INDIVIDUAL JUSTICE AND COLLECTIVIZING RISK-BASED CLAIMS IN MASS-EXPOSURE CASES

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In this Article, Professor Rosenberg discusses the perceived problem of individual justice in collectivized adjudication of mass-exposure cases. He focuses on risk-based claims—i.e., those claims predicated on exposure to a tortiously imposed risk, rather than on actual harm and loss—to argue for greater collectivization. Finding that standard procedural analyses are deficient, Professor Rosenberg calls for consideration of collectivization from the perspective of the deterrence and compensation policies underlying tort law generally and risk-based claims specifically. He demonstrates that deterrence offers the strongest—if not only—justification for such claims, and that collectivization enhances the deterrence goal in mass-exposure litigation. In addition, Professor Rosenberg explains that collectivization also promotes individual justice by providing plaintiffs with the levels of compensation and insurance that they would rationally select on their own, and that collectivization is consistent with objective standards used to determine both liability and damages in tort law. Based on this analysis, Professor Rosenberg concludes that if allowed to choose the process for adjudicating and settling mass-exposure cases, individuals would select mandatory collectivization.

INTRODUCTION

Mass-exposure cases have generated a sense of crisis concerning the legitimacy and manageability of state and federal systems of civil procedure. Prompted by the specter of overburdened dockets and the resulting delays and costs of resolving these cases, courts have increasingly (if diffidently) resorted to class actions, damage scheduling, and other processes that enable aggregate and averaged resolution of individual mass-tort claims.[1] Many experts on civil procedure regard this

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[1] See Jenkins v. Raymark Indus., 782 F.2d 468, 473 (5th Cir. 1986) (affirming class action certification of personal injury claims from asbestos exposure on grounds that "courts are now being forced to rethink the alternatives and priorities by the current volume of litigation and more frequent mass disasters"); see also In re A.H. Robins Co., 880

trend toward collectivization with alarm.[2] They view the departure from the conventional process of case-by-case, particularized adjudication as sacrificing too much individual justice to expedience.[3]

F.2d 709, 740 (4th Cir.) (citing growing favor of class actions in mass-tort context), cert. denied, 493 U.S. 959 (1989); In re "Agent Orange" Prod. Liab. Litig., 818 F.2d 145, 166-67 (2d Cir. 1987) (affirming class certification despite concerns about centrality of military contractor defense), cert. denied, 484 U.S. 1004 (1988). The recent rejection of a mass-tort class action in In re Rhone-Poulenc Rorer, Inc., 51 F.3d 1293, 1297-99 (7th Cir.), cert. denied, 116 S. Ct. 184 (1995), emphasizing the defendant's overwhelming success rate in individual trials (12 out of 13 cases), indicates the pivotal importance of judicial perceptions of threatened docket congestion in decisions to certify mass-tort class actions. For evidence that courts may be overreacting, see John C. Coffee, Jr., Class Wars: The Dilemma of the Mass Tort Class Action, 95 Colum. L. Rev. 1343, 1363-64 (1995) (comparing the "perception . . . that . . . mass tort cases would . . . inundate the federal docket" with the reality of uneven, localized impact of mass-tort cases). Given the ample reservoir of potential law suits, the use of class actions for only the very largest mass-tort cases will probably not reduce docket congestion over the long term. See, e.g., George L. Priest, Private Litigants and the Court Congestion Problem, 69 B.U. L. Rev. 527, 533-35 (1989) (positing interactive relationship between docket congestion and delay and probability of litigation).

[2] See, e.g., Robert G. Bone, Rethinking the "Day in Court" Ideal and Nonparty Preclusion, 67 N.Y.U. L. Rev. 193, 196-200 (1992) (arguing that nonparty preclusion may be more efficient than participatory aggregation of claims); Richard A. Epstein, The Consolidation of Complex Litigation: A Critical Evaluation of the ALI Proposal, 10 J.L. & Com. 1, 2-5, 49-50 (1990) (criticizing ALI proposal for compulsory consolidation as neither fair nor efficient, and probably unconstitutional); Linda S. Mullenix, Mass Tort as Public Law Litigation: Paradigm Misplaced, 88 Nw. U. L. Rev. 579, 580-82 (1994) (challenging Judge Weinstein's assertion that mass-tort cases are akin to public-law litigation); Roger H. Trangsrud, Mass Trials in Mass Tort Cases: A Dissent, 1989 U. Ill. L. Rev. 69, 69-70 (arguing that mass-tort cases present many problems, including unfairness to individual plaintiffs); cf. Owen M. Fiss, Against Settlement, 93 Yale L.J. 1073, 1075 (1984) (arguing that settlements, like plea bargaining, may trim dockets but do not necessarily serve justice). Judicial sentiment has oscillated over the last decade on the use of mass-tort class actions. Compare certifications of mass-tort class actions in In re School Asbestos Litig., 789 F.2d 996, 998-99 (3rd Cir.) (affirming class for compensatory damages despite misgivings about manageability), cert. denied, 479 U.S. 852 (1986), and cert. denied, 479 U.S. 915 (1986); *Jenkins*, 782 F.2d at 473 (citing class action as better alternative than repeated litigation in separate trials) and Castano v. American Tobacco Co., 160 F.R.D. 544, 559 (E.D. La. 1995) (certifying class as to core liability issues), rev'd, No. 95-30725, 1996 U.S. App. LEXIS 11815 (5th Cir. May 23, 1996), with decisions overruling certification in *Rhone-Poulenc Rorer*, 51 F.3d at 1297-99 (citing defendant's prior success rate as reason for not certifying class); In re Repetitive Stress Injury Litig., 11 F.3d 368, 373 (2d Cir. 1993) (revising consolidation order due to absence of commonality of fact) and In re Fibreboard Corp., 893 F.2d 706, 712 (5th Cir. 1990) (reversing class certification in asbestos litigation due to fact that common concerns did not predominate).

[3] See, e.g., Roger H. Trangsrud, Joinder Alternatives in Mass Tort Litigation, 70 Cornell L. Rev. 779, 779-80 (1985) (discussing tension between individual control and fairness, and efficiency); see also Coffee, supra note 1, at 1345 (discussing paradigm shift toward more collectivized structure). The conception of individual justice as the right to prosecute a separate tort action is rarely given more content and justification than the vague and self-validating assertions that individual participation "increases self-respect," Jerry L. Mashaw, Bureaucratic Justice: Managing Social Security Disability Claims 95-96 (1983), or meets the "special concern about being personally *talked to* about the decision rather than simply being *dealt with*." Laurence H. Tribe, American Constitutional Law 667 (2d ed. 1988). For

Unsurprisingly, this criticism of collectivized resolution of mass-tort cases proceeds from the standard universalist conception of individual justice that holds sway in civil procedure discourse.[4] The largely unexamined premise of this conception projects a generic system of particularized adjudication for the entire spectrum of common-law causes of action. Critics of collectivizing process in mass-tort cases take little or no account of the substantive tort policies of deterrence and compensation—as expressed by Holmes, "to prevent or indemnify from harm."[5] Indeed, recognition of the policy and social

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exceptions, see Bone, supra note 2, at 236 (arguing that there is no convincing case for universalist right to personal litigation control); Louis Kaplow, The Value of Accuracy in Adjudication: An Economic Analysis, 23 J. Legal Stud. 307, 389-90 (1994) (questioning "the process value of allowing individuals to be heard"). Other objections to collectivization include asserted adverse effects on the appearance of judicial legitimacy, on the feeling of client satisfaction, and on the extrajudicial political uses of litigation. See, e.g., Martha Minow, Making All the Difference: Inclusion, Exclusion and American Law 356-58 (1990) (discussing the impact of collectivization on judicial legitimacy); Mark A. Peterson & Molly Selvin, Resolution of Mass Torts: Toward a Framework for Evaluation of Aggregative Procedures 22-23 (Rand Inst. for Civil Justice 1988) (discussing symbolic and psychological effects of preemption of control and opportunity to be heard).

For my analysis of mass-tort claims, see David Rosenberg, Of End Games and Openings in Mass Tort Cases: Lessons from a Special Master, 69 B.U. L. Rev. 695, 701-03 (1989) [hereinafter Rosenberg, End Games] (discussing "myth and meaning of individual control"); David Rosenberg, The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System, 97 Harv. L. Rev. 849, 873-74 (1984) [hereinafter Rosenberg, Causal Connection] (arguing that "particularistic" evidence is unnecessary for jury certainty as to probability of causation in mass-exposure cases); David Rosenberg, Class Actions for Mass Torts: Doing Individual Justice by Collective Means, 62 Ind. L.J. 561, 582-83 (1986-1987) [hereinafter Rosenberg, Class Actions] (challenging rights-based argument about wide gap between individual and class action).

[4] See Martin v. Wilks, 490 U.S. 755, 762 (1989) (positing a general "'deep-rooted historic tradition that everyone should have his own day in court'" (quoting Charles A. Wright et al., 18 Federal Practice and Procedure § 4449, at 417 (1981))); Trangsrud, supra note 3, at 779-80 (describing general "inescapable tension between the interest of individual litigants in preserving individual control of claims and procedural fairness, on the one hand, and the interest of the judicial system in the efficient joinder of related claims, on the other"). In contemporary proceduralist parlance, rules of procedure (at least in federal courts) are "transsubstantive." See Geoffrey C. Hazard, Jr., Discovery Vices and Trans-Substantive Virtues in the Federal Rules of Civil Procedure, 137 U. Pa. L. Rev. 2237, 2237-38 (1989) (discussing criticism that transsubstantive scope of federal rules reaches too far). For discussion and critical appraisal of this universalist conception, see Bone, supra note 2, at 232 (countering argument of universalist right to "day in court").

[5] Oliver W. Holmes, Jr., The Common Law 145 (Little, Brown & Co. 1881). On the deterrence and compensation functions of tort law, see generally 1 American Law Inst., Reporters' Study, Enterprise Responsibility for Personal Injury 199-265 (1991) (examining underlying rationales and objectives of tort system).

As is evidenced from the works cited in supra note 3, most proceduralists fail to consider substantive tort policies. It appears that the authors of Federal Rule of Civil Procedure 23 also glossed over the import of state tort policy to the application of class actions to mass torts. See Judith Resnik, From "Cases" to "Litigation," 54 Law & Contemp. Probs. 5, 9-14 (1991) (discussing 1966 Advisory Committee's concerns about applying class action to mass torts). For the classic exception in the general literature of class actions, see Harry

contexts of mass-tort cases rarely ventures beyond vague and one-sided assertions that collectivization unfairly jeopardizes the supposedly paramount "dignity" interests of plaintiffs in "controlling" their "intimate" claims of personal injury and in having "a day in court" to express their grievances.[6] Few critics consider the deterrence and compensation objectives of tort law.[7] Nor do they take account of the fact that plaintiffs would rationally (and, in fact, frequently agree to) trade in settlement or otherwise by contract their "day in court" and other "participatory" prerogatives for lower product prices, higher wages, more effective deterrence, and greater levels of compensation.[8]

Kalven, Jr. & Maurice Rosenfield, The Contemporary Function of the Class Suit, 8 U. Chi. L. Rev. 684, 684-88 (1941) (arguing that class suit is only means of deterrence and compensation when individual claims are small but expensive to litigate); see also Kenneth W. Dam, Class Actions: Efficiency, Compensation, Deterrence, and Conflict of Interest, 4 J. Legal Stud. 47, 49 (1975) (same).

[6] See Richard B. Sobol, Bending the Law: The Story of the Dalkon Shield Bankruptcy 342 (1991) (concluding that designation of Dalkon Shield case as mandatory limited-fund class action improperly undermined "the right of women with serious injury to be paid in accordance with a jury determination of the value of their claims"); Bone, supra note 2, at 286-87 (discussing dignity interest in connection with notion of "a day in court"); Edward F. Sherman, Aggregate Disposition of Related Cases: The Policy Issues, 10 Rev. Litig. 231, 246-67 (1991) (discussing policies disfavoring aggregation); Trangsrud, supra note 2, at 74-76 (discussing traditional justifications for individual claim autonomy and suggesting that such justifications retain their vitality); see also Ronald Dworkin, Principle, Policy, Procedure, in A Matter of Principle 72, 102-03 (1985) (discussing due process and right to be heard); Minow, supra note 3, at 358-59 (presenting and countering argument that judicial competence is compromised in collective children's rights cases because "no one can be certain of children's interests"). The general and unexplained assumption is that the purported process values embraced by notions of individual justice necessarily imply "participation" in the literal, unidirectional sense of compelling the public and defendant to give the plaintiff a "day in court." This understanding of "participatory" process values typically elides the question of why the supposed interest of a mass-tort plaintiff in wasting resources on redundant litigation of a common question should trump the interests of the public and mass-tort defendant (and that of its employees and consumers) in avoiding the financial costs of such redundant litigation.

[7] See sources cited supra note 3. Nowhere is the disregard for tort policy more in evidence than when proceduralists consider proportional liability. Cf. Robert G. Bone, Statistical Adjudication: Rights, Justice, and Utility in a World of Process Scarcity, 46 Vand. L. Rev. 561, 576, 634, 650 (1993) (arguing that sampling, statistical method of determining damages by trying random sample of cases, tends to under- and overcompensate victims but is justified as fair way to distribute scarce process among those with participation rights); Ernest J. Weinrib, Causation and Wrongdoing, 63 Chi.-Kent L. Rev. 407, 410 (1987) (arguing that alternative liability is justified where both causation and wrongdoing are normative, not just instrumental, elements of tort).

[8] Trades allocating the risks and benefits of business activity occur in postaccident ("ex post") settlements and preaccident ("ex ante") contracts by consumers or institutional representatives such as government units, unions, and insurance carriers. See generally Richard Craswell, Passing on the Costs of Legal Rules, in Foundations of Contract Law 30, 30-39 (Richard Craswell & Alan Schwartz eds., 1994) (analyzing effects of legal rules and pass-ons to consumers); Kaplow, supra note 3 (analyzing value of accuracy in adjudication, with attention paid to ex post and ex ante determinations). That average workers and

Concern over mass-tort class actions is primarily not with their preclusive effect per se, but rather with the possibility that aggregation will lead to averaging, for example, by proportioning compensation according to the classwide (or subclasswide) probability of liability (e.g., causation) and loss (e.g., nonpecuniary pain and suffering). When averaging is introduced, analysis of the relationship between individual justice and collectivization usually ends very quickly with a flat declaration that the economies of collectivization should never come at the expense of what, in effect, is an a priori postulated "right of self-determination" of each mass-tort plaintiff to claim and receive damages by the same individualizing process that would have been available (however ineffectively) in the conventional separate action.[9] Although this right against averaging may be waived by express consent (typically, in settlement or through an opt-in procedure for class action trial), such voluntary joinder is likely to be blocked not only by the plaintiffs' "individual" attorneys who have a high financial stake in maintaining individualized process, but also by the plaintiffs themselves (and their attorneys) who have incentives to use their power of consent as leverage for extorting disproportionate shares of the benefits from collective action.

To overcome the myopia of proceduralist analysis that magnifies the tension between collectivization and individual justice, this Article seeks to reorient discussion towards a tort-policy perspective. This perspective focuses analysis of civil procedure for tort cases on the discrete functions of tort liability in minimizing the costs of accident, most importantly by achieving appropriate levels of deterrence and compensation consistent with the efficient administration of justice.[10]

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consumers generally pay for their common-law "rights" was first recognized in the mass-tort context by Holmes:

> Our law of torts comes from the old days of isolated, ungeneralized wrongs, assaults, slanders, and the like, where the damages might be taken to lie where they fell by legal judgment. But the torts with which our courts are kept busy to-day are mainly the incidents of certain well known businesses. They are injuries to person or property by railroads, factories, and the like. The liability for them is estimated, and sooner or later goes into the price paid by the public.

Oliver W. Holmes, The Path of the Law, in Collected Legal Papers 167, 183 (1920).

[9] See, e.g., In re Fibreboard Corp., 893 F.2d 706, 709 (5th Cir. 1990) (invoking constitutional norms of due process to reject classwide proportionate determinations of causation and damages in asbestos class action); Roger C. Cramton, Individualized Justice, Mass Torts and "Settlement Class Actions": An Introduction, 80 Cornell L. Rev. 811, 821-22 (1995) (noting that collective action may create problem of depriving individuals of freedom of action by drawing them involuntarily into collective action).

[10] See Guido Calabresi, The Costs of Accidents: A Legal and Economic Analysis 24-33 (1970) (discussing justice and reduction of accident costs as principal goals of accident law). For preliminary purposes, references to the deterrence goal mean the use of tort liability to

Application of the functional approach first requires relating these goals to a specified, intelligible conception of individual justice, and second, comparing collective and conventional processes according to their relative capacity to deter and compensate harms from mass torts consistent with individual justice. The concept of individual justice adopted here embraces a rational-choice notion of self-determination. Under this assumption, an individual confronting uncertainty prefers the process option that maximizes expected personal utility (welfare) from tort liability.[11]

Collectivization of "risk-based" claims arising from mass-exposure cases provides the specific context for the functional analysis of the problem of individual justice presented by this paper. Part I briefly describes the nature of mass-exposure cases and the use of various types of risk-based claims in such cases. It also explains how risk-based claims have been collectivized, highlighting the features that have thrust this practice upon center-stage in the broader debate over individual justice and collectivization. Part II evaluates the functional benefits of risk-based claims in terms of the standard compensation and deterrence objectives of tort liability and concludes that deterrence represents the strongest if not the only plausible justification for risk-based claims. Part III examines the functional benefits of collectivizing risk-based claims and the effects on the conception of individual justice as a rational-choice notion of self-determination. The analysis demonstrates that collectivizing risk-based claims enhances their deterrence value. To the extent that risk-based claims may be

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create incentives for cost-effective reduction of risk; references to the compensation goal imply the notion of making plaintiffs whole by redressing their tortiously caused losses.

[11] Rational choice implies that individuals facing an uncertain fate select the combination of possible outcomes and means of producing them that maximizes expected utility. Utility is defined as the relative ordinal valuation an individual attaches to a given interest or preference. This usage of "utility" corresponds with the concept of "value" adopted by the Restatement (Second) of Torts §§ 292, 293, 520 (1977). Significant to the present analysis of individual justice as a means of protecting individual interests, tort law enforces an individual's valuation of a given interest only to the extent of the value society attaches to that interest. Section 292 of the Restatement, for example, specifies that in determining "what the law regards as the utility of the actor's conduct," an important factor is "the social value which the law attaches to the interest which is to be advanced or protected by the conduct." Id. § 292. Although private and social valuation are thus not necessarily congruent, this Article proceeds on the simplifying assumption that they are. See id. § 292 cmt. a (adopting premise that "the interest of the public as a group can best be served by permitting the utmost freedom of individual initiative"). As such, rational social choice reflects rational individual choice. For general discussion of rational choice and social welfare theory, see generally Kenneth J. Arrow, Social Choice and Individual Values (1951) (discussing social choice and the social welfare function); John C. Harsanyi, Morality and the Theory of Rational Behavior, 44 Soc. Res. 623 (1977) (discussing three traditional explanations of human morality and proposing equiprobability model where decisionmakers have the same probability of occupying any position in society when decision is made).

thought to serve the compensation goal, moreover, collectivized averaging reflects more accurately than individualized determinations the pervasive use of external (objective) standards of liability and damages, the actual level of loss from tortious conduct, and the type of insurance plaintiffs would rationally choose to buy on their own to maximize individual expected utility. Brief concluding remarks offer a normative defense of the rational-choice conception of individual justice and of rejecting procedure-specific objections to collectivization of risk-based claims in mass-exposure cases. In short, if allowed to select the process for adjudicating and settling mass torts (for example, in connection with the purchase of some product or service that might give rise to such a tort), individuals would choose mandatory collectivization.

I
OVERVIEW

A. Mass-Exposure Cases

Mass-exposure cases usually involve exposure either to the hazards of toxic substances, such as asbestos, or to dangerous or defective products, such as mechanical heart valves. These cases present claims characteristic of mass-tort cases generally: numerous individual plaintiffs and suits, widely dispersed over time, territory, and jurisdiction; multiple defendants in contractual privity or commercial competition with one another; tortious infliction of harm to person or property resulting from a single act or series of acts over time, arising from market and nonmarket contexts, and affecting the interests of more than one jurisdiction; and highly complex and costly adjudications of issues of law and fact, frequently raising questions at the frontier of science, technology, and other basic intellectual disciplines.[12]

[12] See Peter H. Schuck, Mass Torts: An Institutional Evolutionist Perspective, 80 Cornell L. Rev. 941, 942, 947 (1995) (discussing complex characteristics of mass-tort litigation and emergence of new legal regime). See generally Daubert v. Merrell Dow Pharmaceuticals, Inc., 113 S. Ct. 2786 (1993) (addressing admissibility of scientific evidence and expert testimony); Gerald W. Boston, A Mass-Exposure Model of Toxic Causation: The Content of Scientific Proof and the Regulatory Experience, 18 Colum. J. Envtl. L. 181 (1993) (examining question of toxic causation and emergence of mass/isolated exposure model); Troyen A. Brennan, Causal Chains and Statistical Links: The Role of Scientific Uncertainty in Hazardous-Substance Litigation, 73 Cornell L. Rev. 469 (1988) (clarifying differences between legal causation and scientific causation); Heidi L. Feldman, Science and Uncertainty in Mass Exposure Litigation, 74 Tex. L. Rev. 1 (1995) (examining effects of scientific uncertainty in tort litigation); Steve Gold, Causation in Toxic Torts: Burdens of Proof, Standards of Persuasion, and Statistical Evidence, 96 Yale L.J. 376 (1986) (examining doctrinal issues raised by growing importance of statistical proof in toxic tort litigation); David Rosenberg, The Uncertainties of Assigned Shares Tort Compensation: What We

In addition, mass-exposure cases typically combine all of the functionally troublesome aspects of mass-tort cases. The principal reason for focusing on mass-exposure cases is that they typically involve two distinctly confounding features—causal indeterminacy and long-term risk—requiring collective processes to achieve the functional ends of tort liability and therefore pose the greatest theoretical and practical challenge to the orthodox conception of individual justice.

1. Causal Indeterminacy

From a functional perspective, the more intractable of these features is the pervasive causal indeterminacy that precludes the use of conventional process to determine specifically the causal connection between a particular plaintiff's injury and a particular defendant's tortious conduct. Rational pursuit of deterrence and compensation objectives in mass-exposure cases requires cost-effective use of the collectivizing measure of probabilistically proportioned liability. Because its functional benefits have been analyzed extensively,[13] probabilistically proportioned liability is treated in this paper as the standard approach.

2. Long-Term Risk

Causal indeterminacy often aggravates the functional difficulties created by the second distinct feature of primary concern: the extended delay between the time when the tortious act occurs and when the major type of causally associated harm and consequent loss is incurred or becomes manifest. The long latent cancer risks from tortious exposures to toxic substances provide an illustrative example. Latency periods for toxic-related cancer generally create windows of risk framed by a minimum threshold of one to two decades and a maximum, postthreshold period of vulnerability ranging from several decades to life.[14] Epidemiological studies can predict (with increasing

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Don't Know Can Hurt Us, 6 Risk Analysis 363 (1986) (discussing uncertainties inherent in assigned shares approach to proportional liability).

[13] See Glen O. Robinson, Multiple Causation in Tort Law: Reflections on the DES Cases, 68 Va. L. Rev. 713, 749-67 (1982) (examining issues of causation in context of problem of allocating responsibility among multiple tortfeasors); Rosenberg, Causal Connection, supra note 3, at 892-900 (discussing functional productivity and effect of proportional liability); Steven Shavell, Uncertainty over Causation and the Determination of Civil Liability, 28 J.L. & Econ. 587, 599-604 (1985) (studying uncertainty regarding causation and its importance to the workings of liability system).

[14] See Brennan, supra note 12 (explaining that latency period before injury manifests itself follows exposure to toxic material); Ann Taylor, Public Health Funds: The Next Step in the Evolution of Tort Law, 21 B.C. Envtl. Aff. L. Rev. 753, 757-58 (1994) (noting long latency period of toxic exposure-related diseases).

accuracy over time) the rate of cancer incidence in the exposed population attributable to the toxic substance in question. In most cases, only a relatively small fraction of that population will contract the toxic-related cancer.[15] Corresponding to the random incidence of cancer, suits by cancer victims will be distributed sparsely and broadly over time and jurisdictions, and hence unamenable to conventional joinder procedures or even to class actions.[16] Depending on when discovery of the cancer risk occurs, the vast majority of those in the exposed population—most of whom will never contract the toxic-related cancer—nevertheless incur costs of long-term risk-bearing (as distinct from the harm caused by the disease itself), in particular, psychological distress over the prospect of contracting the toxic-related cancer in question and the need for medical surveillance and preventive care.[17]

B. Risk-Based Claims

Risk-based claims have been advanced in mass-exposure litigation to remedy the difficulties created by the long risk intervals between the commission of the tortious act and the incidence of the ultimate accrued harm.[18] These claims are styled "risk-based" be-

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[15] See Tim Bradner, Valdez Air Quality: New Findings Support Alyeska, Alaska J. Comm., Jan. 4, 1993, at 12 (reporting revised estimates of "small" increase in cancer risk due to benzene emissions in Alaska); see also Brennan, supra note 12, at 473-74 (noting lack of consensus and uncertainty concerning degree to which hazardous substances cause cancer—while one discussed study indicated that occupational carcinogens account for 20% of cancer mortality, another study contended that they only caused 4% of such mortality); cf. Bert Black & David E. Lilienfeld, Epidemiologic Proof in Toxic Tort Litigation, 52 Fordham L. Rev. 732, 739 (1984) (proposing that toxic tort plaintiffs be required to show greater than 50% risk of developing cancer).

[16] See, e.g., In re Asbestos Sch. Litig., 104 F.R.D. 422, 428 (E.D. Pa. 1984) (noting—as prerequisite for class certification—that class as defined "must be 'so numerous that joinder of all members is impracticable'" (quoting Fed. R. Civ. P. 23(a)(1))), rev'd in part, 789 F.2d 996, 1011 (3d Cir. 1986) (affirming district court's conditional class certification for recovery of costs incurred to abate risk of harm due to presence of asbestos in schools nationwide, and noting that "the district court has demonstrated a willingness to attempt to cope with an unprecedented situation in a somewhat novel fashion").

[17] The leading cases recognizing the nature and costs of long-term risk bearing from toxic substances exposures are Potter v. Firestone Tire & Rubber Co., 863 P.2d 795, 826 (Cal. 1993) (outlining standards for recovery for long-term fear resulting from exposure to toxic substance); Ayers v. Township of Jackson, 525 A.2d 287, 315 (N.J. 1987) (awarding damages for cost of medical surveillance based on enhanced, although unquantified, risk of future disease resulting from exposure to toxic chemicals).

[18] See generally Glen O. Robinson, Probabilistic Causation and Compensation for Tortious Risk, 14 J. Legal Stud. 779 (1985) (arguing for risk-based recovery in toxic tort cases); Rosenberg, Causal Connection, supra note 3 (arguing that in mass-tort cases courts should impose liability and distribute compensation in proportion to probability of causation); Christopher H. Schroeder, Corrective Justice and Liability for Increasing Risks, 37 UCLA L. Rev. 439 (1990) (arguing that corrective justice requires liability for increased risk of harm); Alan Schwartz, Causation in Private Tort Law: A Comment on Kelman, 63 Chi.-

cause they are predicated simply on exposure to a tortiously imposed risk. They seek damages without regard to formal accrual or any physical effect (manifested or not) of the ultimate major harm and loss, which is causally associated with the tortious act in question; indeed, they seek damages without regard to formal accrual—or any physical effect—of a causally related minor or precursor condition. Risk-based claims—to the extent that they are recognized at all—vary among jurisdictions in scope and requirements,[19] but for present purposes it suffices to identify the main features and applications of the three basic types of such claims.

1. Insurance Fund

Sometimes styled a cause of action for "increased risk," these risk-based claims seek damages measured by the expected value of the ultimate harm and loss in question—more accurately, the expected judgment of liability and damages.[20] In effect, these risk-based claims compel the tortfeasor to pay a mass-exposure plaintiff the premium that would purchase an insurance policy providing tort-type and tort-level damages in the event that the ultimate accrued harm occurs. As such, the premium equals the risk of, or expected loss from, the ultimate accrued injury.[21] Like commercial first-party insurance policies or third-party liability insurance, nothing in the nature of the in-

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Kent L. Rev. 639, 646 (1987) (noting that some commentators hold position that risk of harm should be compensable).

[19] See *Potter*, 863 P.2d at 821-25 (surveying diverse approaches to medical monitoring claims); In re Paoli R.R. Yard PCB Litig., 916 F.2d 829, 849-52 (3d Cir. 1990) (permitting risk-based claims for medical monitoring claims), cert. denied, 499 U.S. 961 (1991); Gideon v. Johns-Manville Sales Corp., 761 F.2d 1129, 1136-38 (5th Cir. 1985) (allowing risk-based claim if joined in lawsuit for present damages); Caputo v. Boston Edison Co., No. 88-2126-Z, 1990 WL 98694, at *4 (D. Mass. July 9, 1990) (denying risk-based claims), aff'd, 924 F.2d 11 (1st Cir. 1991). See generally Schuck, supra note 12, at 956, 981 (summarizing strategies used by courts in mass-tort cases); Barton C. Legum, Note, Increased Risk of Cancer As an Actionable Injury, 18 Ga. L. Rev. 563 (1984) (noting that statute-of-limitations and proof requirements virtually bar cases predicated on increased risk).

[20] See, e.g., Jackson v. Johns-Manville Sales Corp., 781 F.2d 394, 396 (5th Cir.) (allowing asbestos-exposed plaintiff to recover "for the reasonable medical probability of contracting cancer in the future"), cert. denied, 478 U.S. 1022 (1986); see also Sterling v. Velsicol Chem. Corp., 647 F. Supp. 303, 321-22 (W.D. Tenn. 1986) (allowing recovery for enhanced risk of liver and kidney disease), rev'd in relevant part, 855 F.2d 1188, 1204-05 (6th Cir. 1988); Mauro v. Raymark Indus., Inc., 561 A.2d 257, 260-67 (N.J. 1989) (holding that plaintiff may recover for enhanced risk of disease only upon proof that contraction of disease is probable). But see Schweitzer v. Consolidated Rail Corp., 758 F.2d 936, 942 (3d Cir.) (finding that "exposure to asbestos is insufficient to constitute the actual loss or damage to a plaintiff's interest required to sustain a cause of action"), cert. denied, 474 U.S. 864 (1985); Eagle-Picher Indus., Inc. v. Cox, 481 So. 2d 517, 521-26 (Fla. Dist. Ct. App. 1985) (disallowing damages for future risk of cancer), review denied, 492 So. 2d 1331 (Fla. 1986).

[21] See Steven Shavell, Economic Analysis of Accident Law 192 (1987) (stating that according to insurance theory, actuarially fair premium rate equals risk of loss multiplied

surance-fund claim precludes payment of particularized rather than averaged benefits. Insurance-fund claims are most attractive to mass-exposure plaintiffs (and to society, as well, for reasons of deterrence) whose early claims for the ultimate harm and loss, especially when coupled with claims for punitive damages or when competing against nontort creditors, threaten to exhaust the defendant's assets before satisfying all claims.

2. *Mitigation*

These risk-based claims include demands for the defendant to reimburse, fund, or specifically perform services to reduce the ultimate harm and loss. Examples include claims for medical surveillance and preventive care, as in the DES case;[22] hazard abatement, as in the asbestos property cases;[23] clean-up, restoration, and rehabilitation of

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by magnitude of loss attributable to individual's activity for which coverage is being sought).

[22] See Payton v. Abbott Labs, 83 F.R.D. 382, 389 n.3 (D. Mass. 1979) (listing remedies sought by plaintiffs, including: notification to "girls, women, and doctors of facts about DES," establishment of free clinics for examination of class members, and establishment of an insurance fund "to compensate class members who might suffer later from any cancer that DES has induced"), vacated, 100 F.R.D. 382 (D. Mass. 1983); see also *Paoli R.R. Yard PCB Litig.*, 916 F.2d at 849-52 (seeking recovery for medical monitoring costs); Herber v. Johns-Manville Corp., 785 F.2d 79, 83 (3d Cir. 1986) (finding that trial court abused its discretion by not allowing medical monitoring claim); Castano v. American Tobacco Co., 160 F.R.D. 544, 548 (E.D. La. 1995) (summarizing claims that defendant tobacco companies are financially responsible for notifying smokers of nicotine's addictive nature, for compensating class for funds used to purchase cigarettes, and for monitoring health of class members and reimbursing them for medical expenses through establishment of medical monitoring fund), rev'd, No. 95-30725, 1996 U.S. App. LEXIS 11815 (5th Cir. May 23, 1996); *Potter*, 863 P.2d at 821-25 (sustaining claim for medical monitoring costs); Askey v. Occidental Chem. Corp., 477 N.Y.S.2d 242, 246 (App. Div. 1984) (same); Taylor, supra note 14, at 776-86 (discussing medical monitoring damages). Medical monitoring and preventive care often are provided by class action settlement. See, e.g., In re Silicone Gel Breast Implant Prod. Liab. Litig., No. CV 92-P-10000-S, 1994 WL 578353, at *2 (N.D. Ala. Sept. 1, 1994); Bowling v. Pfizer, Inc., 143 F.R.D. 141, 148-49 (S.D. Ohio 1992).

[23] See, e.g., In re School Asbestos Litig., 789 F.2d 996, 1008-10 (3d Cir.) (allowing class action certification in case regarding recovery of abatement costs), cert. denied, 479 U.S. 852 (1986), and cert. denied, 479 U.S. 915 (1986); see also Asbestos Hazard Emergency Response Act of 1986, 20 U.S.C. § 4022 (1994) (authorizing transfer of money damages from asbestos litigation pursued by United States to trust fund for asbestos abatements); Security Homestead Ass'n v. W.R. Grace & Co., 743 F. Supp. 456, 458 (E.D. La. 1990) (seeking damages for asbestos abatement); Adams-Arapahoe Sch. Dist. No. 28-J v. Celotex Corp., 637 F. Supp. 1207, 1209 (D. Colo. 1986) (same), rev'd, 958 F.2d 381 (10th Cir. 1992); City of Manchester v. National Gypsum Co., 637 F. Supp. 646, 647 (D.R.I. 1986) (same).

the environment, as in the Exxon Valdez oil-spill case;[24] and research and development, as in the mechanical heart valve case.[25]

3. *Mental Distress*

These claims seek damages for the adverse psychological consequences of bearing tortiously imposed risk.[26] Risk-based mental distress claims generally involve no substantial pecuniary losses, such as impairment of job performance or expenses for psychiatric treatment.

C. *The Collectivization Threat to Individual Justice*

Collectivized resolution of risk-based claims is thought to offend notions of individual justice primarily by depriving individual plaintiffs of the opportunity to litigate or settle their tort actions on their own, self-determined terms—in the sense of being both individually chosen and particularized. Risk-based claims are especially vulnerable to this offense because they usually promise too little return on the plaintiff attorney's contingency investment to make their separate litigation worthwhile. Hence collectivization often provides the only means for vindicating these claims. While damage scheduling usually attracts the most intense objections by advocates of the self-determination notion of individual justice, class action aggregation also receives a large share of criticism.

1. *Class Action Aggregation*

By aggregating claims for discovery and trial, class actions necessarily deny the majority of plaintiffs the opportunity to litigate separate actions, at least with respect to designated "common questions"

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[24] See Alaska Sport Fishing Ass'n v. Exxon Corp., 34 F.3d 769, 771 (9th Cir. 1994) (seeking damages to provide for environmental mitigation and monitoring fund), aff'd sub nom. In re Joint Briefing of Issues on Appeal from Trans-Alaska Pipeline Liab. Fund, 51 F.3d 280 (9th Cir. 1995); In re Exxon Valdez, No. A89-0095-CV, 1994 WL 182856, at *4 (D. Alaska Mar. 23, 1994) (describing funds established from Exxon's damage payments "for use in restoring, rehabilitating, and augmenting the natural resources of the area affected by the Exxon Valdez oil spill").

[25] See *Bowling*, 143 F.R.D. at 149, 170 (finding unpersuasive criticisms of proposed settlement that included payment for diagnostic techniques and replacement surgery for valve recipients facing significant risk).

[26] See, e.g., Sterling v. Velsicol Chem. Corp., 647 F. Supp. 303, 320-21 (W.D. Tenn. 1986) (recognizing claim for reasonable "fear of developing a disease in the future, such as cancer"), aff'd in relevant part, 855 F.2d 1188, 1206 (6th Cir. 1988); see also Watkins v. Fibreboard Corp., 994 F.2d 253, 258-59 (5th Cir. 1993) (same); Clark v. Taylor, 710 F.2d 4, 13-14 (1st Cir. 1983) (upholding damage award for physical distress, reasonably foreseeable medical expenses, and fear of developing cancer); *Potter*, 863 P.2d at 804-16 (denying plaintiffs' claim for emotional distress). For discussion of claims for mental distress regarding the prospect of future harm, see Glen Donath, Comment, Curing Cancerphobia Phobia: Reasonableness Redefined, 62 U. Chi. L. Rev. 1113 (1995).

of fact and law. That most class actions settle (like most separate actions)[27] only increases the perceived inconsistency between aggregation and individual justice. Class action settlements preclude separate suits and settlements for all class members who fail to opt out of the class.

Realistically, the standard option to exit from the class to avoid the binding effect of settlement or judgment provides only marginal assurance for individual class members to determine the fate of their risk-based claims. For those cases in which the class action is certified for discovery and trial, the avoidance of the one-way intervention problem requires class members to exercise their exit option at an early stage of the litigation, long before they have any basis for predicting the probable judgment or, as is generally the case, the terms of settlement. Lack of information needed to make a reasonable evaluation, however, does not necessarily result from insufficient notice or the undeveloped state of the record. Rather, the pervasive impediment to making an informed choice is that the class member cannot afford to pay an independent attorney for an assessment of the relative value of collective versus conventional resolution.[28] Plaintiff attorneys would have little incentive to offer this assessment on a contingent-fee basis given the likelihood of the class member opting for collective resolution. The combination of discovery costs and inevitable conflicts of interest, moreover, suggests that class members would have little incentive to accept a contingent-fee arrangement.[29] These barriers to the supply of information and expertise undermine the possibility of self-determination even when the class action is certified solely for settlement purposes and when the class member exercises the exit option with full notice and knowledge of the terms of settlement.

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[27] See Bryant G. Garth, Studying Civil Litigation Through the Class Action, 62 Ind. L.J. 497, 501 (1987) (finding that of 46 certified class actions studied in Northern District of California, only 10 were litigated and 36 settled); Michael J. Saks, Do We Really Know Anything About the Behavior of the Tort Litigation System—and Why Not?, 140 U. Pa. L. Rev. 1147, 1212-13 (1992) ("Settlement is where the action is. Fewer than 10% of lawsuits require a trial for their resolution."); Schuck, supra note 12, at 958 (noting that risks of trial induce pretrial disposition of greater than 95% of civil claims).

[28] See Jonathan R. Macey & Geoffrey P. Miller, The Plaintiffs' Attorney's Role in Class Action and Derivative Litigation: Economic Analysis and Recommendations for Reform, 58 U. Chi. L. Rev. 1, 19-20 (1991) (noting free-rider problem as well).

[29] Giving the consulting attorney a contingency interest would negate most of the gains to class members from a classwide settlement.

2. *Damage Scheduling*

The averaging used to formulate damage schedules—presumably necessary in class actions, given the design and information costs—contravenes the notion of individual particularization and choice attributed to individual justice.[30] Two types of such averaging compromise self-determination of risk-based claims. The first is frequently involved in damage schedules mandated by judgment or settlement. Damage schedules generally average payments according to more or less generalized categories of harm and loss. Because the degree of generality of the damage schedules depends on the marginal cost-effectiveness of greater specificity, the relatively low value of risk-based claims is likely to result in a highly generalized if not completely undifferentiated payment schedule.

The second form of damage schedule averaging appropriates the value of risk-based claims for the benefit of class members who contract the ultimate accrued harm and loss.[31] Scheduled payments to these class members are thus increased directly or implicitly by broadening payment categories or by lowering the costs of filing and prov-

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[30] The pioneering case on mass-tort damage scheduling is Cimino v. Raymark Indus., Inc., 751 F. Supp. 649, 658 (E.D. Tex. 1990) (upholding and applying actual damage multiplier in scheduling of punitive damages). On the benefits of averaged damage payment schedules, see Kenneth S. Abraham & Glen O. Robinson, Aggregative Valuation of Mass Tort Claims, 53 Law & Contemp. Probs. 137, 139 (1990) (arguing that such a mechanism can positively transform process of adjudicating and settling mass-tort claims); James F. Blumstein et al., Beyond Tort Reform: Developing Better Tools for Assessing Damages for Personal Injury, 8 Yale J. on Reg. 171, 173 (1991) (arguing that scheduling "promote[s] consistency and predictability of overall valuations by narrowing the very broad and standardless discretion currently accorded to juries"); David Rosenberg, Damage Scheduling in Mass Exposure Cases, 1 Cts., Health Sci. & L. 335, 336 (1991) (showing that tort system's "commitment to individualized justice can be reconciled with damage scheduling"); Michael J. Saks & Peter D. Blanck, Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in the Trial of Mass Torts, 44 Stan. L. Rev. 815, 828 (1992) (arguing the perception that aggregation provides inferior adjudication is largely illusory); Peter H. Schuck, Scheduling Damages and Insurance Contracts for Future Services: A Comment on Blumstein, Bovbjerg and Sloan, 8 Yale J. on Reg. 213, 217 (1991) (evaluating authors' proposal for damage scheduling as "attractive at several levels," while noting "a number of conceptual and practical problems"). For a critical view, see Bone, supra note 7, at 566 (evaluating many "important normative issues" raised by scheduling).

[31] See Coffee, supra note 1, at 1394, 1398 (describing the "insurance system" created by class action settlement in Georgine v. Amchem Prods., Inc., 157 F.R.D. 246 (E.D. Pa. 1994), vacated and remanded, Nos. 94-1925 et al., 1996 U.S. App. LEXIS 11191 (3d Cir. May 10, 1996), under which value of claims involving no physical impairment was transferred to increase level of compensation for serious injuries); see also Bowling v. Pfizer, Inc., 143 F.R.D. 141, 168-69 (S.D. Ohio 1992) (permitting class action settlement paying small flat amount to all class members regardless of their lack of injury and thereby conserving funds for "insurance" coverage of serious injury at tort-level damages).

ing claims for scheduled payments.[32] Class members who are fortunate enough to avoid suffering the ultimate harm and loss receive little or no direct payment for their risk-based claims. Although class action settlements commonly employ this form of averaging, courts may be persuaded to impose it by judgment in view of the apparent economy and equity of channeling compensation to the relatively small subgroup of seriously injured class members.

II
FUNCTIONAL ANALYSIS OF RISK-BASED CLAIMS

The following analysis uses the standard compensation and deterrence functions of tort liability to demonstrate that risk-based claims in mass-exposure cases serve rather limited roles. These conclusions extend more broadly to claims based on ultimate accrued harm and loss because much of what plaintiffs regard as the most important components of those claims consists of risk-based elements. A claim arising from toxic-related cancer by a living plaintiff, for example, usually includes demands for future damages to cover toxic-related increased risk of substantially greater harm and loss, such as premature death, and toxic-related increased costs of mitigation and mental distress brought about by long-term risk bearing.

A. The Compensation Function of Risk-Based Claims

Social insurance, wealth redistribution, and corrective justice comprise the standard compensation rationales for tort liability.[33] Although theoretically distinct, in reality these rationales largely collapse into one another. Taken together, they provide meager, if any, support for risk-based claims in mass-exposure cases, and they create no impediment to collective processing of these claims.

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[32] For example, assume a class of 1000, with each member possessing a mental distress claim valued at $5000 (net of litigation costs), and that one percent of the class will suffer the ultimate injury, valued on average at $1 million (net of litigation costs). Taking account of the risk aversion of class members—as well as the lack of value that mental distress claims have as insurance—the damage schedule might aggregate and distribute (say, all and pro rata) the value of the mental distress claims among those who suffer the ultimate injury. As such, the damage schedule provides each class member with a tort insurance policy covering the ultimate injury, which augments the base claim value of $1 million by $500,000 ($5000 multiplied by 1000 and then divided by the 10 class members who suffer the ultimate injury). Cf. Shavell, supra note 21, at 206-14, 262-64 (elaborating theory of insurance predicated on risk aversion to high-magnitude losses).

[33] See 1 American Law Inst., supra note 5, at 24-25, 28-30 (1991) (commenting that notions of corrective justice have become less resonant in real-world tort litigation despite their hold on popular scholarly mind); Calabresi, supra note 10, at 32 ("[P]eople have sought to use accident law as a means of reducing inequalities in income distribution, or of attacking problems of depression and unemployment.").

1. *Social Insurance*

The most prevalent compensation justification for tort liability in this century has been social insurance, particularly through strict liability.[34] But the social-insurance rationale offers little support for conventional processing of risk-based claims. Risk-based claims suffer not only from the general deficiencies of tort liability as a sensible means of supplying social insurance, but also from their own distinct limitations.

First, litigation costs make the insurance provided by tort liability far more expensive than that supplied by first-party commercial health, disability, and life insurance, and by government-mandated insurance such as workers' compensation, social security, and other tax-financed plans.[35]

Second, tort liability spreads losses less broadly and less efficiently than first-party commercial and government insurance. Because the incidence of nontort harms vastly exceeds the toll from tortious conduct, first-party insurance, say, for medical monitoring and preventive treatment, operates generally on generic categories of harm. First-party coverage disregards issues of causal attribution and foreseeability, elements essential for compensation under strict liabil-

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[34] See George L. Priest, The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law, 14 J. Legal Stud. 461, 463 (1985) (tracing history of argument that business enterprises ought to be responsible for losses resulting from products that they introduce into society and that it is their role to provide societal insurance by internalizing such costs).

[35] See Shavell, supra note 21, at 243-44 (discussing optimal insurance coverage when victims can and cannot influence risk); cf. Kenneth S. Abraham, Individual Action and Collective Responsibility: The Dilemma of Mass Tort Reform, 73 Va. L. Rev. 845, 901 (1987) (noting difficulties of multiple insurance coverage). Risk-based insurance-fund claims prosecuted by separate actions prove grossly inefficient as a means of insurance, even when compared to accrued ultimate harm claims. A realistic example is a prescription drug that poses a tortious risk of a .001 probability of $5 million loss. Excluding the risks and costs of litigation, an increased-risk claim equal to the actuarially fair premium for insurance compensation (in tort-levels and -types) would yield the plaintiff $5000. Add to the calculus the following reasonable risk and cost assumptions: 70% probability of success at trial; 2000 hours of pretrial and trial preparation and other work; and $100,000 in expert, discovery, and other out-of-pocket expenses. Given the negative return in both compensation and fee from these assumptions, neither the plaintiff nor attorney would rationally commence the risk-based claim. On the notoriously high costs of litigating in the tort system, see generally 1 American Law Inst., supra note 5, at 30 (noting considerable flaws of tort law as a source of disability insurance).

That the plaintiff would be much better off buying first-party insurance against the loss is indicated by the net benefit estimate derived from asbestos litigation: "For every $2.71 expended by defendants and insurers . . . the plaintiff receives $1 . . . an estimated 37 percent of the total expended." James S. Kakalik et al., Costs of Asbestos Litigation at viii (Inst. for Civil Justice 1983); see also 1 American Law Inst., supra note 5, at 403-04 (discussing compensation with respect to asbestos claims).

ity and for determination of net utility and cost-effective precautions under the negligence rule.

Third, risk-based claims providing insurance against the nonpecuniary effects of mental distress, like awards of nonpecuniary damages for pain and suffering, conflict with sound social insurance policy. Because damages for nonpecuniary harms cannot alleviate untreatable mental distress, risk-based claims for such damages decrease the welfare of potential plaintiffs by taking money from them in their healthy state—through, for example, wage reductions and increased prices resulting from defendants passing through the costs of higher liability insurance—and providing them with damages that have lower marginal utility in their unhealthy state.[36] The adverse effects of mental-distress damages are most apparent when the law makes tort insurance compulsory. Compulsory insurance arises when plaintiffs cannot contract out of some or all of the defendant's liability obligations, and, as a consequence, the defendant passes through the costs of its liability insurance or reserves in product prices and wage reductions.[37] This cost pass-through is the pervasive fact underlying tort liability dealing with business risks. That most consumers of insurance would rationally reject coverage for mental distress is confirmed by the fact that such coverage is virtually nowhere to be found on the private insurance market or in any state or federal program for workers' compensation or social insurance.[38] This evidence indicates that compulsory

[36] The general consensus is that individuals operating according to rational-choice incentives regarding the allocation of money between healthy and unhealthy states would maximize expected utility, and thus—assuming an invariant rate of diminishing marginal utility of wealth in both states—would not buy insurance coverage against nonpecuniary loss. See Shavell, supra note 21, at 228-35, 245-54 (noting that insurance coverage is intended mainly to remedy pecuniary needs created by losses, not to compensate for disutility due to losses); Kaplow, supra note 3, at 321 n.34 (stating that "[i]f injuries are nonpecuniary, optimal compensation need not equal actual loss"); see also Seffert v. Los Angeles Transit Lines, 364 P.2d 337, 345 (Cal. 1961) (Traynor, J., dissenting) ("[Pain-and-suffering] damages originated under primitive law as a means of punishing wrongdoers and assuaging the feelings of those who had been wronged. They become increasingly anomalous as emphasis shifts in a mechanized society from ad hoc punishment to orderly distribution of losses through insurance and the price of goods."). But see Steven P. Croley & Jon D. Hanson, The Nonpecuniary Costs of Accidents: Pain-and-Suffering Damages in Tort Law, 108 Harv. L. Rev. 1787, 1791 (1995) (challenging "now-dominant view" by presenting evidence concluding that consumer preferences "do demand [pain-and-suffering] insurance").

[37] See Patricia M. Danzon, Tort Reform and the Role of Government in Private Insurance Markets, 13 J. Legal Stud. 517, 517 (1984) (noting that tort system may be viewed as system of compulsory insurance).

[38] See id. at 524 (noting that accidental death and dismemberment insurance is unique in offering payments that do not pay medical expenses or replace lost wages and that less than one percent of contributions to health benefits is spent on accidental death and dismemberment insurance); W. Kip Viscusi & William N. Evans, Utility Functions That De-

tort insurance supplies unwanted coverage for nonpecuniary losses, and that plaintiffs would be worse off even if risk-based claims for mental distress were merely a default rule that could be waived at some cost by express contract.[39]

In addition to objections generally applicable to tort liability, risk-based claims are subject to specific criticisms on insurance grounds. From a purely social-insurance perspective, plaintiffs are better off by forgoing (disclaiming) risk-based insurance-fund claims and instead relying on the tort insurance provided by claims for the accrued ultimate injury and loss. While the two claims entail identical litigation costs to establish liability—assuming they are prosecuted as separate actions—the former claim[40] supplies only the insurance pre-

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pend on Health Status: Estimates and Economic Implications, 80 Am. Econ. Rev. 353, 371 (1990) (analyzing state dependent variations with individual health status and concluding that with respect to workers' compensation, less than full insurance of income losses is optimal because marginal utility of income is lower in the ill-health state). Some suggest that these findings err first, in disregarding evidence of nonpecuniary loss insurance in the private market, such as that of parents apparently buying and naming themselves as beneficiaries of life insurance on their children, and second, in neglecting defects in the insurance market, primarily that adverse selection from the inability of insurers ex ante to distinguish and set higher premiums for those who are likely to experience the greatest pain and suffering in the event of a given type of harm. See Croley & Hanson, supra note 36, at 1789 n.11 (noting that there are differences in "species of non-pecuniary losses," and that, nevertheless, most commentators treat them collectively). But any of the supposed evidence of nonpecuniary loss insurance is generally better explained by the greater likelihood of gullible purchasers and deceptive purveyors of insurance, and possibly the need to cover burial expenses, and, in some contexts, loss of prospective labor and other services rendered by children to their parents and family. Indeed, Croley and Hanson overlook trillions of dollars in private and government-funded pensions, annuities, and other deferred-compensation plans for covering living and health-care expenses in retirement and old age, which do not provide a penny in nonpecuniary loss benefits. Nor is adverse selection a plausible explanation of the lack of nonpecuniary loss insurance on the private market. As long as insureds are willing to pay the premium price, private insurance carriers will cover any type and amount of loss (barring moral-hazard problems of "double indemnity" types of coverage). There is no adverse-selection problem where the insured specifies the desired amount of coverage (the reason and label being irrelevant), and the insurer can predict the event triggering payment of benefits (i.e., injury in an automobile accident) to charge the actuarially appropriate premium. If insureds generally desired nonpecuniary loss coverage, the market would surely provide it in any amount individual consumers demanded, provided that they could pay the premium price.

[39] If the reduction of bargaining costs is a function of contract default rules—that is, rules specifying terms that apply unless the parties expressly provide otherwise—then establishing high-cost tort insurance as the default rule can only make most people worse off. The great majority of tort "insureds," who must pay the high premium costs of tort insurance, would rationally bargain out of it in favor of cheaper first-party insurance, but they could effectuate their preferences only by paying a tax equal to the unnecessary bargaining costs. On the efficient setting of default rules, see Ian Ayres & Robert Gertner, Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules, 99 Yale L.J. 87, 91 (1989) (providing theory regarding how courts and legislatures should set default rules).

[40] See supra Part I.B.1.

mium. Even in the exceptional case in which damages are not totally consumed by litigation costs, it is doubtful that the plaintiff could afford to pay for any particularization of the premium or the insurance coverage.

Risk-based claims for mitigation and mental distress are problematic because they fail to further the insurance objective of loss-spreading: every member of the exposed population suffers (or has an incentive to claim) risk-based damages. Essentially, where the risk itself is a virtual certainty for every insured—as is true under the regime of risk-based tort claims—then everyone in the risk pool becomes a self-insurer, whose contributions, as accumulated by the defendant through higher prices and lower wages, amount merely to a state-mandated savings account. Instead of spreading a concentrated loss over a large group of those at risk of suffering the loss, each plaintiff pays the full cost of compensating the loss—plus the defendant's costs of litigation—in higher product prices and lower wages. Because no loss-spreading occurs, the money simply "flows in a circle" from the plaintiff-insured to the defendant and back to the plaintiff-insured; when the plaintiff-insureds receive their money back from the tort system, however, it has been substantially reduced by their attorneys' contingency fees and by other litigation costs.[41]

2. *Wealth Redistribution*

Many commentators and courts rationalize tort liability, especially strict liability,[42] for injuries resulting from business activities on the ground that such liability redistributes wealth from "rich" or "deep-pocket" businesses to workers, consumers, and other classes of low-income and poor persons.[43] To the extent that this rationalization

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[41] See Willett v. Baxter Int'l, Inc., 929 F.2d 1094, 1100 n.20 (5th Cir. 1991) ("Because no loss-spreading occurs, the money flows in a circle from each patient (in the form of a higher price) to the company back to the same patient (in the form of a fear recovery), with a substantial portion of the higher price skimmed off for attorneys' fees."). See generally Calabresi, supra note 10, at 48-49 (suggesting that goals other than loss spreading are present when "[g]roups are divided into risk categories," and when "[p]eople are generally invited to spread their losses only among those who are thought to be roughly as accident prone as they").

[42] Strict liability is liability for nonnegligently inflicted injury, qualified generally by the causal connection requirement, and very often by a foreseeability condition. References to the negligence rule relate to the standard that absolves a defendant from liability if, and only if, the utility of the defendant's conduct exceeded the costs, *and* the defendant employed the most cost-effective precautions on the margin to avoid causing injury.

[43] Courts usually express the idea in terms of shifting the burden of loss from the innocent victim to a producer or other business defendant who, if also innocent, nonetheless "reaps the benefits of the various products our economy manufactures." Beshada v. Johns-Manville Prods. Corp., 447 A.2d 539, 549 (N.J. 1982); see also Brooks v. Beech Aircraft Corp., 902 P.2d 54, 58 (N.M. 1995) (concluding that strict liability serves fairness interest by

holds for claims of accrued ultimate harm and loss, it might supply a justification as well for risk-based claims. But, in reality, the notion that tort liability can serve as a sensible, systematic method of wealth redistribution is highly dubious.

Tort liability achieves wealth redistribution to the extent that it increases economic efficiency, enabling firms to pass along gains and savings through lower prices and higher wages or the state to convert those gains and savings into higher welfare payments or tax reductions and transfers. Tort liability, moreover, redistributes wealth when it operates paternalistically to supply benefits that plaintiffs mistakenly or irrationally undervalue. Serious doubts exist as to whether courts possess sufficient expertise and political authority to pursue these means of wealth redistribution.[44]

In any event, the principal argument for using tort liability to redistribute wealth rests not on economic efficiency or paternalism. Rather, the argument is that tort law should redistribute through inefficient rules, such as those authorizing excessive damage awards.[45]

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placing cost of unreasonable risk of harm with possibly innocent manufacturer); Allison v. Merck & Co., 878 P.2d 948, 954 (Nev. 1994) (prohibiting defendants from "profit[ing] with impunity" from products somehow certified as not being unreasonably dangerous). Commentators are more explicit about the role of liability as an instrument of redistribution. See Anthony T. Kronman, Paternalism and the Law of Contracts, 92 Yale L.J. 763, 772 (1983) (speaking of warranty of habitability); see also Jennifer H. Arlen, Should Defendants' Wealth Matter?, 21 J. Legal Stud. 413, 423 (1992) (concluding that individual wealth is factor in generating one's optimal level of care); Duncan Kennedy, Distributive and Paternalist Motives in Contract and Tort Law, with Special Reference to Compulsory Terms and Unequal Bargaining Power, 41 Md. L. Rev. 563, 563 (1982) (concluding that "distributive and paternalist motives play a central role in explaining the rules of the contract and tort systems with respect to agreements"); Stephen R. Perry, The Moral Foundations of Tort Law, 77 Iowa L. Rev. 449, 467 (1992) (discussing distributive argument for tort laws). Indeed, the modern history of tort law is seen as a "struggle" between the relatively limited liability of negligence and the redistributive power of strict liability. See Morton J. Horwitz, The Transformation of American Law: 1870-1960, at 13, 60-62 (1992) (describing challenge to objectivity of causation); see also Warren Seavey, Negligence—Subjective or Objective?, 41 Harv. L. Rev. 1, 3 (1927) (taking note of debate regarding whether negligence is subjective or objective and whether it depends on fault). But see David Rosenberg, The Hidden Holmes: His Theory of Torts in History 140-45 (1995) (reexamining history of tort law and concluding that gap between external standards of negligence and strict liability was much smaller than has been previously thought, but that in any event, strict liability had potential to produce regressive distributional effect for workers and consumers).

[44] See Louis Kaplow & Steven Shavell, Why the Legal System is Less Efficient Than the Income Tax in Redistributing Income, 23 J. Legal Stud. 667, 674-75 (1994).

[45] See id. at 674 & n.10 (noting that redistribution is not goal in contracting "because prices generally adjust to reflect . . . expected cost of legal rules," though incidental redistribution may occur). The notion of redistribution through inefficient tort liability is also illustrated by imposing strict liability for product risks which consumers can more cheaply control than can manufacturers, such as damage from normal wear and tear, or by mandat-

But, as a practical matter, tort liability cannot effectively achieve redistribution by economically inefficient means (assuming that the preferences of workers, consumers, and other intended beneficiary classes coincide with their best interests) when the costs of tort-supplied compensation exceed the benefits. When the inefficient tort claim, risk-based or otherwise, arises from a preexisting ("ex ante") product, service, employment, or other contractual relationship between the defendant and plaintiffs (as is true of most business-related accidents), the market will preclude or undo the attempted redistribution by corresponding ex ante adjustments in product quality, prices, wages, and other conditions of employment, as well as other benefits of the bargain.[46]

Indeed, the market prevents redistribution by inefficient means even when the full cost of inefficient tort compensation cannot be passed through by contract to plaintiffs. At the margin, many consumers will be priced out of the market for the good or service in question and prospective employees will be denied work.[47] Those willing to pay the higher prices and accept the lower wages because they lack better alternatives still suffer a decrease in net benefits from the transaction.[48] As a result, the market adjustments to unwind the inefficient rule entail transaction costs that redound to the disproportionate disadvantage of the less well off, who supposedly were the objects of this distributional solicitude.[49]

Furthermore, tort liability cannot effectuate redistribution by inefficient means even in the absence of a preexisting contractual relationship between the defendant and plaintiffs. Even when it is not possible or practical for a defendant to counteract the inefficiency by

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ing safety precautions in the workplace when the cost of the precaution far exceeds the marginal reduction in risk.

[46] See Lucian A. Bebchuk, The Pursuit of a Bigger Pie: Can Everyone Expect a Bigger Slice?, 8 Hofstra L. Rev. 671, 707 (1980) (arguing that redistribution of costs may exceed gains); Richard Craswell, Passing on the Costs of Legal Rules: Efficiency and Distribution in Buyer-Seller Relationships, 43 Stan. L. Rev. 361, 365-77, 385-97 (1991) (examining effects of shifting costs of legal rules between buyers and sellers); Kaplow & Shavell, supra note 44, at 674 & n.10 (arguing that contracting results in price adjustment that usually "reflect[s] the expected cost of legal rules").

[47] See Craswell, supra note 46, at 373-76 (describing phenomenon of decreasing sales to marginal consumers as prices rise).

[48] See id. at 369-70 ("[C]onsumers will end up worse off as a result of the [inefficient] warranty, even if sellers cannot pass on all of their costs . . . since [these consumers] value the addition of the warranty by less than the price increase, [they] must end up with less satisfaction than if they were buying the product at the old price without the warranty.").

[49] Market adjustments, as Holmes observed, make the "public pay[ ] the damages," Southern Pac. Co. v. Darnell-Taenzer Lumber Co., 245 U.S. 531, 534 (1918), or "make the business impossible and thus injure those whom [we] might wish to help." Arizona Employers' Liab. Cases, 250 U.S. 400, 434 (1919) (Holmes, J., concurring).

contract, plaintiffs will still bear the costs. The market will prevent any distributional windfall whenever the distributionally favored class overlaps the distributionally disfavored class.[50] This barrier to redistribution arises generally when a class of favored third parties overlaps a class of disfavored consumers or workers who bear the inefficient cost, or when the beneficiary plaintiffs have had no dealings with the defendant but buy from a similar firm that is subject to the same threat of inefficient liability.[51]

Accordingly, attempts to redistribute wealth through inefficient tort compensation are not merely futile but are likely to generate counterproductive distributional effects. The adverse distributional effect of price increases and wage reductions normally falls most heavily on the least well-off subclasses of consumers and workers—the very groups that are the prime targets of distributional beneficence.[52] Indeed, a further distributionally regressive effect results in many cases in which the plaintiff purchasers of a given consumer good occupy differing distributional positions. While the plaintiffs pay the same price for the good, and therefore the same implicit premium for the defendant's insurance or reserves against liability, tort compensates differentially according to the varying distributional positions of the plaintiffs (for example, the replacement of lost income or income-earning potential). Consequently, tort compels the distributionally less well off to subsidize the distributionally well off.[53]

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[50] To the extent that tort liability imposes inefficient safety rules (substantive or procedural) to govern workplaces, for example, the purported distributive gain for workers will be nullified not only by reductions in wages and employment levels, but also by higher prices charged to consumers, including the "benefitted" workers, and transaction costs required to make the wage and price adjustments.

[51] Third parties who are neighbors of a polluting industrial plant, for example, receive no distributional gain from an inefficient liability rule if they work at or buy products from another plant subject to the same inefficient rule on behalf of its neighbors. In effect, distributional gains are wiped out because the neighbors of the respective plants pay the costs of inefficient rules through higher prices and reduced wages to provide distributional largess to each other. If the inefficient rule is generalized to all factories of a similar good, say shoes, then *A* who resides near Firm 1 and buys shoes from Firm 2 can sue and recover inefficient pollution damages from Firm 1, but *B*'s similar pollution suit against Firm 2 nullifies *A*'s distributional advantage by raising the price charged by Firm 2 to *A* for shoes. Of course, some high-income consumers who are not neighbors of any industrial plant will also be charged increased product prices to pay for the inefficient liability rule. But this charge will tend to reduce demand for the product by these consumers and consequently diminish employment opportunities for the workers. High-income consumers will also seek higher returns on investment or engage in leisure and other less productive activity.

[52] Like regressive taxes, the average rate of price increases or wage reductions (cost of inefficient tort rules divided by income) tends to rise with lower incomes.

[53] See Rosenberg, Causal Connection, supra note 3, at 918-19 (stating that differential benefits offered by insurance packages in "essence redistribute wealth from victims with below-average incomes . . . to victims with above-average incomes").

3. *Corrective Justice*

Corrective justice aims to restore the preaccident distributional balance between the specific parties that was disturbed by the defendant's wrongful interference with the plaintiff's rightful zone of security and freedom.[54] Essential to corrective justice is a normative judgment regarding the specific harm-causing act by the defendant and the resulting loss suffered by the plaintiff.[55]

In vogue today, theories of corrective justice posit a variety of normative tests for liability. These include the recent exposition of a formalistic set of Kantian precepts derived deductively from an abstract conception of free will and inductively from the purported bilateral structure of tort cases—precepts that absolutely preclude risk-based claims.[56] Abstruse Kantian notions of free will aside, there is little reason why the harmful consequences of otherwise wrongfully created risk should escape correction simply because not all of the possible injurious effects have occurred or will occur—especially since the plaintiffs rationally would contract or have contracted for such corrective compensation.[57] Nonetheless, corrective justice does not

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[54] See George P. Fletcher, Corrective Justice for Moderns, 106 Harv. L. Rev. 1658, 1667-68 (1993) (book review) (explaining that Aristotle's conception of corrective justice redressed distributional imbalance resulting from defendant's wrongful act, which necessarily increases defendant's distributional position proportionately if not absolutely, relative to that of plaintiff).

[55] This idea contrasts with tort law's distributive objective, described supra text accompanying notes 42-53, which applies a social criterion of fair wealth equilibrium independent of any normative judgment regarding individual desert. See Ernest J. Weinrib, The Idea of Private Law 61-63 (1995) (distinguishing corrective from distributive justice).

[56] See Weinrib, supra note 55, at 157 ("[R]isk of bodily injury decisively differs from bodily injury itself: a human being has an immediate right in his or her body because it houses the will and is the organ of its purposes."). Reading Weinrib's conclusory account, one wonders whether Kant considered the nature of individual free will when its bodily housing is confined in a straitjacket of terrifying risk, and if not, whether such a limit on understanding reveals Kant's theories, like those of Newton, to be incomplete guides for modern thought. For similar criticisms of Weinrib's reliance on Kantian conceptions to reject risk-based liability, see Glen O. Robinson, Risk, Causation, and Harm, in Liability and Responsibility: Essays in Law and Morals 317, 336-41 (R.G. Frey & Christopher W. Morris eds., 1991). More generally, Weinrib's theory suffers from the well-known flaws of formalism: selective regard for the facts, including the myriad collective (non-bipolar) features of the tort system and the rational impossibility of deriving "truth" by inductive reasoning. Holmes pointed out the defects in such formalistic theories of law. See Rosenberg, supra note 43, at 13-41 (detailing Holmes's attack on legal formalism, which drew upon philosophy and methodology of modern empirical science as expounded by Hume, Mill, and Darwin). Recent efforts to avoid these flaws of formalism have thus far produced corrective justice theories lacking coherence in both internal analytical structure and normative prescriptions for real-world adjudication. See, e.g., Jules L. Coleman, Risks and Wrongs 373-85 (1992).

[57] See Christopher H. Schroeder, Corrective Justice and Liability for Increasing Risks, 37 UCLA L. Rev. 439, 454-60 (1990) (describing how utilitarianism and Kantianism would

add any reason beyond those supplied by the insurance and distributional rationales for enforcing risk-based claims.

No theory of corrective justice plausibly reconciles the obvious conflict between the breach of rights that triggers tort liability and payments of mere monetary compensation—usually by corporations, not individuals—that comprise the dominant mode of redress in the tort system.[58] Monetary damages may replace lost income and other economic assets and may engender a sense of vindication and solace, but neither in principle nor in practice is money a close substitute for the right not to suffer loss in the first place, either for the once-existing or the never-realized (counterfactual) preaccident distributional balance of entitlements between the specific parties.[59] Indeed, in reality, the entitlements enforced by corrective justice simply reduce to a form of distributional insurance generally provided by tort. Given the pervasiveness of market relationships, plaintiffs pay the price of their own redress—a very expensive type of insurance. Moreover, it would be an exceedingly strange notion of entitlements to free will that validates state coercion of plaintiffs to accept distributionally regressive liability for nonpecuniary mental distress damages or for other types of economically inefficient compensation. In sum, then, conventional compensation rationales fail to support risk-based claims—for reasons not only specific to such claims but also applicable generally to tort liability within the market context in which defendants pay monetary damages from liability insurance and reserves paid for by plaintiffs.

B. The Deterrence Function of Risk-Based Claims

The threat of tort liability operates to inhibit risk taking. Given surrounding market conditions, the deterrence aim of tort liability seeks to induce potential business defendants to limit their risk taking to economically efficient levels not only for purposes of maximizing the aggregate social welfare, but also for purposes of avoiding distributionally regressive effects on the less well off in society. In short, tort liability, whether imposed under a negligence or strict-liability standard, achieves such "optimal deterrence" by holding defendants responsible for all of the loss causally attributable to their tortious

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mandate relaxing tort's causation requirement, which currently results in inconsistent outcomes for actors who have made identical choices).

[58] See 1 American Law Inst., supra note 5, at 24-25 (noting that the fact that actor who was at fault usually does not pay directly for victim's injury undermines corrective justice rationale).

[59] For elaboration of this point, see Rosenberg, Causal Connection, supra note 3, at 877-79 (articulating relationship between corrective justice and rights-based deterrence).

conduct.[60] Risk-based claims find justification as a deterrence measure to the extent that the threat of liability for accrued harm allows defendants to escape responsibility for losses from risk bearing. Yet, the deterrence role of the three types of risk-based claims proves more problematic and contingent than is commonly understood.

1. *Insurance Fund*

In the conventional process of separate actions, risk-based insurance funds add no general deterrence value to the threat of liability. The threat of liability for accrued ultimate harm and loss suffices. The insurance-fund remedy represents the actuarially fair premium for an insurance policy that would supply tort-level damages for the ultimate harm and loss. Therefore, cumulatively, suits for such damages equal the total yielded by all risk-based claims for premiums (which is equal to the expected loss from the ultimate injury). All else equal, where the defendant tortiously will cause five people out of an exposed population of 100 each to suffer loss of $1000 in disease injuries, the threat of liability for $5000 damages for the five victims of accrued injury has equivalent deterrence potency in expected value terms as an insurance fund created by 100 risk-based claims for $50.

As a practical matter, however, risk-based insurance-fund claims may serve a special deterrence role in mass-exposure cases. Insurance-fund judgments likely would increase the deterrent effect of mass-exposure cases by preventing firms from using latency periods to become judgment-proof or otherwise evade the bulk of the claims.[61] Similarly, the possibility of insurance-fund judgments addresses a standard agency problem exacerbated in these cases by the long delay and latency periods between the tortious act and the advent of claims for accrued ultimate injury.[62] By hastening the imposition of liability, insurance-fund judgments reduce any inclination on the part of a firm's management to underestimate the impact of remote liability for mass-exposure cases on their careers and fortunes.

2. *Mitigation*

Risk-based claims for mitigation, in general, are unnecessary for deterrence purposes, that is, for inducing defendants to mitigate dam-

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[60] See Shavell, supra note 21, at 105-09 (discussing manner in which scope of liability rule, combined with proof of causation, affects a party's resulting level of care).

[61] See Rosenberg, Causal Connection, supra note 3, at 921-22.

[62] See generally Michael C. Jensen & William H. Meckling, Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure, 3 J. Fin. Econ. 305, 305-06 (1976) (integrating theories of "property rights, . . . agency, and . . . finance to develop theory of ownership structure for the firm").

ages. The threat of liability for accrued ultimate harm generally creates optimal incentives for defendants to make reasonable investments in medical monitoring, clean-up, and other actions designed to reduce exposure to liability for accrued ultimate harm.[63]

Risk-based claims for mitigation may be useful in certain cases, however, where counterincentives distort defendant motives to take mitigatory steps. For example, mitigation might require actions that attract what the firm would regard as unwelcome public attention. The firm might legitimately fear that the public will irrationally overestimate the risk, with the result that the firm would be subjected to overbearing investigation and regulation, unjustified disparagement, and a flood of harassing law suits.[64] Then again, the firm might also respond to inappropriate fears that public attention will blow a cover-up and alert regulators and potential plaintiffs to a real problem. Mitigation claims would be appropriate in either context (assuming control over regulatory grandstanding in the former). Although the courts might establish a rebuttable presumption for or against the claims depending on whether the firm was operating under regulatory scrutiny and on other factors regarding its receptivity to mitigation incentives, no unambiguous warrant generally exists for such claims.

There is one class of cases in which risk-based mitigation claims would seem to have some systematic utility. These cases, governed by the negligence rule, arise when the defendant expects to defeat a negligence charge of unreasonably designing a product, performing a service, or engaging in some other risky action. Under these circumstances, the defendant lacks incentives to mitigate damages from the reasonable risk of its activities. Nevertheless, in some cases mitigation steps would be appropriate. For example, the defendant may have acted reasonably in designing a product that conformed to the state-of-the-art at the time of marketing and sale, but subsequent research discloses a new risk, which could be reduced by postmarketing and sale warnings or recalls. Because the defendant is not negli-

[63] Firms seeking to maximize expected value and hence minimize expected liability have optimal incentives to mitigate prospective damages. Suppose that an asbestos manufacturer confronts the expected liability for a 10% chance of causing $10,000 in personal injury from exposure to asbestos in a public building. Instead of bearing expected liability of $1000, the firm would rationally prefer a cost-effective expenditure in mitigation, say $350 for a 50% reduction of the risk and corresponding expected liability of $500 by removing frayed asbestos from the building. Of course, courts should recognize a risk-based cause of action in the nature of recoupment where plaintiffs or third-party insurers have borne the costs of mitigation.

[64] See Schuck, supra note 12, at 942 & n.6 (discussing political pressures on Dow Corning to settle despite lack of epidemiological evidence associating silicone-gel leakage with alleged diseases).

gent, only a separate risk-based claim for failure to warn or recall would provide the necessary incentives to mitigate.[65]

3. *Mental Distress*

Although risk-based claims for mere mental distress lack substantial justification on grounds of compensation, such claims, like others for nonpecuniary harms, may serve deterrence objectives. If all members of the exposed population contracted the ultimate harm, then the deterrence function could be fully accomplished by suits for such harm. The plaintiff would simply include a demand for prejudgment pain and suffering, including anxiety over the prospect of contracting the ultimate harm.[66] But in most mass-exposure cases, only a small fraction of the at-risk population will contract the ultimate harm. Optimal deterrence thus requires risk-based mental distress claims to hold the defendant responsible for the total amount of loss attributable to its tortious conduct.[67] The foregoing analysis demonstrates that, of the two generally accepted rationales for tort liability—compensation and deterrence—only deterrence unambiguously supports use of risk-based claims for mass-exposure cases, regardless of the individualized or collectivized mode of adjudication.

III
FUNCTIONAL ANALYSIS OF COLLECTIVIZING RISK-BASED CLAIMS

Collectivization of risk-based claims enhances their overall functional effectiveness, including the pursuit of individual justice as self-determination. This result regarding individual justice holds even for applications of compulsory aggregation and averaging that deny all

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[65] Courts fill this gap in optimal incentives for mitigation, for example, by requiring firms to make reasonable efforts in providing consumers with postsale warnings of newly discovered risks. See, e.g., Andrulonis v. United States, 924 F.2d 1210, 1221 (2d Cir. 1991) (finding that government had duty to warn bacteriologist about dangers associated with scientific research, even though contamination occurred after manufacture and delivery of concentrated rabies solution created by government).

[66] See Restatement (Second) of Torts § 910 (1977) (allowing tort damages for "all harm," pecuniary and nonpecuniary, "past, present, and prospective").

[67] Alternatively, optimal deterrence could be achieved by raising damages in all accrued injury cases to account for the unrecovered mental distress loss. Risk-based claims serve compensation as well as deterrence functions in defective product cases by remedying diminution of the product's market value. See, e.g., In re General Motors Corp. Pick-up Truck Fuel Tank Prods. Liab. Litig., 55 F.3d 768, 806-10 (3d Cir. 1995) (holding that proposed class settlement in products-liability action against truck manufacturer based upon alleged defect in fuel tank was inadequate where class members were to receive $1000 gift certificates for purchase of new truck from manufacturer because lower court failed to sufficiently scrutinize actual value of certificates).

particularizing opportunities and elements, regardless of the plaintiff's desire and willingness to pay at trial for more personalized treatment.

Collectivization runs no danger of conflict with the notion of individual justice as self-determination in classes of cases where the litigation cost savings from collectivization allow otherwise unmarketable mass-exposure claims access to the tort system.[68] The simple point is that some payment, however greatly averaged, is better than none at all. Similarly, all else being equal, no material question of individual justice arises when the distribution of surplus cost savings makes all claimants better off than they would have been in the separate action process, or provides additional compensation for the most severely injured. Nor does individual justice preclude equitable rationing and distribution where the defendant's assets are insufficient to satisfy all claims. The following discussion outlines less obvious though broad classes of cases in which collectivization poses no threat to individual justice.

A. Deterrence

Collectivization of risk-based claims enhances their deterrence objectives in two related respects. First, collectivization efficiently transfers resources from redundant and unnecessary case-by-case litigation to determining the merits of liability. Given the high cost and complexity of scientific and other sophisticated issues of liability in mass-exposure cases, devoting greater resources to these issues will increase the accuracy and consistency of their determination, as well as increase access by plaintiffs to the tort system. Aggregation in particular overcomes the transaction-cost burdens of the conventional process that discourage plaintiff attorneys from optimally investing in the merits of mass-exposure claims.[69] By spreading the costs over all claims for research, discovery, preparation, and trial of the common legal and factual questions, the plaintiff-class attorney achieves economies of scale equivalent to those necessarily made available by de facto collective process to defendant firms.[70]

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[68] A principal purpose of class action procedure is to enable the prosecution of small claims "that for economic reasons might not be brought otherwise." Deposit Guar. Nat'l Bank v. Roper, 445 U.S. 325, 338 (1980). See generally Macey & Miller, supra note 28, at 8 (discussing the free-rider and other collective action problems hampering litigation arising from business risks that involve numerous, but small, claims).

[69] See Richard A. Posner, Economic Analysis of Law 536-37 (3d ed. 1986) (noting that class action enables plaintiff-class attorneys to achieve economies of scale in litigation).

[70] For discussion of the "natural" advantage of business defendants over individual mass-tort claimants, see Rosenberg, Causal Connection, supra note 3, at 902-05 (discussing how defendants benefit from economies of scale). To recognize that the system is skewed and that defendants take advantage of their dominant position by waging wars of attrition

This investment disparity that results from the conventional process is reproduced in settlements, including the bargain arranged through a class action certified only for settlement purposes. When the only alternative to settlement is conventional, case-by-case processing, plaintiffs' bargaining positions will be weaker (their settlement demands will reflect the high costs of individual litigation) than if they could threaten the defendant with the far lower costs of collective process. Therefore, in the absence of intensive, lengthy, and collaborative separate claim litigation, courts should approve classwide settlements only when they result from (or disapproval would result in) certification of the class action for trial.[71]

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against plaintiffs apparently is considered heresy bordering on seditious libel by courts bent on maintaining the myth of equality of litigation power in the traditional separate action process. See In re American Medical Sys., Inc., Nos. 95-3303/3327, 1996 WL 63417, at *16 & n.20 (6th Cir. Feb. 15, 1996) (issuing mandamus to decertify products-liability class action based on finding abuse of discretion (and seemingly designed to intimidate district court judge by character assassination), including the conclusion that district judge demonstrated bias in favor of class certification by reporting his experience that defendants "have more money, more manpower, more time, and everything," and plaintiffs are "beaten down [by defendants] because they [cannot] compete, and I am aware that the only way that plaintiffs can compete is by a class action").

To be sure, in many large-scale mass-tort cases today, a small number of well-financed firms, each operating through numerous franchisee-counsel and associated agents (e.g., unions, physicians, and other "claim-finders") sign-up and "represent" most of the claimants, sometimes reaching into the thousands or tens of thousands. See Coffee, supra note 1, at 1359, 1373-74. While these plaintiff attorneys achieve substantial economies of scale—albeit diminished by high organizational and agency costs—the lack of a class action devalues individual claims in settlement not only because of contingent fee percentages that often range from 33% to 40%, see Georgine v. Amchem Prods., Inc., 157 F.R.D. 246, 277 n.23, 285 (E.D. Pa. 1994) (citing range of contingency fees in asbestos litigation), vacated and remanded, Nos. 94-1925 et al., 1996 U.S. App. LEXIS 11191 (3d Cir. May 10, 1996), but also because the plaintiff's demand reflects the residual costs of litigating common questions by separate action. See Rosenberg, Causal Connection, supra note 3, at 913 & n.237 (stating that separate actions are likely to incur higher costs for plaintiffs than class actions, which neutralize defendants' cost advantages). Because of the inefficiencies of separate actions, their verdicts and settlements may not provide a reliable gauge of the true value that the mass-exposure claims would possess as aggregated by a class action. See Rosenberg, End Games, supra note 3, at 707-11 (examining defendants' advantages when claims are collectivized). But cf. In re Rhone-Poulenc Rorer, Inc., 51 F.3d 1293, 1300 (7th Cir.) (overlooking differential investment incentives, the court erroneously undervalued a mass-tort class action by relying on prior separate action verdicts), cert. denied, 116 S. Ct. 184 (1995).

[71] Trial class actions enhance the negotiating leverage of class counsel by substantially lowering the costs of going to trial rather than settling. Defendants lose the power to threaten the plaintiff attorney with return to the status quo of costly separate actions. Cf. Steven Shavell, Suit, Settlement and Trial: A Theoretical Analysis Under Alternative Methods for the Allocation of Legal Costs, 11 J. Legal Stud. 55, 63 (1982) (explaining standard model of negotiations to settle litigation in which plaintiffs demand payment in amount of expected value of judgment from trial minus litigation costs of obtaining that judgment). Of course, defendants confront the prospect of separate actions, but, as noted above, defendants have distinct advantages of a de facto class action and its economies of

Second, collectivization, especially aggregation through class actions, remedies the plaintiff-attorney market's treatment of a claim's deterrence value as a public good and resulting failure to produce optimal deterrence effects.[72] The economies of scale afforded by class actions induce plaintiff attorneys to prosecute mass-exposure claims, which would otherwise be unmarketable as separate actions because of their high litigation costs, despite their relatively high deterrence value. Indeed, the principal utility of risk-based claims for insurance-fund judgments is that they are indispensable to class actions for mass-exposure cases. Collectivization, however, is justified not merely by enhancing the deterrence function of tort liability through administrative efficiency. As demonstrated below, the deterrence function itself warrants aggregation and averaging in the determination not only of liability, but also of damages.

1. *Collectivization of Liability Issues*

The main point is that the deterrence objectives of risk-based claims are fully consistent with collectivization. Optimal deterrence is achieved by threatening the defendant with the aggregate, average loss (pecuniary and nonpecuniary) attributable to its tortious con-

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scale. While trial class certification exerts pressures on risk-averse class counsel to make a "sweetheart deal," this incentive is counterbalanced by defendant risk aversion to class action trial, see *Rhone-Poulenc Rorer*, 51 F.3d at 1298-99 (describing example of pressure to settle), as well as close monitoring by courts, class members, nonsettling plaintiff attorneys and defendant firms, concerned consumer groups and government agencies, and insurance subrogees. See David Rosenberg, Sweetheart Settlements of Class Actions 23-24 (unpublished manuscript presented at Harvard Law School Conference on the Economics of Litigation, Dec. 1995, on file with author). In a further step to reduce the risk aversion of both sides in settlement (without diminishing the rate and cost savings of settlement), courts could order multiple classwide trials of common questions and average the results. Id. at 28. This procedure replicates the normal process of settlement whereby most mass-tort claims are resolved on a pattern set by a relatively few trials. The difference, of course, is that the plaintiff attorney would enjoy economies of scale in litigation equivalent to the defendant's, and that the resulting judgments would more accurately reflect the true value of the claims. Averages based on multiple classwide trials might also be more accurate than the verdict in a single classwide trial. For discussion of the last point, see Bone, supra note 7, at 569-77 (comparing sampling of averages of verdicts to class actions); Rosenberg, supra note 12, at 368 (discussing averaging process); Saks & Blanck, supra note 30, at 851 (summarizing advantages of aggregated trials).

[72] See Rosenberg, Causal Connection, supra note 3, at 901 ("[B]ecause plaintiff attorneys are concerned exclusively with the expected return on their investment, they focus their attention only on the expected judgment of a claim and not at all on the claim's deterrence value."); Steven Shavell, The Social Versus the Private Incentive To Bring Suit in a Costly Legal System, 11 J. Legal Stud. 333, 339 (1982) ("[O]ne might view various social efforts to promote or subsidize suit (availability of class action, establishment of small claims courts) as social solutions to problems of otherwise insufficient private motives to bring suit.").

duct.[73] This assertion is true even in cases of sporadic accident, such as automobile collisions. For example, if the drivers possess average skills and habits and have no preaccident knowledge and control of their specific causal or negligent contributions to the accident risk, then, given this random distribution of accident risk, they would expect to be held liable, on average, 50% of the time, and would adjust their safety precautions accordingly. The deterrence goal could thus be achieved by a rule of extreme or undifferentiated averaging, generally assessing defendants 50% of the loss suffered by the plaintiffs; courts could even flip a coin to decide cases. The randomized nature of the risk that characterizes sporadic accidents explains why optimal deterrence is achieved by applying the 50% probability threshold of the conventional preponderance-of-the-evidence standard of proof.[74]

When the defendant anticipates and adjusts the degree and targets of risk, then risk-scaled or -correlated averaging is necessary. In such circumstances, it would be entirely consistent with deterrence objectives for assessment of the risk bearing upon the exposed population to be determined in the aggregate. In mass-exposure cases, for example, firms may know and have control over the ratio of background to toxic-related risk, allowing them to exploit the preponderance standard to dodge liability and free themselves from optimal incentives for reasonable curtailment of the toxic-related risk. In these circumstances, deterrence justifies statistically apportioning lia-

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[73] See Kaplow, supra note 3, at 313-14 (explaining that if actors only know average level of harm—as opposed to actual level—that they will cause, precisely determining the actual level of harm during litigation wastes resources because information learned later cannot improve earlier decision).

[74] See Rosenberg, Causal Connection, supra note 3, at 876 ("Assuming that causal probabilities are randomly distributed, each prospective defendant will calculate the odds of being held liable at fifty percent and will exercise care accordingly."). The conclusion holds regardless of the degree of chance as long as it is randomly distributed and uncontrollable by the parties. For example, if drivers generally know that rear-end collisions result from negligence by the rear-ending driver 70% of the time, and by the rear-ended driver 30% of the time, but cannot predict the source of negligence in a particular accident, then, all else equal, in a negligence regime—regardless of whether there exists a defense of contributory or comparative negligence—any driver whose car rear-ends another should bear 70% of the loss. This reasoning, implying that no effort should be made to determine the causal connection in any particular case, provides a deterrence explanation of the classic case of Summers v. Tice, 199 P.2d 1 (Cal. 1948). In *Summers*, two hunters negligently fired their guns in the direction of a third hunter, whose resulting wound could not be attributed by a preponderance of the evidence to either hunter. Id. at 3. Consistent with the court's description of the case, it may be assumed that each hunter had an equal probability of firing the shot that caused the wound, and that the condition of causal indeterminacy was uncorrelated to the behavior of the hunters. On these assumptions the court's decision to hold both hunters jointly and severally liable accomplished optimal deterrence. A coin flip also would have sufficed.

bility according to the defendant's relative causal contribution of tortious risk.[75]

2. *Collectivization of Damage Issues*

Collectivized determination and distribution of damages to serve deterrence objectives raises no question of individual justice. The only reason for paying deterrence-grounded damages to plaintiffs (and plaintiff attorneys) is to provide incentives for suits to enforce tort norms, essentially as a bounty for performing as private attorneys general.[76] The balance of such damages could be appropriated for any public purpose, including equitable distribution among plaintiff class members according to their relative income, severity of injury, and other need-related factors.

Individual justice concerns about collectivization largely dissolve in light of the fact that the justification for most of the damages awarded by risk-based claims derives from the deterrence function. The paradigmatic example is punitive damages, which serve the deterrence function by closing gaps in enforcement of tort claims.[77] There-

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[75] If, for example, the firm engages in an activity that it anticipates will increase the risk of a given type of cancer by two-thirds, then, in contrast to the 50% average appropriate for sporadic cases, courts would achieve optimal deterrence by entering a damage judgment against the defendant for two-thirds (or any other percentage increase the defendant's activity causes) of the aggregate loss from the incidence of cancers of the given type in the exposed population. See Rosenberg, Causal Connection, supra note 3, at 876-77 ("[I]n mass exposure cases [as opposed to sporadic accidents], the probability of escaping liability under the preponderance rule is neither insignificant nor difficult to calculate .... Mass exposure cases usually involve defendants with the power to manipulate the degree of excess risk attributable to their activities.").

[76] See Shavell, supra note 21, at 231-40 (describing divergence between size of award optimal for victim and size of award optimal for deterrence). Indeed, paying damages to plaintiffs only at or below the level of optimal market-based insurance dilutes defendant incentives to act reasonably, while paying damages above that level undercuts deterrence incentives for plaintiffs to act reasonably. See also Calabresi, supra note 10, at 29 (describing inconsistency between perfect deterrence system and perfect risk-spreading system).

[77] See E. Jeffrey Grube, Punitive Damages: A Misplaced Remedy, 66 S. Cal. L. Rev. 839, 850 (1993) (explaining that punitive damage awards achieve deterrence ends regardless of receipt by plaintiffs); see also Robert D. Cooter, Punitive Damages for Deterrence: When and How Much?, 40 Ala. L. Rev. 1143, 1148 (1989) ("[P]laintiffs should have to prove the fact and profitability of a gross shortfall from the legal standard in the face of compensatory damages before obtaining punitive damages from business defendants."); cf. Shavell, supra note 21, at 233-34 (discussing use of administrative fines to supplement tort damages). The fact that numerous claims for compensation are brought does not necessarily obviate the need for punitive damages if the number of claims is insufficient to produce optimal deterrence. But see Gary T. Schwartz, Mass Torts and Punitive Damages: A Comment, 39 Vill. L. Rev. 415, 420-21 (1994) (questioning reality of underenforcement problem in mass-tort cases). As Schwartz suggests, the deterrence gap may be more than offset by meritless claims. Id.; see also Schuck, supra note 12, at 961 & n.97 (arguing that large percentage—perhaps as high as 90%—of mass-tort claims are "junk").

fore, while the deterrence function clearly warrants punitive damages, the use of class actions to aggregate the compensatory damages of risk-based claims removes the possibility of a deterrence gap and thus obviates the need for punitive damages.

Similarly, deterrence provides the principal justification for risk-based mental distress claims and for prospective pain and suffering in risk-based insurance-fund claims.[78] As such, individualized justice creates no impediment to the most inclusive aggregation and generalized averaging of these damage claims. Also, to the extent that risk-based claims for mitigation have functional utility, it is in the realm of deterrence. Consequently, as elaborated below, imposing judgment on the defendant for the aggregate average damages attributable to the defendant's failure of mitigation poses no substantial problems for individual justice.

As noted previously, risk-based claims for insurance-fund judgments represent the expected value of verdicts or settlements for the ultimate accrued injury, and much of the pecuniary damages awarded for such injury serve deterrence rather than compensatory purposes.[79] Hence, with respect to these elements of risk-based claims (as incorporated in the risk-based insurance-fund judgment), collectivization presents no threat to the "make whole" conception of individual justice embraced by tort law, entitling plaintiffs to compensation for losses actually suffered (or threatened) because of the defendant's tortious act—in other words, for losses that would not have been incurred but for that act.[80]

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[78] This argument also holds for duplicative compensation allowed under the standard collateral source rule. The collateral source rule allows plaintiffs to collect damages for the total loss regardless of payments for all or part of that loss from first-party private or government insurance. Despite subrogation rights by insurers to reimbursement for their contributions, the plaintiff nevertheless may recover more damages than the total loss. The possibility of excess damage payments is rationalized by the need for optimal, undiluted deterrence effects on defendants. But see 2 American Law Inst., supra note 5, at 161-62 (recommending that plaintiff's tort recovery be reduced by amount of past or prospective payments from insurance).

[79] See supra Part II.B.

[80] I also refer to this notion as "just compensation for takings." The conception of just compensation employed here finds close analogs in a similar idea developed to rationalize compensation for the taking of property by government exercising the power of eminent domain. See Frank I. Michelman, Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law, 80 Harv. L. Rev. 1165, 1171-72 (1967) (arguing that case-by-case adjudication of takings cases has yielded "ethically unsatisfying" results and that "the only 'test' for compensability which is 'correct' . . . is the test of fairness"); William A. Fischel, Regulatory Takings: Law, Economics, and Politics §§ 4-4.13 (1995) (explaining Michelman's utilitarian approach to takings); Lawrence Blume & Daniel L. Rubinfeld, Compensation for Takings: An Economic Analysis, 72 Cal. L. Rev. 569, 571 (1984) (providing "an economic analysis of compensation as a form of insurance" and evaluating efficiency arguments for and against compensation). The relationship be-

In many, perhaps most, cases of negligence and strict liability by a business firm, the tortious act confers a net benefit on the plaintiff, at least measured ex ante by its expected value. For example, the use of strict liability often involves cases where consumer plaintiffs gain a net benefit despite the randomly distributed risk of buying a defectively manufactured unit of the product, or situations where a third-party neighbor or bystander incurs negative externalities from pollution by the defendant, but also receives greater positive externalities, such as increased employment opportunities and public services funded by a larger tax base.[81] In view of the relative cost advantages of first-party insurance, the application of strict liability despite the plaintiff's net benefit position in such cases would seem most plausibly explained by deterrence.

Even when the defendant's activity was negligent, the plaintiff will often incur a net benefit because defendants usually commit negligence not by producing an unreasonable product (defined as such because the costs of the product exceed its benefits) but rather by not taking all reasonable precautions at the margin to maximize the product's benefits over risks.[82] A prime illustration involves a life-saving product or service that in fact increases the plaintiff's life expectancy, but because of some negligent deficiency of design or manufacture, is less effective than it might reasonably have been. The plaintiff cannot assert that the product's deficiency was the but-for cause of death. Death would have occurred in any event; indeed, it probably would have occurred sooner, given the preexisting medical condition. Because the product made the plaintiff better off, and assuming the absence of a more effective alternative on the market, the plaintiff's only

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tween just compensation for "takings" in tort and property was first explained by Holmes. See Rosenberg, supra note 43, at 136-38. For a more general perspective on the notion of just compensation, see Louis Kaplow, An Economic Analysis of Legal Transitions, 99 Harv. L. Rev. 509, 511 (1986) ("Any divergence between proposed solutions and the current legal regime raises the question of how the gains and losses caused by the transition to the more desirable system should be addressed. In particular, the government chooses among such options as compensation, grandfathering, phase-ins, and simply providing no relief.").

[81] See Restatement (Second) of Torts § 520(f) & cmt. k (1977) (excluding from scope of abnormal dangers subject to strict liability those dangers which substantially enhance net utility of affected community, as measured by increased employment, tax revenues, and other public benefits).

[82] See Shavell, supra note 21, at 5 (distinguishing marginal reasonable care in managing activity from general utility-risk calculus for judging reasonable frequency with which to engage in activity). This distinction between acts dangerous in themselves and acts dangerous because they are done improperly is adopted in the Restatement (Second) of Torts § 297 (1977).

complaint is a collective one in the nature of regulation, creating credible incentives for the optimal manufacture and design of products.[83]

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[83] It is assumed, of course, that plaintiffs paid only for the product's actual net utility. Cf. Restatement (Second) of Torts § 920 (1977) (offsetting damages for tortious harm to extent that plaintiff benefits from defendant's act); Mohr v. Williams, 104 N.W. 12, 16 (Minn. 1905) (reducing damages for medical malpractice claim for lack of consent by amount of benefit that plaintiff received from operation).

One might hypothesize an agreement made behind a Rawlsian "veil of ignorance" obligating defendants not merely to make consumers better off but to maximize their net utility from a given product or service and to compensate plaintiffs for breach of that additional obligation. See generally John Rawls, A Theory of Justice 11-17 (1971) (explicating "veil of ignorance" device for removing personal interest from derivation of hypothetical social agreement or compact). For recent similar usage of this device, see, e.g., Croley & Hanson, supra note 36, at 1826 ("[T]he consumer deciding whether to purchase insurance is behind a thin Rawlsian veil of ignorance about which accidents might befall her."); Kaplow, supra note 80, at 571-72 & n.179 (arguing that logrolling, "in which votes are traded off on two issues, is generally preferable to direct relief to those who lose from a new policy," and suggesting that this argument can be interpreted from Rawlsian, original position perspective); Thomas M. Scanlon, Contractualism and Utilitarianism, in Utilitarianism and Beyond 103, 110, 119-28 (Amartya Sen & Bernard Williams eds., 1982) (interpreting Rawls's theory as starting point for contractualist characterization of moral principles as those "which no one could reasonably reject" given mutually disinterested individuals); Alan Schwartz, Proposals for Products Liability Reform: A Theoretical Synthesis, 97 Yale L.J. 353, 357-61 (1988) (applying Rawls's theory to products liability and concluding that "'rule choosers' ignorant of features of themselves or actual cases that would permit the choosers to advance their self interest at others' expense" would prefer utility maximization as "meta rule" for products-liability law); see also David Charny, Hypothetical Bargains: The Normative Structure of Contract Interpretation, 89 Mich. L. Rev. 1815, 1825 & n.43 (1991) (discussing problems of hypothetical agreement construct). A defendant who breached the hypothesized agreement by failing to take marginal reasonable care would owe compensation only to the extent of the plaintiff's loss of the average chance to avoid the marginal degree of harm. To illustrate, suppose that the plaintiff receives $1500 in net expected utility from a given product (in the absence of any injury), that the product also imposes a risk to the plaintiff of a 15% probability of suffering a $1000 injury, and that an additional $30 expenditure in safety testing would have reduced the probability to the optimal level of 10%. Because the marginal benefit from optimal risk reduction is 5%, in the event injury results, the plaintiff should recover only $20 ($50 (reduced risk) less $30 (cost of marginal care)), that is, the difference between $1370, the plaintiff's maximum net expected utility from paying for and receiving the benefits of full compliance with the negligence rule, and $1350, the actual net expected utility. On proportioning damages to the lost chance of avoiding harm, see Joseph H. King, Jr., Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences, 90 Yale L.J. 1353, 1354 (1981) (arguing that loss of chance of favorable outcome or of avoiding harm should be compensable and "should be valued appropriately, rather than treated as an all-or-nothing proposition"). For deterrence purposes, by contrast, the defendant would pay $1000 in the event that injury resulted from the 5% risk that could have been avoided by marginal reasonable care, meaning that the defendant internalizes, ex ante, $50 in expected liability as the cost of choosing not to take optimal care by making the $30 marginal expenditure. See Marcel Kahan, Causation and Incentives To Take Care Under the Negligence Rule, 18 J. Legal Stud. 427, 428-29 (1989) (stating that expected liability for negligence is limited to marginal risk that would have been avoided by taking reasonable care).

B. Insurance

The self-determination notion of individual justice warrants collectivization modeled on the principles and policies of effective first-party health, disability, and life insurance. As revealed by the overwhelming choices of consumers and taxpayers respectively in the commercial and electoral markets, the insurance model represents the preferred means of providing compensation for injury when the injured bear the costs of their own compensation.[84] Adherence to the insurance model seems all the more a moral imperative in view of the fact that tort insurance is coercively imposed by the state and generally cannot be contractually disavowed or modified by its putative beneficiaries.[85]

According to the insurance model of tort, the conversion of the value of risk-based claims for mental distress into tort-level insurance against pecuniary losses from the ultimate accrued injury reduces the losses arising from the risk aversion of plaintiffs and thereby increases their welfare.[86] As such, the insurance model fully justifies class action settlements that trade fear of cancer and other risk-based mental distress claims for corresponding increases in scheduled payments to compensate for the accrued ultimate injury. Those who bear long-term risk but are fortunate enough never to suffer the ultimate injury benefit *more* from the trade because the insurance against such injury makes them better off than payments of damages for their mental distress. They exchange a mental distress claim of no compensable value for insurance against pecuniary loss, covering the most severe injuries that plaintiffs most fear. Only a perverse notion of individual justice would oppose or impede a welfare transfer of the sort that class members would rationally desire.[87]

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[84] See Paul A. Samuelson, Consumption Theory in Terms of Revealed Preference, 15 Economica 242, 242 (1948) (explaining that behavior of individuals in marketplace reveals preferences between batches of goods).

[85] See Henningsen v. Bloomfield Motors, Inc., 161 A.2d 69, 97 (N.J. 1960) (precluding disclaimer of implied warranties of product fitness). The general prohibition against waivers or any other option to contract out of strict tort liability for product defects receives full endorsement in the proposed Restatement (Third) of Torts: Products Liability § 8 (Tentative Draft No. 1, 1994) ("Disclaimers and limitations of remedies by product sellers, waivers by product purchasers, and other similar contractual exculpations, oral or written, do not bar or reduce otherwise valid products liability claims for harms to persons.").

[86] On the role of insurance in stimulating productive activity by reducing the burdens on risk-averse parties of bearing large or catastrophic loss, see Shavell, supra note 21, at 206-07.

[87] To assign a separate representative for risk-based claimants with veto power over the settlement would simply motivate claimants to "hold-out" for payments from the defendant, which, if anticipated in the preaccident marketplace, would serve only to decrease their welfare for the sole benefit of their lawyers.

The insurance model also justifies creating damage schedule categories that disregard the particular circumstances of the individual claimant with respect to causal, liability, and other tort-related factors that have no rational bearing on the reduction of risk aversion through assurances of compensation for pecuniary losses. In other words, after establishing liability for the mass-exposure tort, courts should effectuate an insurance plan that members of the exposed population would have established by contract with the defendant before the accident occurred. Such an insurance plan would operate across broadly averaged harm categories, ignoring all random variables over which those exposed to the risk have no practical control. For example, take the case of toxic risk in a chemical plant in which the workers are randomly assigned to jobs of varying hazard and are subject to varying liability limitations, such as time bars, federal preemption, or the exclusivity provision of workers' compensation. Prior to any tortious risk exposure, in a relatively well-working market the defendant (like a commercial insurer) would offer to cover the risk for an average premium calculated on the average expected accrued injury loss.[88] Given the randomness of exposure to risk and liability limitations, risk-averse workers would not rationally want insurance compensation to reflect determinations of individually specific exposures and the resulting individualistic probabilities of causation or liability.[89] Indeed, in the absence of risk aversion and transaction costs, victims of mass-exposure torts would be indifferent in choosing between an averaging rule and an individualizing rule, and given the lower transaction costs of the former (in class actions), even risk-neutral victims would prefer the averaging rule.[90] Collectivization that produces in-

[88] In purchasing insurance to avoid bearing a concentrated loss of high magnitude, risk-averse individuals prefer receiving an average amount with certainty than taking a bet of equal expected value involving a substantial differential in outcomes. Thus, given risk aversion, an individual might prefer an unconditional promise of $500 in the event of accident to a promise dependent upon a random variable beyond the individual's (and defendant's) practical control—for example, the existence of a specific causal connection at some threshold level of probability—of recovering either $1000 or zero. See also Kaplow, supra note 3, at 332-33 & nn.62-64 (describing choices between averaging and relative particularization in types of insurance).

[89] See Shavell, supra note 21, at 243-45 (investigating "connection between the cause of a victim's loss and his coverage under an optimal insurance policy").

[90] Generally, transaction costs will determine the choice of risk-neutral class members regarding the rule for distributing an aggregate damage award, even when the choice is between an averaging rule that distributes the award on an equal pro rata basis and an individualizing rule that guarantees the average but provides higher recoveries to class members who happen to possess individualizing evidence.

An example is provided by the market-share rule of proportional liability for a generic product marketed by two or more manufacturers, of whom one or more may become judgment proof. If there were a randomly distributed chance of establishing specific causation,

surance funds and schedules of damages that provide relatively equal benefits for the same category of injury are thus fully consistent with a self-determination conception of individual justice.

The insurance model also explains why there is no cross-subsidy of wealth or welfare between plaintiffs when, despite paying equal premiums or possessing identical tort claims, a damage schedule particularizes by giving priority to the more severe injuries. Assuming that risk aversion increases with the severity of injury and that the level of severity is randomly distributed (and not knowable ex ante), plaintiffs would rationally agree to a corresponding skew in benefit protections.[91] Similarly, concerns about individual justice are not im-

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risk-averse consumers would, of course, prefer an averaging rule that conformed to the insurance model as against the standard, all-or-nothing rule that, depending on the fortuitous availability of a preponderance of evidence showing specific causation, awards the individual claimant 100% of the loss or nothing. But would victims of mass-exposure torts prefer the seemingly benevolent rule that guarantees the average but allows 100% recoveries to those who happen to possess evidence identifying the solvent manufacturer as the source of the harmful product? Cf. Hymowitz v. Eli Lilly & Co., 539 N.E.2d 1069, 1078 (N.Y. 1989) (adopting generalized market-share assessments rather than rule allowing proof of specific causation); see also Bone, supra note 7, at 564 (raising fairness questions about averaging that disregards the specific causation basis of high-value claims). The rational choice theory of individual justice indicates that the answer is "no."

Suppose that 100 consumers of a given generic product know ex ante that they each bear a tortious risk of suffering a $1000 loss, that one of two manufacturers who have equal market shares will, with equal probability, become judgment proof, and again, that there is a 10% chance (randomly distributed) of establishing specific causation. If given the ex ante choice between an averaging rule (Rule 1) providing the flat, pro rata market share of $500 to the consumers (derived by dividing the solvent defendant's $50,000 aggregate market-share liability by 100) and alternatively a rule with higher litigation costs but providing full recovery ($1000) on proof of specific causation or the market share average ($500) (Rule 2), the consumers would rationally choose the former. The higher cost of Rule 2 is decisive because both rules otherwise provide consumers with equal expected value of $500. Rule 1 provides a 100% chance of recovering $500. Rule 2 also provides $500 expected value: $50 (5% chance of recovering $1000—only five consumers will have individualizing evidence linked to the solvent manufacturer) plus $450—95% chance of recovering $473.68 (the pro rata share taken by the remaining 95 consumers from the balance of the solvent manufacturer's aggregate market share ($45,000) after deducting $5000 to pay the five specific causation claims).

[91] A simple example may clarify this idea. Assume a plaintiff class of 100 members of which each will develop one of four types of injury, in order of severity respectively inflicting losses of $25, $50, $75, and $100. Twenty-five class members will develop each injury, thus composing a total loss of $6250. Suppose that the defendant's aggregate liability equals half the loss: $3125. If this sum were distributed in equal percentages over the class's losses, each member would have a 25% chance of suffering the following types of losses: $12.50, $25, $37.50, and $50. This distribution would be better than no compensation but would still be quite unattractive to risk-averse plaintiffs. They would prefer structuring the distribution to provide benefits mostly to plaintiffs with more severe injuries, for example by paying 65% of losses of $100, 53% of losses of $75, 40% of losses of $50, and nothing to plaintiffs suffering the $25 injury. In effect, this plan leaves the 50% of least severely injured plaintiffs with net losses of $35, the 25% of most severely injured plaintiffs with net losses of $30, and the 25% of moderately injured plaintiffs with net losses of $25.

plicated for low-income subclasses, because class members generally, subjected to palpable though randomly distributed risk of especially devastating economic consequences from severe injury, would rationally favor adjustment of damage schedules to address such consequences.

Finally, averaging not only comports with but is required by individual justice to correct the regressive tax effect of tort liability. In many situations, workers and consumers pay the same premium for tort insurance due to wage reductions and product prices, but receive damages tailored to their distributional differences, particularly income-earning capacity.[92] Aside from receiving a higher utility of the marginal dollar, the less well off effectively subsidize the more well off by paying premiums in excess of the actuarially fair rate for the risk being covered. In a competitive insurance market, well-informed but low-income purchasers of insurance would not agree to pay the same premium that high-income purchasers would accept to cover their respective low- and high-value perils. To be sure, transaction costs prevent individual bargaining over the premium embedded in the product price or wage scale, but the impracticality of bargaining does not justify perpetuating any distributionally regressive cross-subsidy. In such cases, damage schedules employing payment categories, differentiated according to nonrandom but distributionally neutral factors (e.g., smoking), would seem an imperative of individual justice. The market context of tort liability for risk-based claims, in sum, dictates use of averaged compensation schedules modeled from insurance theory to achieve individual justice because individuals desire to maximize their own utility.

C. *Objective Measures of Loss and Choice*

Objective, probabilistic, and cost-benefit (utility) tests of reasonableness pervade tort law.[93] The reliance on reasonableness standards

From the deterrence standpoint, this plan distributes virtually the same amount to the class as a whole as would the original 50% structure.

[92] See supra notes 52-53 and accompanying text.

[93] See, e.g., Saratoga Fishing Co. v. Marco Seattle Inc., 69 F.3d 1432, 1439-42 (9th Cir. 1995) (applying risk-utility calculus in defective-design maritime products-liability case); McElhaney v. Eli Lilly & Co., 739 F.2d 340, 340 & n.1 (8th Cir. 1984) (per curiam) (limiting strict prescription-drug liability to reasonably foreseeable risks); Basko v. Sterling Drug, Inc., 416 F.2d 417, 425-27 (2d Cir. 1969) (requiring prescription-drug manufacturer to provide reasonable warnings of known or knowable risks); see also Restatement (Second) of Torts §§ 282-283 (1977) (defining negligent conduct by reference to behavior of "a reasonable man under like circumstances"); id. §§ 402A-402B (basing strict products liability on "defective condition unreasonably dangerous"); id. § 433B (defining the preponderance of evidence standard in probabilistic terms); id. §§ 519-524A (using cost-benefit analysis to define strict liability cause of action for abnormally dangerous activity); id. §§ 822-831 (us-

to determine both liability and damages demonstrates powerfully that the substantive law of tort in operation coheres with and, indeed, necessitates collectivized processes. As discussed more generally below, the objective standard of reasonableness is what individuals would rationally adopt as the general measure of individual justice ex ante. For immediate purposes, it is sufficient to note the distinct implications of the reasonableness standard for collectivizing risk-based claims.

1. *Future Pecuniary Loss*

Because the uncertainty of future loss can be resolved only on an expected-value basis, averaging according to the reasonableness criterion is inevitable. The objective-reasonableness criterion thus applies to risk-based claims, just as it governs the projection of damages for future ultimate injury in cases predicated on some accrued, minor injury. The criterion applies regardless of whether the loss relates to income or to special items like medical expenses.

2. *Warnings and Informed Choice*

Many mass-exposure claims charge the defendant with being strictly liable and negligent for failing to provide sufficient warnings of the risk involved to enable the plaintiff to make an informed choice whether to assume the risk.[94] Such claims are closely related to the notion of individual justice as self-determination. Indeed, courts often predicate the claim on a moral premise of individual autonomy.[95] Yet courts generally apply a reasonableness, cost-benefit calculus to resolve these claims,[96] which are compelled to collectivization by recog-

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ing cost-benefit analysis to define private nuisance cause of action); Restatement (Third) of Torts: Products Liability § 2 & cmt. a (Tentative Draft No. 1, 1994) (using risk-utility calculus in design-defect claims).

[94] See, e.g., In re Silicone Gel Breast Implant Prod. Liab. Litig., No. CV 92-P-10000-S, 1994 WL 578353 (N.D. Ala. Sept. 1, 1994); Bowling v. Pfizer, Inc., 143 F.R.D. 141, 165 (S.D. Ohio 1992) (convex/concave heart valve); Tetuan v. A.H. Robins Co., 738 P.2d 1210, 1225 (Kan. 1987) (Dalkon Shield); Fischer v. Johns-Manville Corp., 512 A.2d 466, 470 (N.J. 1986) (asbestos); Fibreboard Corp. v. Pool, 813 S.W.2d 658, 665-66 (Tex. Ct. App. 1991) (asbestos), cert. denied, 113 S. Ct. 3037 (1993).

[95] See, e.g., Borel v. Fibreboard Paper Prods. Corp., 493 F.2d 1076, 1089 (5th Cir. 1974) (employing consumer-sovereignty rationale for having warning requirement); Canterbury v. Spence, 464 F.2d 772, 780 (D.C. Cir.) ("The root premise is the concept, fundamental in American jurisprudence, that '[e]very human being of adult years and sound mind has a right to determine what shall be done with his own body . . . .'" (quoting Schloendorff v. Society of N.Y. Hosp., 105 N.E. 92, 93 (N.Y. 1914))), cert. denied, 409 U.S. 1064 (1972); *Tetuan*, 738 P.2d at 1227 (holding that "[i]f plaintiff had known of the dangers of the Dalkon Shield, she would never have used it").

[96] See, e.g., Restatement (Second) of Torts § 402A cmt. j (1977) (requiring seller to warn of product risks which "consumer would reasonably not expect" and of which seller

nition not only of the infinite variation in abilities to evaluate risk information and in the personal interests affecting choices, but also by the problem of gauging the credibility of plaintiff testimony given after the fact regarding subjective states of knowledge and counterfactual states of choice.

3. *Negligence and Strict Liability*

The dominant standards of liability in tort require an objective reasonableness calculus of social costs and benefits. This fact is well understood for negligence, but, as further elaborated below, it is also true for strict liability. At the very least, the use of strict liability involves a determination that responsibility for the risk should be unilateral: that the defendant should bear the loss alone and not share it with the plaintiff. This determination should evaluate the relative capacities of the parties to take reasonable care, as well as to moderate activity level (the rate or frequency of risky activity).[97] Moreover, courts often presumptively impose strict liability, conditioned on defenses of contributory negligence or assumption of risk determined by the reasonableness standard.[98]

"has knowledge, or by the application of reasonable, developed human skill and foresight should have knowledge"); *Borel*, 493 F.2d at 1088 (same); *Canterbury*, 464 F.2d at 787 (holding that medical disclosures should be judged according to "reasonableness of the physician's divulgence in terms of what he knows or should know to be the patient's informational needs"); Forest v. E.I. DuPont Nemours & Co., 791 F. Supp. 1460, 1464 (D. Nev. 1992) (holding that § 402A's duty-to-warn component resembles negligence action because of its focus on foreseeability of risk and reasonableness of warning); see also *Fischer*, 512 A.2d at 471-72 (holding that in strict products liability cases, New Jersey law presumes knowledge of danger by manufacture and that analysis reduces to reasonableness of manufacturer's conduct in manufacturing and marketing product); *Fibreboard*, 813 S.W.2d at 668 ("In a failure-to-warn case, the plaintiffs are required to establish that the dangers were reasonably foreseeable or scientifically discoverable at the time of the exposure before a defendant can be found liable.").

97 See Shavell, supra note 21, at 9-32 (discussing need to evaluate effect that different liability rules will have on both level of care and activity level of injurer and victim before choosing strict liability).

98 Voluntary unreasonable encountering of known risk constitutes a defense to strict liability for product defects and for abnormally dangerous activities. See Restatement (Second) of Torts §§ 402A cmt. n, 523, 524 (1977) (strict products liability); id. §§ 523-524 (strict liability for abnormally dangerous activities); Novak v. Navistar Int'l Transp. Corp., 46 F.3d 844, 848-49 (8th Cir. 1995) (applying § 402A cmt. n and holding that voluntary unreasonable encountering of known risk is defense in strict products liability suit); Turcotte v. Ford Motor Co., 494 F.2d 173, 183 (1st Cir. 1974) (same); Messick v. General Motors Corp., 460 F.2d 485, 491-94 (5th Cir. 1972) (same); Atkins v. American Motors Corp., 335 So. 2d 134, 143 (Ala. 1976) (same).

4. Just Compensation for Takings

More fundamentally, tort law applies an objective-reasonableness calculus in deploying the negligence and strict liability rules to achieve the general compensatory goal of "just compensation for takings." In tort law, this goal most closely approximates the notion of individual justice as self-determination. Just compensation resolves the conflicting interests of social actors by assuring each the autonomy and security to pursue self-beneficial ends, even by placing others at risk, but only if the activity yields sufficient personal or social utility to pay (or fund indirectly through taxation) insurance-model compensation to cover the accompanying risk. The important point here is the fact that just compensation often results automatically prior to any accident because those at risk receive greater social utility from the firm's activity. Tort law monitors for this "ex ante compensation" by testing the reasonableness of the defendant's activity not only for net social utility, but also to assure that the shares of net benefit have been distributed equally among all similarly situated members of the at-risk population.[99]

For example, consumers of fossil-fuel generated power receive the same utility from the electricity, but, because they live at varying distances from the plant, incur different levels of pollution risk. Applying the reasonable cost-benefit calculus, courts would seek to determine whether the ex ante compensation of (expected) social utility exceeds the risk sufficiently in order to establish a presumption that all consumers have been made better off by assuming not only the risk for the utility of the electric power, but also equal net benefits. Although the negligence rule might be used for these purposes, the low transaction costs of strict liability make it particularly attractive as a means of performing just compensation to remedy "takings" without sufficient ex ante compensation, as where consumers living close to the plant incur substantially greater risk from its polluting activity than those residing in more remote communities. Thus, holding constant all other factors, such as housing costs, and assuming that all consumers receive the same utility from electric power, a risk-based strict-liability claim for an insurance-fund judgment would serve to equalize expected net benefit among all consumers by transferring utility from remote to proximate residents. Under these circum-

[99] Using strict liability to distribute net benefit equally among similarly situated members of a consumer class promotes the generally accepted policy of egalitarian redistribution through horizontal equity, which few would contest. See Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 415-16 (1922) (Holmes, J.) (rationalizing just compensation as assuring that social enterprise deprives no one of "average reciprocity of advantage").

stances, the defendant will charge all consumers the same additional price for this strict liability insurance fund, reducing the net benefit of remote consumers by the amount necessary to offset the risk differential, while charging proximate consumers the actuarially fair premium for the insurance benefits they are receiving.[100]

The general point is that the reasonableness calculus for negligence and strict liability is inevitable and entails discovery and presentation at trial of facts concerning experience and estimates of cost and benefit relating to the entire spectrum of possible states of the world involving the defendant's risky activity and the potentially exposed population.[101]

Necessarily, this calculus not only yields relatively averaged cost-benefit assessments of the parties' options and actual conduct, but also, given the stakes in a particular case, will be too expensive for the plaintiff attorney (and sometimes the defendant) to finance optimally on a separate-claim basis. Only collective processes can ensure optimal investments in adjudication of the social cost-benefit calculus that determines the application of the negligence and strict liability standards.

CONCLUSION: FAIRNESS IN SUBSTANCE AND FORM

This Article challenges the orthodox assumption that collectivization of risk-based tort claims is antithetical to the notion of individual justice as self-determination. I argue that collectivization commits no offense to the notion of individual justice when the goal is optimal deterrence, as is generally the case. To the extent that compensation is the goal, moreover, no offense to individual justice is committed as

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100 Assume that all consumers receive expected utility of 10 from the electric power, but proximate consumers bear a pollution risk of five while remote consumers bear no pollution risk. Under a risk-based insurance-fund judgment founded on strict liability, the defendant would relieve proximate consumers of the risk and pass through a corresponding price increase equally to all consumers. For simplicity's sake, assume two consumers, *A*, the proximate consumer, and *B*, the remote consumer (and that both pay the same rate and receive equal utility (10) from the electric power supplied by the defendant), but that *A* bears a risk of five from the firm's pollution. Invoking strict liability, the court awards a risk-based insurance-fund judgment in the amount of five, which the firm covers by an increased charge of 2.5 to each consumer. As a result, *A*'s expected net utility from the defendant's activity is 7.5 (10 from electricity, minus 5 pollution risk, plus 5 from the risk-based insurance fund, minus 2.5 from the price increase to pay for the fund). *B*'s expected net utility is also 7.5 (10 from electricity, minus 2.5 from the price increase to pay for the insurance fund).

101 See Rosenberg, Class Actions, supra note 3, at 588-90 (demonstrating classwide nature of the calculation of ex ante risks, costs, and benefits required by external standard of optimal care).

long as the system conforms to sound insurance principles. In short, assuming that tort liability is necessary to supply compensation, collectivization of risk-based claims is what people would rationally choose under perfect market conditions or, more abstractly, behind a "veil of ignorance" to deal with uncertainty about their specific fates.[102] Scrutiny of the market for first-party commercial and tax-funded insurance provides empirical confirmation of these hypotheses.

Rational-choice arguments like the one offered here are frequently condemned as arbitrary and, indeed, distributionally biased.[103] The supposition of this criticism is that what people would choose depends on their starting entitlements and that it begs this distributional question to reify or infer the content of entitlements from choice patterns in the marketplace. Of course, if plaintiffs have no entitlement to particularization and are forced to pay (bribe) the defendant's extra litigation costs to provide disaggregated, individualized consideration, then they must and will settle for the efficient level of aggregate, averaged treatment. But, critics of rational choice arguments contend, if each plaintiff were entitled to any degree of subjectively preferred particularization, then, at the very least, the defendant would be required to pay (bribe) the plaintiffs to forgo their preferences to attain the efficient levels of aggregation and averaging. Such an entitlement could be established by a property rule that precludes defendants from demanding and courts from ordering the aggregation and averaging of risk-based claims.

But, as shown above, the attempt to establish a property rule or any legal command that overrides the efficient level of collectivization is a distributionally perverse, as well as foolhardy, venture. In reality, the market of direct contract and overlapping classes—by price and contract-term adjustments and by added transaction costs—will nullify, if not reverse, the desired redistributive effect.[104] Even if redistribution policy generally favors plaintiffs as opposed to defendant firms (comprised largely of middle- and low-income workers and stockholders), the perverse consequences of inefficient rules impose the costs of adjustment and nullification generally on the preferred class, rendering its members distributionally worse off than they would be under

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[102] See supra note 83 and accompanying text.

[103] See, e.g., Cass R. Sunstein, Incommensurability and Valuation in Law, 92 Mich. L. Rev. 779, 794 & n.48 (1994) (dismissing validity of using individuals' revealed preferences for deriving social-welfare functions for rational social-choice decisionmaking).

[104] See supra notes 51-52 and accompanying text.

the efficient rule.[105] The only systematic means of avoiding this result is by installing a totalitarian state that not only could detect and punish all underground bargaining to restore the distributional conditions of the efficient rule, but also could force individuals to produce goods and services for below-market wages and returns on investment.

Critics of rational-choice arguments invoke the so-called "Coase Theorem" as proof of the unavoidable effects both of initial entitlement assignments on distributional positions and of such positions on allocational efficiency as well as relative wealth of the parties.[106] First, it is claimed that the initial setting of entitlements even qualifies the validity of Coase's central thesis that under perfect market conditions of complete information and zero transaction costs the parties will bargain to an allocationally efficient outcome regardless of the governing legal rule. If one party lacks the means to pay, then the possibility of reaching the efficient outcome will depend on the entitlement setting. But this is true only in the rarest and most trivial cases, where such an entitlement setting is made outside the market and overlapping class contexts. Generally, in market and overlapping class contexts of cost pass-throughs, the entitlement setting has no substantial effect on prices and income and thus has no capacity to provide goods to those who cannot otherwise pay the cost.[107]

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[105] Assuming the diminishing marginal utility of money, the price increases and wage- and employment-level reductions by which firms "pay" the costs of circumventing, adjusting to, or contracting out of inefficient rules operate essentially as a regressive tax on the welfare of lower income classes.

[106] See generally Ronald H. Coase, The Problem of Social Cost, 3 J.L. & Econ. 1 (1960); see also A. Mitchell Polinsky, An Introduction to Law and Economics 11-14 (2d ed. 1989) (explaining "Coase Theorem"). The "Coase Theorem" posits that in a world of complete information and zero transaction costs to bargaining, a risk-taking firm and the risk-exposed population would negotiate agreements (and depending on the relative economic power of the parties, risk bearers would pay the risk takers) to adopt the allocationally efficient level of precautions. Id. at 12. The parties would reach this agreement regardless of the initial entitlement setting, that is, regardless of whether the firm had a "right" to inflict the risk or members of the exposed population had a "right" to be free of such risk. Id. at 11-12. For example, were consumers initially invested with a "right" to risk-based recovery or to particularized adjudication of such a cause of action, and if that right were inefficient—either in failing to achieve optimal deterrence or in entailing wasteful administrative costs—in the Coasean world, the parties would simply bargain to the efficient rule: disavowal of the risk-based cause of action or replacement of particularized adjudication with collectivized process.

[107] While consumers may be vested with a "right," the allocationally efficient bargain will not result if the consumers or workers lack the economic means to "pay" the price. Vesting customers or workers with a right to be free of risk from a seller or employer does not, of course, prevent the risk-taking firm from exercising its economic power in the market of charging the right-holders for the costs of avoiding the risk. The consumers want (need) the firm's product or services, while the employees want (need) the firm's wages and benefits. The bargain made under Coasean conditions of zero transaction costs will

Equally false is the second related claim that the entitlement setting determines who must pay (bribe) to achieve the efficient outcome. In all cases arising in the market and overlapping class contexts, consumers pay the costs of producing the good, whether it is a car, tort insurance, or disaggregated process.

Critics of rational choice arguments make a third contention, sometimes referred to as the "wealth effects" or asking/offering dilemma. The claim is that the value an individual attributes to a good, for example, particularized treatment in the tort system, is inherently contingent on the initial entitlement assignment. Polinsky succinctly states the point:

> To see what is meant by a wealth effect, note that the question "How much would you be willing to pay to avoid the loss?" implicitly assumes that you will suffer the loss unless you pay to avoid it, whereas the question "How much would you have to be paid to allow the loss to be imposed on you?" implicitly assumes that you will not suffer the loss. If you value the loss highly, then you are, in effect, much poorer when you are asked the first question than when you are asked the second. It is not surprising, then, that the answer to the first question is less than the answer to the second.[108]

But, in market and overlapping class contexts, no different answers would be given to these questions. Both the offered and asked-for price would be the same: the price of producing the good at the allocationally efficient level. For example, even if plaintiffs had the entitlement to have their tort claims resolved at any subjectively preferred level of particularity, they would neither insist on defendants complying with and paying for full effectuation of that entitlement nor would they solicit bribes from defendants to waive that obligation. At a minimum, plaintiffs would not engage in such behavior if defendants could adjust to or nullify the costs by increasing the price of their

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reflect the clearing price set by the well-informed, competitive market for the allocationally efficient safety precautions and adjudicative processes.

The same is true in cases of overlapping classes: Coasean bargains will not produce allocationally efficient results where the class targeted to receive the benefit must ultimately pay but cannot afford its price. For example, where the risk-taking firm's workers, who invoke a nondisclaimable "right" to allocationally efficient caretaking, are also the firm's consumers, the inability of those consumers to pay the price of such caretaking would preclude the allocationally efficient result. Cases of overlapping classes also include right-holding neighbors of the risk-taking firm, who do not patronize that firm (*F1*), but buy from a more remote firm (*F2*), with its own complement of right-holding neighbors. Assuming that both firms are enjoined by the same nondisclaimable rule of allocationally efficient care, the neighbors of *F1* reap no distributional gain by enforcing their "rights" against that firm if they cannot pay *F2*'s price increase were it to take allocationally efficient care in response to threatened enforcement of the same "rights" by its neighbors.

[108] Polinsky, supra note 106, at 136-37.

products or services.[109] Desiring such products and services, consumers can only make themselves distributionally worse off by threatening to enforce their entitlement.[110]

More generally, in well-working competitive markets (and of course the perfect market conditions posited by Coase), the price set by that market would be agreed upon by parties seeking the exchange of mutually beneficial goods. For example, employers will offer jobs at wages reflecting the efficient level of risk, and in a competitive labor market, those seeking jobs will accept the offer regardless of whether they possess a property rule entitlement to a risk-free workplace. The property right could be made inalienable, but this would simply eliminate the job opportunity. Perfect markets do not exist, and nooks and crannies of imperfection offer possibilities of redistribution. But it is doubtful that their number and importance make it sufficiently worth ferreting them out to warrant the effort. Often the result is the expenditure of high transactions costs for fleeting and slight redistributional effects, which are usually obtained by shifting welfare from one relatively low-income group to another.[111]

Proceduralists make the same mistake in assuming that particularizing or "participatory" process—the proverbial day in court—represents some independent value to plaintiffs that should be guarded by a property right against any collectivizing compromises.[112] Why the interest of defendants in avoiding at least unnecessary days in court should not receive equal protection is never explained. Indeed, proceduralists never clearly identify reasons for why plaintiffs would desire the particularizing process for its own sake—that is, unrelated to any instrumental reasons, such as providing cost-effective improvements in the accuracy or replacement value of compensation awards. In any event, the general point holds: Plaintiffs are never made better off by being vested with a property right—which absent the entitle-

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[109] For the suggestion that market contexts fall outside the wealth-effects critique, see Bebchuk, supra note 46, at 679-80 (arguing that the "'wealth effect' can be ignored when the value of the entitlement to the consumer is very small"). The contribution of this Article is in making this exclusion explicit in terms of the price set by competitive markets and in extending the exclusion to overlapping classes.

[110] The subjective taste for particularized process will vary across the consumer class and there is no reason, theoretical or practical, why consumers with a high taste for such process and high incomes should be precluded from purchasing any level of particularization they desire by paying for the resulting public and private (including defendant) costs. Cf. 1 American Law Inst., supra note 5, at 434-37 (proposing limitations and terms for opting out of class actions).

[111] Tax and welfare transfers provide far more administratively and allocationally efficient means of redistributing wealth than tort, especially when tort uses inefficient rules. See generally Kaplow & Shavell, supra note 44.

[112] See supra note 3 and accompanying text.

ment they would not and could not pay for—to an inefficient day in court, to personal control over their claims, and to other anticollectivist procedures. This hypothesis is confirmed by empirical evidence of the high rate of purchase of insurance with subrogation, and of settlement of most civil litigation—settlements based on patterns of averaged liability and compensation values derived from a few fully tried cases. Thus, if any virtue is vindicated by rejecting systematic, court-supervised collectivization of risk-based claims, surely it is not individual justice as self-determination.