Texas Motor Freight v. Rodriguez, 431 U.S. 395, 403 (1976) (explaining that a class representative must "suffer the same injury as the class members").}\]


\[\text{Rule 23(c)(4)(B) allows the creation of subclasses, but also requires that each subclass independently satisfy the class action criteria. See FED. R. CIV. P. 23(c)(4)(B); 1 NEWBERG, supra note 17, § 3.09, at 3-43.}\]

\[\text{See 1 NEWBERG, supra note 17, § 2.15, at 3-78, 3-81 (explaining that when the factual differences create legal differences, the representative is not typical); see also Georgine, 83 F.3d at 632 ("[A] hodgepodge of factually as well as legally different plaintiffs ... create problematic conflicts of interest ... [that] necessarily destroy the possibility of typicality.").}\]

\[\text{See General Tel. Co. v. EEOC, 446 U.S. 318, 330 (1980) ("[T]he typicality requirement is said to limit the class claims to those fairly encompassed by the named plaintiffs."); MANUAL FOR COMPLEX LITIGATION § 30.15 (3d ed. 1995); 1 NEWBERG, supra note 17, § 2.15, at 3-78.}\]

\[\text{The Cimino plaintiffs were divided into five disease categories. See supra note 156.}\]

\[\text{The court in Hilao used 7 factors and the court in Cimino used 13 variables. See supra notes 117 & 170.}\]

\[\text{See MANUAL FOR COMPLEX LITIGATION § 30.15 (3d ed. 1995) (stating that excessive subclasses lead to confusion).}\]

\[\text{In Cimino, the sample size for each subclass ranged from 15 to 50. See Cimino, 751}\]
would result in twenty-five bellwether claims for each subclass or a total of 6250 total bellwether trials. As this number exceeds the claims in Cimino and is more than half the entire class in Hilao, such a high number of trials hardly produces a more efficient outcome and demonstrates the lack of superiority of this method.\textsuperscript{221}

Even if a number of representatives small enough to justify adjudicating less than all the claims would be efficient, such statistical evidence is insufficient proof of individual causation.

The law is well settled that in a personal injury action causation must be\textit{ proven within a reasonable medical probability based upon competent expert testimony}. \ldots A possible cause only becomes ‘probable’ when, in the absence of other reasonable causal explanations, it becomes more likely than not that the injury was a result of its action.\textsuperscript{222}

Although there is some debate about the role that statistics and probability theory should play in the law,\textsuperscript{223} it is significantly different from the debate over whether to allow a plaintiff to rely entirely on probability evidence as proof of individual causation.\textsuperscript{224} In order to improve judicial efficiency, the entirety of the proof for a non-bellwether plaintiff consists of statistical evidence of results extrapolated from the non-bellwether plaintiffs.\textsuperscript{225} Allowing a non-bellwether plaintiff to prove causation only through the testimony of an expert statistician because the bellwether claim is statistically representative guts the core requirement of proof.\textsuperscript{226}

F. Supp. at 653; \textit{supra} note 156. In Hilao, the sample size ranged from 18 to 67. \textit{See supra} note 114.

\textsuperscript{221} \textit{See Manual for Complex Litigation} \textsection 30.15 (3d ed. 1995) ("rarely should more than ten persons or firms be named as class representatives").


\textsuperscript{224} \textit{See} Tribe, \textit{supra} note 223, at 1349 (explaining that to allow plaintiff to prove causation merely by statistical evidence would “eliminate any incentive for plaintiffs to do more than establish the background statistics”). Indeed, this suggestion differs considerably from mass exposure cases where general causation was certain and liability apportioned in accordance with a market share theory. \textit{See, e.g.,} Sindell v. Abbott Laboratories, Inc., 607 P.2d 924 (Cal. 1980); Copeland v. Celotex Corp., 447 So. 2d 908 (Fla. App. 1984).

\textsuperscript{225} \textit{See supra} notes 109-11, 113-26, 156-58 and accompanying text (discussing the limited discovery and trial presentation in Hilao and Cimino).

\textsuperscript{226} \textit{See} Alan D. Cullison, \textit{Identification by Probabilities and Trial By Arithmetic (A Lesson For Beginners in How To Be Wrong With Greater Precision)}, 6 HOUS. L. REV. 471, 518 (1969) ("The usual basis given for rejecting expert probability testimony is the
that can be said of the statistical evidence is "that the mathematical chances somewhat favor the proposition. . . . This [is] not enough."227

The inescapable fact is that individual causation cannot be presented sufficiently by extrapolating results from even statistically significant class or bellwether representatives. To require merely a showing via statistical estimates would change the requisite proof by treating each claim as if it were fungible.228 Statistical estimation is useful to prove general causation, but only requiring a non-bellwether plaintiff to prove a statistical likelihood that plaintiff's disease was caused by defendant's actions changes the burden of proof.229 Almost a hundred years ago, the Maine Supreme Court explained:

Quantitative probability . . . is only the greater chance. It is not proof . . . of the proposition to be proved. That in one throw of dice there is a quantitative probability, or greater chance, that a less number of spots than sixes will fall uppermost is no evidence whatever that in a given throw such was the actual result. Without something more, the actual result . . . would still be utterly unknown. The slightest real evidence that sixes did in fact fall uppermost would outweigh all the probability otherwise.230

227 Smith v. Rapid Transit, Inc., 58 N.E.2d 754, 755 (Mass. 1945); accord People v. Collins, 438 P.2d 33 (Cal. 1968) (finding that a "trial by mathematics" so distorted the role of the jury and disadvantaged the defense that it constituted "a miscarriage of justice").

228 See In re Fibreboard Corp., 893 F.2d 706, 711-12 (5th Cir. 1990); Windham v. American Brands, Inc., 565 F.2d 59, 66 (4th Cir. 1977).


230 Day v. Boston & Maine R.R., 52 A. 771, 774 (Me. 1902). In the context of statistical sampling and extrapolation, all that can be said is that the dice fell uppermost by the number of bellwether trials. Without some evidence presented to the jury about the non-bellwether plaintiffs, this "proof" establishes nothing more.
Requiring no more than statistical proof is a substantial amendment of substantive rights, an action forbidden by the Rules Enabling Act and beyond the power of the federal judiciary.

2. Collateral Estoppel

Collateral estoppel, like class actions, serves the dual purpose of promoting judicial economy while protecting litigants’ rights to due process and to a jury trial. Until recently, collateral estoppel only applied when both parties were bound by the judgment. In Blonder-Tongue Laboratories v. University of Illinois Foundation, the United States Supreme Court considered whether a plaintiff should be afforded “more than one full and fair opportunity for judicial resolution of the same issue.” The Court concluded that forcing a defendant to defend a claim that the plaintiff had fully litigated and lost in a prior action would be a misallocation of resources. “Permitting repeated litigation of the same issue as long as the supply of unrelated defendants holds out reflect[ed] . . . the aura of the gaming table . . . [and was not] a worthy or wise basis for fashioning rules of procedure.” The Court cautioned, however, that litigants who never appeared in the prior action could not be collaterally estopped without a chance to present evidence and arguments on the claim.

After Blonder-Tongue, the ability of a plaintiff to assert collateral estoppel against a defendant remained unresolved until Parklane Hosiery Co. v. Shore. In Parklane Hosiery, the Supreme Court granted trial courts “broad discretion” in determining when offensive collateral estoppel may be utilized. The Court recognized the disadvantages of offensive collateral estoppel and advised that trial judges should take account of the following factors in allowing its use: (1) the ability of the plaintiffs to join the prior action; (2) prior inconsistent judgments; and (3) the

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232 See Jackson v. Johns-Manville Sales Corp., 781 F.2d 394, 415 (5th Cir. 1986) (“Congress’ silence in face of a desparate [sic] need for federal legislation . . . does not authorize the federal judiciary to assume for itself the responsibility for formulating what essentially are legislative solutions.”).
234 See id. at 327.
236 Id. at 328.
237 See id. at 329.
238 Id.
239 See id. (citing Hansberry v. Lee, 311 U.S. 32, 40 (1940)).
241 See id. at 331.
availability of procedural opportunities in the latter action not present in the former that are likely to cause a different result.\textsuperscript{242}

Lower courts, in turn, began to adopt the idea of "virtual representation" as a vehicle of non-party preclusion.\textsuperscript{243} Although courts initially suggested that the mere "identity of interests" between a party and a non-party warranted application of the doctrine,\textsuperscript{244} courts have retreated from that position and recognized that over-deployment of virtual representation would threaten the core principles of due process and the right to a jury trial.\textsuperscript{245} "The upshot is that, today, while identity of interests remains a necessary condition for triggering virtual representation, it is not alone a sufficient condition."\textsuperscript{246}

A finding that a bellwether plaintiff meets the requirements of the collateral estoppel principles would necessitate that a non-bellwether plaintiff would be collaterally estopped from presenting his or her own claim in a later proceeding.\textsuperscript{247} To assert that a bellwether plaintiff adequately represents an entire group that is statistically significantly similar suggests that a later plaintiff could use offensive collateral estoppel.\textsuperscript{248} If a bellwether plaintiff successfully proves his case and a court allows extrapolation from a statistically significant bellwether to the non-bellwethers, an important question is whether a later plaintiff not involved in the first suit, but who could demonstrate that the bellwether plaintiff was also an appropriately statistical representative, could utilize the bellwether trial results. Under the guidelines set forth in Parklane Hosiery, a later plaintiff, without the opportunity to join the suit and in the absence of any intervening inconsistent

\textsuperscript{242} See id. at 329-32.


\textsuperscript{244} See, e.g., Aerojet-General Corp. v. Askew, 511 F.2d 710 (5th Cir. 1975).

\textsuperscript{245} See Gonzalez v. Banco Cent. Corp., 27 F.3d 751, 760 (1st Cir. 1994); see also Becherer v. Merrill Lynch, Pierce, Fenner & Smith, Inc., 43 F.3d 1054, 1070-71 (6th Cir. 1995).

\textsuperscript{246} Gonzalez, 27 F.3d at 760. Although there is no black letter rule in deciding when to apply virtual representation, courts look at the following factors: (1) notice; (2) whether the parties are legally responsible or in any other way accountable to the other plaintiffs; (3) a special type of close relationship; (4) whether they consented, explicitly or implicitly, to be bound by the judgment; (5) whether non-participation was based on tactical maneuvering to gain an unfair advantage; and, sometimes, (6) the adequacy of the representation. See id. at 761.

\textsuperscript{247} If non-bellwether plaintiffs consent to be bound by the judgment of the bellwether plaintiffs, the similar principle of res judicata, rather than collateral estoppel, may apply. See id. at 760-62.

\textsuperscript{248} See supra notes 235-37 and accompanying text; see also Faulk et al., supra note 20, at 805 n. 194 (recognizing that it is only defendants who would be collaterally estopped); Woolley, supra note 148, at 535 ("[A] defendant who loses the first in a series of suits involving the "same issue" may be bound by adverse findings on that issue in later suits.").
judgments, should be able to utilize offensive collateral estoppel to prevent a defendant from relitigating issues resolved in the bellwether trial. Thus, the defendant could be prevented from litigating any issue other than whether the bellwether plaintiff was a statistically significant representative of the later plaintiff.

This reasoning rests on the fallacy that proof of causation does not vary between individuals. Yet, accepting extrapolation would eliminate any legal or logical reason to deny a later plaintiff the same opportunity as the non-bellwether plaintiff to rely on the issue of individual causation resolved in the bellwether trial. The reason that neither the non-bellwether nor the later plaintiff should be allowed to assert offensive collateral estoppel rests on the same premise: "[T]he issue as to which preclusion is sought [must] be identical with the issue decided in [the bellwether trial]." The inescapable conclusion is that proof of individual causation, for either the non-bellwether or the later plaintiff, requires evidence proving individual facts. Thus, the mere presentation of statistical evidence alone does not suffice to resolve the issue of individual causation in a mass tort case.

The rules governing collateral estoppel establish the bounds of its use within the parameters of due process and the right to a jury trial. Allowing non-bellwether and later plaintiffs to assert collateral estoppel, based upon a mere identity of interests, would represent a return to the already rejected notion of virtual representation. Courts realized that over-extension of the rule would violate due process and Seventh Amendment rights. Revitalizing this view, by allowing extrapolation for issues of individual causation, would no less violate those rights today.

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249 See supra notes 240-47 and accompanying text; see also, e.g., Rubel v. Eli Lilly & Co., 681 F. Supp. 151, 153-57 (S.D.N.Y. 1987) (granting plaintiff's motion for summary judgment based on prior judgment of defendant's negligence in failing to adequately test a pharmaceutical prior to distribution).

250 Cullen v. Margiotta, 811 F.2d 698 (2d Cir. 1987) (alteration in the original) (quoting Capital Tel. Co. v. Patterson Tel. Co., 436 N.E.2d 461, 463 (N.Y. 1982)).

251 Cf. Woolley, supra note 148, at 575 (explaining the inherent unfairness of allowing a particularly sympathetic plaintiff to bind common issues against the defendant for all other plaintiffs).


253 See supra notes 243-46 and accompanying text.

254 See id.

255 Cf. Tidmarsh, supra note 195, at 1772 n. 389 ("The simplest way to avoid this dilemma would be to abolish the Seventh Amendment, and require all civil cases to be tried to the court.").
3. Consolidation

Some proponents of extrapolation techniques have asserted that consolidation might be a "more powerful tool" than class actions in resolving mass torts.\textsuperscript{256} Indeed, the court in *Chevron* proposed statistical sampling in the context of a Rule 42 consolidation,\textsuperscript{257} and the court in *Cimino* consolidated the asbestos claims before it.\textsuperscript{258}

The mere availability of a consolidation procedure does not, however, enable courts to escape the requirements of class actions or collateral estoppel.\textsuperscript{259} Over fifty years ago, the Supreme Court explained in *Hansberry v. Lee*\textsuperscript{260} that a selection of representatives for the purposes of litigation must have substantially the same interests as those they are deemed to represent.\textsuperscript{261} Short of a class action, with all the concomitant safeguards that class certification requires, the deemed "representatives" cannot protect the requirements of due process.\textsuperscript{262} The same requirements that govern representatives in class actions also govern consolidations:\textsuperscript{263} "There would be little point in having Rule 23 if courts could ignore its careful structure and create *de facto* class actions at will."\textsuperscript{264} The recent Supreme Court decisions in *Amchem Products v. Windsor*\textsuperscript{265} and *Ortiz v. Fibreboard Corp.*\textsuperscript{266} both suggest that courts must strictly adhere to the requirements set forth in Rule 23, and the use of Rule 42 does not enable them to circumvent those requirements.\textsuperscript{267}

\textsuperscript{256} See WEINSTEIN, supra note 6, at 139 (advocating estimation in consolidation); see also Bordens & Horowitz, supra note 149, at 44 ("[C]onsolidation] has become an increasingly popular weapon in the courts' search for a paradigm that permits the efficient resolution of mass tort cases.").

\textsuperscript{257} See *In re Chevron*, 109 F.3d at 1017.

\textsuperscript{258} See *Cimino*, 151 F.3d at 299.

\textsuperscript{259} See Tice v. American Airlines, Inc., 162 F.3d 966 (7th Cir. 1998), cert. denied, 119 S. Ct. 2395 (1999); see also *In re TMI Litig.*, Nos. 96-7623 et al., 1999 U.S. App. LEXIS 28415, at *337-41 (3d Cir. 1999) (explaining that extension of a summary judgment decision to non-trial plaintiffs implicates collateral estoppel issues and their Seventh Amendment rights).

\textsuperscript{260} 311 U.S. 32 (1940).

\textsuperscript{261} See *id.* at 43.

\textsuperscript{262} See Gonzalez v. Banco Cent. Corp., 27 F.3d 751, 762 (1st Cir. 1994); see also 7B CHARLES ALAN WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE § 1789, at 243 (2d ed. 1994) ("[I]f an action is not properly certified, then any judgment... will not bind persons who are not named parties to the dispute.").

\textsuperscript{263} See Southwest Airlines v. Texas Int'l Airlines, Inc., 546 F.2d 84, 95 (5th Cir. 1977) ("[A]lthough *Hansberry* involved a class action suit, its due process principles also control res judicata cases.").

\textsuperscript{264} Tice, 162 F.3d at 973.

\textsuperscript{265} 521 U.S. 591 (1997).

\textsuperscript{266} 119 S. Ct. 2295 (1999).

\textsuperscript{267} See Tice, 162 F.3d at 923; supra note 232.
C. Inadequacy of Proponents' Justifications

In the context of mass tort litigation, proof of causation necessarily involves proof not merely that a particular substance is capable of causing a particular disease, but that in this particular instance the substance did cause or was a substantial factor in causing the disease contracted by this particular individual. Requiring parties to accept extrapolation, even of statistically significant representatives, avoids the requisite proof of individual causation and impairs the defendant's ability to combat such a claim. Implicitly, at least, proponents recognize the implication of these "solutions" on the standards of proof and attempt to justify them as constitutionally permissible.

Proponents' justification for statistical extrapolation under the Seventh Amendment relies on two principal arguments: (1) the scope of the Federal Rules of Civil Procedure sets the bounds of the Seventh Amendment, and (2) the scope of the Federal Rules of Civil Procedure permits the utilization of statistics in other areas, such as calculation of damages and equitable relief in Title VII cases. Demonstration that statistical sampling violates the protections assured by class actions and collateral estoppel refutes the first argument that such an approach is permissible under traditional rules. The analogy to Title VII actions fails because mass torts, unlike the equitable nature of Title VII actions, are subject to the Seventh Amendment. In actions at law, courts have utilized statistics to assess the amount of damages based on a formula in a jury verdict or as one factor to prove liability, but

268 See supra notes 222-32 and accompanying text; cf. REPORT ON MASS TORT LITIGATION, supra note 34, at 29 (noting that even when generic causation and liability issues seem clear, specific cause and extent of injuries must be proved).
269 See Gold, supra note 229, at 380 (explaining that in an individual case, statistics at best merely establish that "a randomly selected case of disease was one that would not have occurred absent exposure"); id. at 382-84 (explaining the difference between fact probability and belief probability).
271 See Cimino v. Raymark Indus., 751 F. Supp. 649, 661-63 (E.D. Tex. 1990); Branton, supra note 148, at 231-32 (arguing that the Seventh Amendment should not apply in asbestos litigation).
272 See supra notes 199-255 and accompanying text.
273 See Woodell v. International Broth. of Elec. Workers, 502 U.S. 93, 98 (1991) ("A personal injury action is of course a prototypical example of an action at law, to which the Seventh Amendment applies."). Even in Title VII cases that seek monetary relief in addition to injunctive relief, the right to a jury trial is implicated unless the monetary damages are only incidental. See Jefferson v. Ingersoll Int'l, Inc., No. 99-8032, 1999 WL 966761 (7th Cir. Oct. 25, 1999).
not as proof of whether an individual plaintiff was harmed. The utilization of statistical calculation in the context of damages provides the dollar amount of harm that occurred as the result of a uniform cause; it does not prove whether the plaintiff was harmed. Mere calculation of damages based on the jury’s formula, as compared to substitution of proof via statistical means, does not violate the right to a jury trial.

The findings by courts and conclusions by commentators that aggregation satisfies the requirements of due process based on the balancing test enunciated in Mathews v. Eldridge rests on a misinterpretation of that test. The balancing test in Mathews was created to decide when, not if, a hearing was required. Proponents argue that the limited resources of the judicial system require some use of a “short-cut,” such as statistical extrapolation, in order for plaintiffs to be heard at all. The proponents’ arguments for substituting a statistical expert’s testimony about the reliability of extrapolation in lieu of causation proof do not satisfy the due process requirements of the opportunity to be heard “at a meaningful time and in a meaningful manner.”

274 See Cimino, 151 F.3d at 311; supra notes 222-27 and accompanying text (discussing the utilization of statistics to prove causation).
275 See, e.g., Union Carbide and Carbon Corp. v. Nisley, 300 F.2d 561, 589 (10th Cir. 1961) (approving trial plan utilizing special master to use jury verdict formula to apply damage determination for each class member).
276 See id.; Cimino, 151 F.3d at 311; see also supra notes 222-27 and accompanying text. In cases utilizing a special master to determine damages, there is a uniformity of injury and the master serves only to assess the amount of individual damages after a jury verdict formula for damages. See Union Carbide, 300 F.2d at 589. Indeed, it is clear that even the determination of damages in an action at law is the province of the jury. See Feltner v. Columbia Pictures Television, Inc., 523 U.S. 340 (1998); see also Hetzel v. Prince William County, 523 U.S. 208, 210-12 (1998) (per curiam) (explaining that the Seventh Amendment does not permit a court to enter a remittitur without the option of a new jury trial).
278 See Mathews, 424 U.S. at 323 (“The issue in this case is whether the Due Process Clause of the Fifth Amendment requires that prior to the termination . . . the recipient be afforded an opportunity for an evidentiary hearing.”); see also Connecticut v. Doehr, 501 U.S. 1 (1991) (finding that a prejudgment attachment requires a prior hearing in order to satisfy the due process clause).
280 See supra notes 117 & 170 and accompanying text.
281 Mathews, 424 U.S. at 333-34 (quoting Armstrong v. Mango, 380 U.S. 545, 552 (1965), and recognizing that the procedural safeguards mandated by due process increase as the importance of the decision being made increases); see also Vlandis v. Kline, 412 U.S. 441, 451 (1973) (explaining “the Constitution recognizes higher values than speed and efficiency”); Thomas W. Henderson & Tybe A. Brett, A Trial Lawyer’s Commentary on One Jurist’s Musing of the Legal Occult: A Response to Judge Weinstein, 88 NW. U. L.
Rather, the proponents' reasoning articulates an acquiescence that the limited resources of the courts justify the mere appearance of due process and a jury trial in place of nothing at all. Such reasoning ought to leave a "profound disquiet" as the procedure "is called a trial, but it is not." Fundamental notions of jurisprudence require more than merely an appearance to adequately protect constitutional rights.

IV. HOW SHOULD COURTS HANDLE MASS TORT LITIGATION?

The conclusion that courts may not mandate sampling and extrapolation for parties does not require that courts altogether abandon the use of statistically significant bellwether plaintiffs. When faced with mass torts, courts should use statistically significant bellwether plaintiffs. A trial of bellwether plaintiffs can be used effectively to give the parties a representative idea of the claims' value. While a trial consisting of a statistically significant group of plaintiffs would give the parties a more realistic idea of the likely value of the claims during settlement discussions, such a trial may not produce a settlement.

The court should also encourage the parties to agree voluntarily that the trial of statistically significant bellwether plaintiffs will be dispositive of the non-bellwether claims. The same constitutional concerns should not apply when both sides have consented that a unitary trial would satisfy their due process and jury trial concerns. This, of course, presumes that the court is not faced with defendants

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282 See In re Fibreboard Corp., 893 F.2d 706, 709 (5th Cir. 1990) ("Plaintiffs . . . argue that extraordinary measures are necessary if these cases are to be tried at all."); see also supra notes 110 & 173 and accompanying text (discussing the Hilao and Cimino rationales).

283 In re Fibreboard, 893 F.2d at 712; see also Amchem Prods., Inc. v. Windsor, 521 U.S. 591, at 617-19 (explaining that attempts to achieve judicial economy are laudable only when they do not sacrifice procedural fairness).

284 See, e.g., In re Shell Oil Refinery, 136 F.R.D. 588, 596 (E.D. La. 1991) ("The claims will be scheduled for trial according to a format based on factors such as location of the claimant and/or his property at the time of the explosion, and the extent and nature of the damages. The goal is that after several waves are tried, a reasonable judgment value for each category of claims will emerge and can be used to facilitate settlement."). The Report on Mass Tort Litigation suggested that use of aggregative techniques could even reduce the costs of settlement. See REPORT ON MASS TORT LITIGATION, supra note 34, at 18.

285 See Ank v. Koppers Co., 930 F.2d 26 (9th Cir. 1991) (finding that where non-test plaintiffs entered into a stipulation they gave the actual parties authority to represent them and were collaterally estopped from relitigating the issues); Zapata v. IBP, Inc., 175 F.R.D. 578, 580 (D. Kan. 1997) (finding that a Hilao-style damage aggregation would be permissible if defendant consented); see also In re TMI Litig., Nos. 96-7623 et al., 1999 U.S. App. LEXIS 28415, at *341 (3d Cir. Nov. 2, 1999) (explaining that only a "positive
who present a “fortress mentality,” refusing any concessions or settlement.\textsuperscript{286}

Regardless of whether the parties agree, the court may still establish a multiphase trial and certify at least some of the issues for class action treatment.\textsuperscript{287} Phase I of the trial could consist of a class action trial on the issue of underlying liability and questions of general causation.\textsuperscript{288} A court should require the jury to make specific findings of fact related to issues of causation common to the class as a whole. For example, the jury should make findings as to the minimum length of exposure necessary to contract a particular disease, the minimum amount of exposure necessary, and the types of diseases that such exposure can cause.\textsuperscript{289} Contrary to the Second Circuit’s assertion,\textsuperscript{290} certification of these issues could be dispositive of the entire trial. If the jury were to find for the defendant, or the court granted the defendant’s motion for summary judgment or directed verdict because the defendant’s underlying conduct could not cause the injuries alleged by any of the plaintiffs, the entire litigation would end.\textsuperscript{291} Jury findings as to minimum length of exposure,
exposure levels, and potential diseases could eliminate any plaintiffs who did not meet the requisite levels. Moreover, resolution of common claims against the defendants may stimulate settlement.²⁹²

Only if plaintiffs prevailed on Phase I, and no settlement was achieved, would further adjudication be required. Phase I also could resolve any affirmative defenses that are applicable to the class as a whole.²⁹³ Although the military contractor defense in Agent Orange would have resolved claims of the entire class, certain affirmative defenses could be dispositive only for some of the plaintiffs. For example, an assumption of the risk or statute of limitations defense might be time-sensitive: If plaintiffs knew or should have known of the potential for exposure or the harms by a certain date, a jury could find that claims after that date were barred or could make a percentage determination as to liability of the defendant.²⁹⁴ Phase II could resolve as a class the imposition of punitive damages, if any.²⁹⁵ Only after all of these issues are resolved is it necessary to turn to the question of individual causation.

In Phase III, the court could then choose statistically significant bellwether plaintiffs, and divide these bellwether plaintiffs as necessary into groups according to the different variables.²⁹⁶ This Phase III differs from those utilized in Hilao and Cimino in its application to the non-bellwether plaintiffs' trials. Rather than being dispositive of the claims of the non-bellwether plaintiffs, Phase III would be illustrative only.²⁹⁷ Phase IV would consist of trials for the remaining plaintiffs. This phase essentially would result in "mini-trials," proving the individual plaintiffs' causation.

²⁹² See Pruitt v. Allied Chem. Corp., 85 F.R.D. 100, 117 (E.D. Va. 1980) (justifying class certification to resolve common issues in a mass tort cases because resolving the issue against the defendant would likely facilitate settlement); Shelter Realty Corp. v. Allied Maintenance Corp., 442 F. Supp. 1087, 1089 (S.D.N.Y. 1977) (explaining the same principle); Woolley, supra note 148, at 534 ("resolution of [a single] issue may facilitate settlement").

²⁹³ See, e.g., In re Agent Orange, 818 F.2d 145, 164-65 (2d Cir. 1987) (resolving the military contractor defense).

²⁹⁴ So long as this issue is separable from proving the issue of liability, they may be tried separately without violating the Seventh Amendment. See Woolley, supra note 148, at 537-38. Even if affirmative defenses are "interwoven" with the plaintiffs' claim, common resolution is possible so long as they are common to the class. See id.

²⁹⁵ See, e.g., Jenkins v. Raymark Indus., 782 F.2d 468, 474 (5th Cir. 1986) (finding no constitutional impediment in allowing determination of punitive damages before absent class members prove actual damages); In re Shell Oil Refinery, 136 F.R.D. 588, 593-94 (E.D. La. 1991) (holding that determination of punitive damages before absent class members prove actual damages does not violate due process).

²⁹⁶ See supra notes 109, 113-15 & 156 and accompanying text (discussing the procedures used in Hilao and Cimino).

In the event that a second jury is used in Phase IV, it would not be reviewing the findings of fact of the juries in Phase I or Phase III. Rather, the jury instructions could indicate that an earlier jury had already determined that: (1) defendant's actions were sufficient to establish liability, and (2) the product was capable of causing the specific harms. Thus, plaintiffs would be relieved from having to reprove, and the defendant prohibited from rearguing, these issues. Rather, the focus of the trial would be on whether this particular individual's exposure was sufficient to cause, and did in fact cause, the alleged injuries and the appropriate measure of damages. Introduction of the statistical evidence from Phase III could demonstrate probability, but such proof would not be sufficient to establish liability. A plaintiff would have to present evidence of actual exposure and medical testimony to a reasonable degree of scientific certainty that such exposure did indeed cause the injury. A defendant would be limited to introducing evidence demonstrating how the plaintiff was significantly different from the bellwether plaintiff, whether plaintiff was exposed, and why such exposure did not cause plaintiff's injuries.

Although such procedures would admittedly require greater expenditure of judicial time and resources than the judicial short-cuts employed by Hilao and Cimino, these measures would streamline the process by resolving as many common issues as possible, leaving the remaining unique issues for individual trials. More

298 See, e.g., In re Copley Pharm., Inc., 161 F.R.D. 456, 469 (D. Wyo. 1995) ("Assuming the plaintiffs are successful at the class trial and [defendant] is found liable, individual plaintiffs will then have the burden of proving . . . that they were in fact injured by the Defendant's product.").

299 The right to a jury trial is not jeopardized by the use of a different jury in different phases. See 9 CHARLES ALAN WRIGHT & ARTHUR R. MILLER, FEDERAL PRACTICE AND PROCEDURE § 2391 (2d ed. 1994); Woolley, supra note 148, at 543 ("[T]here is no sound basis for concluding that the convocation of a second jury [even on overlapping issues] will necessarily lead to violation of the Seventh Amendment."); cf. Gasoline Prods. Co. v. Champlin Refining Co., 283 U.S. 494, 499 (1931) (holding that a retrial on the issue of damages alone does not violate the Seventh Amendment).

300 See supra note 287; see also Faulk et al., supra note 20, at 808 (explaining that if the trial court properly certifies common issues, rather than individual ones, parties' rights to due process and to a jury trial are protected).

301 See Faulk et al., supra note 20, at 808.

302 See In re Copley, 161 F.R.D. at 49 ("[A]t the [individual] trials, individual plaintiffs will present their claims for . . . damages [and] these trials will focus on issues of individual causation . . . .")

303 See Gold, supra note 229, at 395-96.

304 See supra notes 226-27 and accompanying text.

305 See supra notes 226-29 and accompanying text (discussing the requisite measure of proof).

306 See In re Copley, 161 F.R.D. at 469; cf. Ortiz v. Fibreboard, 119 S. Ct. 2295, 2321 (1999) (recognizing that the "great advantage of class action treatment of mass tort cases
importantly, the use of the individual "mini-trials" would comport with the traditional notions of due process and the right to a jury trial. 307

The Fifth Circuit expressly approved the use of such individual "mini-trials" in Watson v. Shell Oil Co. 308 In Phase I of Watson, the jury was to determine defendant's liability for compensatory and punitive damages, and in Phase II, determine the amount of punitive damages. 309 "In Phase [III], a different jury [would] resolve the issues that are individual to each plaintiff." 310 Unlike the courts in Hilao and Cimino, the district court in Shell Oil Refinery recognized that "any number of plaintiffs less than the entire class could not present the individual claims of [the entire class]." 311 Accordingly, the Fifth Circuit approved the trial plan and the use of "mini-trials," finding it consistent with the requirements of the Federal Rules of Civil Procedure and the Constitution. 312

CONCLUSION

Mass torts undeniably present courts with the problem of balancing procedural fairness with judicial efficiency. 313 In the absence of congressional action that addresses the problem, courts are constrained to resolve mass tort litigation within the bounds of the Federal Rules of Civil Procedure, and of course, the Constitution. To the extent that courts craft innovative solutions to address the problems presented by mass torts, those solutions must remain within the bounds of the traditional notions of due process and the right to a jury trial. In Georgine v. Amchem Prods., Inc., 314 the Third Circuit framed the issue as presenting a choice between forging a solution to a societal problem and preserving institutional values. 315 Preferably, courts should attempt to forge a solution to the problems encountered by mass torts, but most importantly, create solutions that remain true to the fundamental principles of our jurisprudence 316—preserving the right for each party to truly have their "day in court"

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307 See Watson v. Shell Oil Co., 979 F.2d 1014 (5th Cir. 1992); see also In re Copley, 161 F.R.D. at 469 (finding its trial plan consistent with legal precedent).
308 979 F.2d 1014 (5th Cir. 1992).
310 Id. at 596.
311 Id. at 597.
312 See Watson, 979 F.2d at 1020.
313 See MASS TORT LITIGATION REPORT, supra note 34, at 4.
314 83 F.3d 610 (3d Cir. 1990).
315 See id. at 616.
316 See Tidmarsh, supra note 195, at 1804-05 ("[A] court facing a complex case must choose the most efficient procedure that violates no normative component of adjudication."); see also Ortiz v. Fibreboard, 119 S. Ct. 2295, 2325 (1999) (Breyer, J., dissenting) ("when 'calls for national legislation' go unanswered . . . judges can and should search aggressively for ways within the framework of existing law . . . to avoid a massive
and the right to a jury trial. The use of statistically significant bellwether plaintiffs, along with class certification of common issues, represent innovative solutions to improve judicial efficiency when courts are confronted with mass torts. Such innovative techniques, if applied too broadly, have the capability of undermining fundamental jurisprudential principles. In deciding when and in what manner to use statistical sampling, courts should be mindful of the cautions exhorted by Cato the Younger more than two-thousand years ago that fundamental principles should be "circumscribed only by tradition, but never [merely] by men."