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DO WE REALLY KNOW ANYTHING ABOUT THE BEHAVIOR OF THE TORT LITIGATION SYSTEM—AND WHY NOT?*

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Even the most rudimentary facts about the legal system are unknown or misunderstood.[1]

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[1] Derek C. Bok, *A Flawed System of Law Practice and Training*, 33 J. LEGAL EDUC. 570, 581 (1983) (report of the President of Harvard University and former Dean of its law school to the Board of Overseers on problems of the legal profession).

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INTRODUCTION

Much of what we think we know about the behavior of the tort litigation system is untrue, unknown, or unknowable. This Article explicates that proposition and its implications and suggests approaches for narrowing the immense gap that now exists between the system as we imagine it and the system as it is.

Students[2] of legal policy face an intellectual challenge comparable to that encountered by paleontologists and archaeologists. On the evidence of a few bones, a whole dinosaur must be extrapolated. From a fragment of spandrel, the design of an entire arch and its ornamentation must be deduced. Similarly, our current understanding of the tort litigation system is constructed of inferences built upon evidence that is surprisingly incomplete and inadequate.

Paleontologists and archaeologists have an advantage over students of the litigation system. They know how fragmentary their evidence often is and how brittle are the resulting inferences. Accordingly, they proceed with suitable caution. The same cannot be said of those concerned with the litigation system. On the other hand, our counterparts in the antiquities suffer a disadvantage: they can do little to improve upon the few fragments of evidence that come into their possession. By contrast, improved understanding of the behavior of the litigation system need not remain forever beyond reach.

The purpose of this Article is to help us extend that reach. This Article will review the existing empirical evidence on the behavior of the tort litigation system and demonstrate the inadequacy of that evidence for drawing trustworthy conclusions about the way the system actually performs or for redesigning the system in ways that will cause it to work predictably better. The larger purpose is to suggest the kinds of information needed to gain real comprehension of and control over the litigation system.

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[2] Scholars, policy-makers, and policy-influencers.

I. PREPARING FOR THE DIG

A. *Implications and Importance*

A reasonably veridical picture of the actual (rather than the assumed or asserted) behavior of the tort litigation system is a necessary but missing ingredient for addressing a wide range of questions, from theory to policy to strategy.

The substantive rules of tort law exist to serve certain social purposes. The most prominent among these are compensating innocent victims for injury and deterring behavior that presents risks that exceed their social value.[3] In order to devise rules that will accomplish these goals, rulemakers operate from some model, some image, of the problems the rules are designed to ameliorate and the means by which they will do so. Debate over fundamental alternatives—market, tort, administrative compensation, no-fault, socialized regulatory systems, etc.—depends heavily on comparisons of the effects these different compensation and deterrence systems are expected to have on the problems to be solved. Systems and rules are evaluated by comparing their intended effects to their actual effects.[4] Reformers typically make reference to precisely this gap between goals and performance.

Proposed reforms in substantive law must be evaluated against images of a predicted future without that change and a future with the contemplated changes. The utility of such planning depends upon the accuracy of our models of the system and the world upon which it is to act. Once in place, the intended effects of reforms must be evaluated against their actual effects to see if they have been effectual, ineffectual,[5] or perhaps made matters worse.[6]

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[3] *See, e.g.*, GUIDO CALABRESI, THE COST OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS 26 (1970) (taking it as "axiomatic that the principal function of accident law is to reduce the sum of the costs of accidents and the costs of avoiding accidents"); W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 2, at 7 (5th ed. 1984) (stating that tort law's "primary purpose is to compensate [the victim] for the damage suffered, at the expense of the wrongdoer"); RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 176 (1986) (stating that "[m]aintaining the credibility of the tort system requires that if a defendant is found liable, he must pay damages at least as great as [the victim's losses]"). In circumstances where the harm was inflicted deliberately or recklessly, punishment resembling criminal sanctions becomes an additional objective of tort law. *See* KEETON ET AL., *supra*, § 2, at 9.

[4] *See* Karl N. Llewellyn, *Some Realism about Realism–Responding to Dean Pound*, 44 HARV. L. REV. 1222, 1235-37 (1931) (noting that one of "the common points of departure" of legal realists is "[a]n insistence on evaluation of any part of law in terms of its effects").

[5] *See, e.g.*, Julie Horney & Cassia Spohn, *Rape Law Reform and Instrumental Change*

Even lawmaking that appears brilliant within its closed circle of assumptions can lose some of its shine when the time comes to deploy it in the real world.[7]

The effects of substantive rules are intertwined not only with the effects of legal procedure[8] but also with the effects of the social, economic, and technological environment—the legal system's *milieu externe*. Unless the picture is sufficiently detailed and thoughtfully analyzed, it would be impossible to distinguish the effects of changes in the law from changes in the law's social, economic, or technological surround.[9] As a result, most discussions of the

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in Six Urban Jurisdictions, 25 LAW & SOC'Y REV. 117, 117 (1991) (reporting that rape law reform in six cities failed to produce the expected effects: "predicted results were found in only one of the six jurisdictions, and there the results were limited").

[6] Legislating blind has the potential to exacerbate old problems or create new ones. *See, e.g.*, PATRICIA M. DANZON, MEDICAL MALPRACTICE: THEORY, EVIDENCE, AND PUBLIC POLICY 82 (1985) (stating that "[of] the post-1975 tort reforms [two of them] significantly reduced claim severity, but none of the others had a discernible impact"); Stephen Shmanske & Tina Stevens, *The Performance of Medical Malpractice Review Panels*, 11 J. HEALTH POL. POL'Y & L. 525, 535 (1986) (concluding that the medical malpractice review panel system does not work as intended to lower costs, but rather "seems to lead to more formal disputes which take longer to resolve at greater cost"). *See generally* LEO KATZ, BAD ACTS AND GUILTY MINDS: CONUNDRUMS OF THE CRIMINAL LAW 49 (1987) (discussing the improbability of even a meticulous drafter's foreseeing all, or nearly all, of the contingencies and consequences of proposed legislation). Further examples of legislation having unintended effects will become evident as this Article unfolds.

[7] *See* TERESA A. SULLIVAN ET AL., AS WE FORGIVE OUR DEBTORS: BANKRUPTCY AND CONSUMER CREDIT IN AMERICA 336 (1989) ("To advocate law reforms without a shred of evidence about how the system currently works, who is likely to be affected, and how those effects may reverberate throughout the system is breathtakingly negligent.").

[8] The effects of the rules of civil procedure have not been particularly well-studied, despite their general applicability and high visibility in the legal system. *See* Laurens Walker, *Perfecting Federal Civil Rules: A Proposal for Restricted Field Experiments*, LAW & CONTEMP. PROBS., Summer 1988, at 67, 67. On the 50th anniversary of the Federal Rules of Civil Procedure, Walker reviewed all of the empirical studies done to test whether the Rules were having their intended effects. He found only a handful of such studies. In order to turn the scholarship and rulemaking of legal procedure into something more than a high stakes guessing game, Walker proposes a methodology of ongoing field experiments. *See id.*

[9] An example may sharpen the point: Strict liability for injuries resulting from products is cited as the cause of increases in product liability litigation, plaintiffs' verdicts, size of awards, punitive damage awards, and resulting effects on industry. But suppose that during the same period the sheer number of products increased, the range of people who used them increased, the wealth of corporations increased, management methods changed, the marketplace changed, and so on. Products need not have become more dangerous in order for there to be more injuries and commensurate claims. For example, clothing ranks as more dangerous (40th most hazardous product group) than chain saws (the 125th most hazardous). *See* BUREAU

effects of legal rules and changes in legal rules are unavoidably speculative.

Similarly, asserted harmful discontinuities in the behavior of the tort litigation system can be evaluated and dealt with effectively only if the necessary evidence and analysis are developed.[10] The data available concerning various aspects of a litigation crisis are inadequate to assess rationally the validity of the asserted concerns.[11] Yet belief in a litigation crisis exists widely. Motivated by

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OF EPIDEMIOLOGY, U.S. CONSUMER PROD. SAFETY COMM'N, CONSUMER PRODUCT HAZARD INDEX 7, 10 (1976). Thus, we first need to be sure that we are talking about changes in litigation that actually occurred and not those assumed to have occurred. For example, have punitive damage awards in these cases really grown more frequent or severe? *See infra* notes 389-434 and accompanying text. And if they have, can we untangle the multiple possible causes to determine which are really responsible? In principle, the answer is yes but the data now available are insufficient to answer this question.

[10] The principal manifestation of the crisis was precipitous increases in insurance premiums. That, at least, is the principal complaint voiced and the principal piece of evidence offered by most commentators. *See, e.g.*, James R. Posner, *Trends in Medical Malpractice Insurance, 1970-1985*, LAW & CONTEMP. PROBS., Spring 1986, at 37, 38, 47 (noting that "[s]udden, sharp increases in the cost of medical malpractice insurance" are "[c]ommonly cited in the press as evidence of crisis"). As an illustration of the point, see U.S. DEP'T OF HEALTH & HUMAN SERVS., REPORT OF THE TASK FORCE ON MEDICAL LIABILITY AND MALPRACTICE (1987). This report devotes 16 of its 17 data tables, and commensurate discussion, to malpractice premiums, profitability problems of the malpractice insurance industry, and physicians' office expenses. The principal cause of the crisis was said to be tort litigation: changes in the laws themselves or growing use of tort litigation by increasingly litigious citizens (afraid to accept the risks of life and wanting businesses and professionals to indemnify them from all harm) filing ever more lawsuits, aided by increasingly greedy lawyers and generous jurors who make ever more unpredictable decisions, which nevertheless add up to more plaintiff victories, larger awards, and more punitive damages. *See* HUGH R. JONES, INSURING OUR FUTURE: REPORT OF THE GOVERNOR'S ADVISORY COMMISSION ON LIABILITY INSURANCE 11-13 (1986) [hereinafter GOVERNOR'S COMMISSION] (reporting fears that major New York institutions, from airports to zoos, may have to close or scale back operations, an instance of the widespread disruption to our national life caused by the unavailability of liability insurance, and blaming increasingly litigious citizens aided by greedy lawyers and generous juries).

[11] *See, e.g.*, Stephen Zuckerman et al., *Information on Malpractice: A Review of Empirical Research on Major Policy Issues*, LAW & CONTEMP. PROBS., Spring 1986, at 85, 85 (reviewing the literature on medical malpractice litigation and noting that "[e]ven a casual follower of malpractice policy debates can see that the amount of published and unpublished information is voluminous; however, very little of that information consists of systematic empirical studies"). The New York Governor's Commission noted:

> [A]lthough the existence of a crisis is broadly acknowledged, the forces driving that crisis have remained shrouded in obscurity, confused by controversy, and clouded by a paucity of data and analysis. . . . Absent a comprehensive, fact-based perspective on why we are where we are, it has been impossible to establish the broad framework of consensus on the

fear of the perceived crisis's perceived consequences and guided by its perceived causes, in the latter 1980s, nearly every state modified its laws governing recovery for damages in tort.[12] The felt need to tame the crisis continues to place demands on the agendas of courts and legislatures.[13] Under such circumstances, lawmakers are forced to choose among failing to make needed reforms, making changes on little more than widely shared assumptions, or making compromises between widely divergent assertions. Legislating in the dark is unlikely to produce constructive solutions.[14]

Similarly, without accurate understanding of how the system actually behaves, practitioners must rely instead on the comfort of shared assumptions and guess what tactics and strategies will advance the causes of their clients. Errors in understanding the behavior of the litigation system lead to errors in case management at every stage of litigation, from case selection, to negotiation of settlements, to trial.[15]

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nature of the problem which is the predicate to a dispassionate and constructive resolution.

GOVERNOR'S COMMISSION, *supra* note 10, at 1-2.

[12] This orgy of guesswork included caps on awards for compensatory or punitive damages or both, regulation of attorneys and their fees, mandatory alternative dispute resolution, limitations on or immunities for various kinds of potential injurers, the collateral source rule, joint and several liability, periodic payments, and statutes of limitations. *See* NATIONAL CONFERENCE OF STATE LEGISLATURES, 1988 NCSL STATE LEGISLATURE SUMMARY: LIABILITY INSURANCE 5, 19, 25, 28 (1988); NATIONAL CONFERENCE OF STATE LEGISLATURES, RESOLVING THE LIABILITY INSURANCE CRISIS: STATE LEGISLATIVE ACTIVITIES IN 1986 (1986).

[13] *See, e.g.*, Pacific Mut. Life Ins. Co. v. Haslip, 111 S. Ct. 1032, 1043 (1991) (upholding common law method for calculating punitive damages, but requiring that "general concerns of reasonableness and adequate guidance from the court . . . enter into the constitutional calculation"); S. 2027, 101st Cong., 2d Sess. § 2 (1990) (a "Bill to require certain procedural changes in the United States district courts in order to promote the just, speedy, and inexpensive determination of civil actions"); S. 1400, 101st Cong., 1st Sess. (1989) (proposing the Product Liability Reform Act); *Nomination of David H. Souter to be Associate Justice of the Supreme Court of the United States: Hearings Before the Senate Comm. on the Judiciary*, 101st Cong., 2d Sess. 134 (1990) (statement of Sen. DeConcini) ("[G]rave[] concern[] [exists] about the so-called litigation explosion and its effect on the working of our judicial system . . . . [T]he volume of court cases has increased dramatically at all levels, State and Federal courts."). Vice President Quayle caused a stir when in a speech to the American Bar Association, he made a sweeping attack on the civil justice system, referring to it as "a self-inflicted competitive disadvantage" and as "a system . . . in danger of spinning out of control" before unveiling 50 justice system reforms recommended by the President's Council on Competitiveness. Vice President Danforth Quayle, Agenda for Civil Justice Reform in America, Address Before the American Bar Association (Aug. 13, 1991), *in* N.J. L.J., Aug. 29, 1991, at 15, 25.

[14] *See supra* text accompanying notes 5-7.

[15] *See, e.g.*, Kevin M. Clermont & Theodore Eisenberg, *Trial by Jury or Judge:*

Without accurate pictures of the factual underpinnings, debates about tort reform cannot proceed usefully. With inaccurate pictures, their conclusions are likely to be in error. Part II, the nucleus of this Article, contains many examples and considerable analysis of the shortcomings in our understanding of the tort litigation system.

B. *Varieties of Non-Evidence and Not-Quite Evidence About the Litigation System*

1. Absence of Evidence

Data on the litigation system's behavior are meager.[16] Even the most complete data on federal and state court activity fall far short of answering the most pressing and fundamental questions about the performance of the litigation system. The Administrative Office of the United States Courts (AO) has data on every federal civil case. But these data have been gathered merely as tools of caseload management. As a result, we can find out how the size of the federal judicial caseload changed between any two given years, but we cannot learn how the ratio of plaintiff to defendant success changed or how awards changed. Moreover, some important categories of data were not entered into the AO's database until the late 1970s.[17] Thus, one cannot find out how the proportion of plaintiff wins or the size of awards changed over time. One cannot, for example, compare awards from 1976 to 1986, the year the most recent "liability crisis" was declared. And we continue to have only

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Transcending Empiricism, 77 CORNELL L. REV. (forthcoming 1992) (presenting data strongly suggesting that in the federal courts, contrary to predictions, plaintiffs win about half of the time before judges and less than a third of the time before juries, but noting that interpretation of the data is exceedingly difficult because case characteristics are probably confounded with the decision-maker). For a discussion of the implications for settlement negotiations and trial strategy, see *infra* notes 213-67 and accompanying text, and Michael J. Saks, *Flying Blind in the Courtroom: Trying Cases Without Knowing What Works or Why*, 101 YALE L.J. 1177 (1992) (addressing the general problem of formulating litigation strategy without an understanding of how juries decide cases).

[16] *See, e.g.*, Zuckerman et al., *supra* note 11, at 88 (conducting an extensive review of data in the medical malpractice area and observing that "[t]he amount of primary data [on premiums, claims, and awards] that is regularly updated and publicly accessible is surprisingly limited").

[17] Data on which party was favored by the judgment were not recorded until after 1978. Similarly, most data on awards were not recorded until after the 1970s. *See* FEDERAL JUDICIAL CTR., FEDERAL COURT CASES: INTEGRATED DATA BASE, 1970-1987, at 2 (3d ed. 1989).

the crudest data on the case mix, a shortcoming that makes many inferences from the data largely meaningless.[18] In any event, the federal cases constitute only about 2% of the nation's litigation.[19]

Far less is known about the approximately 98% of tort cases that are litigated at the state level. For years, the National Center for State Courts (NCSC) has been working to bring about more uniform data collection and reporting among the states, but the process is a slow one. As states adopt comparable data definitions and collection practices, their data are included in the NCSC's consolidated report of litigation in the state courts. The most recent NCSC report was able to include tort data from only twenty states.[20] Moreover, those data have all the shortcomings of the federal data, plus some of their own. For example, case types are defined less consistently across state systems than within the federal system and are categorized in less fine-grained ways than the federal data.

The lack of data on the civil justice system provides a striking contrast to the criminal justice system. Beginning in the early twentieth century in the United States, systematic, diverse, and extensive data have been collected about crime and the criminal justice system's responses to it.[21] Data collection on the civil justice system has barely reached its infancy. Thus, we are incapable of providing comparable descriptions of the type and number of actionable injuries and the civil justice system's responses to them.

A lack of evidence, which might seem like an insuperable barrier, has barely slowed many policy-makers, scholars, and other commentators. Their discussions about the behavior of the tort liability system often have proceeded without even assembling the

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[18] We know how many cases have been placed in nominal categories, such as torts, contracts, or product liability—although we do not usually appreciate the fluidity of the categories or the fluidity of the categorizations. *See infra* note 167 and accompanying text. What is usually thoroughly ignored is the nature of the cases, strength of evidence, extent of injuries, etc. A tort case is not a tort case is not a tort case. This problem is developed in many places and ways later in this Article.

[19] *See infra* note 187 and accompanying text.

[20] *See* NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1988, at 35 (1990) [hereinafter NCSC 1988 REPORT].

[21] Data exist, starting in 1929 with the *Uniform Crime Reports for the U.S.*, *see* 1929-1991 FBI UNIF. CRIME REP.: CRIME U.S. (title varies slightly over years), and now including all or most levels of the system, from surveys of initial victimization through actual sentences served, at the state as well as federal level. In Britain, systematic data collection on the criminal system began in 1856. *See* Albert D. Biderman & Albert J. Reiss, Jr., *On Exploring the "Dark Figure" of Crime*, 374 ANNALS 1, 3 (1967).

fragments that do exist, much less pausing to figure out how they fit together. The result is a picture of the litigation system built of little more than imagination.[22]

It will be helpful to expose some of what often has passed for "evidence" about the litigation system. After clearing away some of this haze, we will be better able to focus on the more complicated business of assessing the hard evidence that exists and the inferences that it can support.

2. Conclusory Assertions

Much discussion of the tort litigation system consists of conclusory assertions, unsupported by evidence. The following are several examples of this species, netted from a vast sea of similar creatures.

United States Senator Mitch McConnell purported to sum up the liability crisis for his Senate colleagues by claiming:

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[22] A 1986 survey of South Carolina lawyers, legislators, and physicians compared what they believed about that state's tort verdicts to what had been found by a systematic study of the actual cases. *See* Donald R. Songer, *Tort Reform in South Carolina: The Effect of Empirical Research on Elite Perceptions Concerning Jury Verdicts*, 39 S.C. L. REV. 585 (1988). Controlling for inflation, South Carolina tort awards had gone from a 1976 median of $2068 to a 1985 median of $2671, with almost no fluctuation in between. *See* F. Patrick Hubbard, *"Patterns" in Civil Jury Verdicts in the State Circuit Courts of South Carolina: 1976-1985*, 38 S.C. L. REV. 699, 724 tbl. 7 (1987). In the first half of the preceding decade, the annual median award for medical malpractice verdicts was $0 for three years and over $100,000 two years (the highest was $350,000 in 1979). *See id.* at 730. The medians in the five years preceding the survey (1981-1985) and the "crisis" itself had fallen and stabilized, ranging from a low of $14,750 to a high of $75,000. *See id.* Controlling for inflation, they ranged from $8702 to $41,100. *See id.*

Notwithstanding the actual behavior of awards, 22% of attorneys believed that awards had more than doubled in size in the preceding decade; another 38% believed that some increase had occurred. *See* Songer, *supra*, at 596-99. Barely more than one lawyer in ten correctly estimated the median tort award's size; more than one-third estimated it to be at least three times, and some more than twenty times, as large as it really was. *See id.* Ninety-seven percent overestimated the size of product liability awards, more than half by a factor of at least five. *See id.* Most of these lawyers did, however, underestimate the size of the median medical malpractice award. *See id.*

It may be little consolation to learn that South Carolina's state legislators overestimated tort awards by a wider margin (yet they were much closer to the mark on defective products cases while underestimating malpractice awards by an even greater extent than lawyers). *See id.*

Physicians were the farthest from the mark. Only 1.8% correctly estimated the median tort award; more than half overestimated it by a factor of at least five. *See id.* Over 60% of physicians believed the 1985 median malpractice award to be over $100,000 when in reality it was $66,000. *See id.*

> Hardly a day goes by that we do not hear or read of the dramatic increase in the number of lawsuits filed, of the latest multimillion verdict, or of another small business, child care center, or municipal corporation that has had its insurance canceled out from under it. . . .
>
> . . . [Why?] Because, quite simply, everyone is suing everyone, and most are getting big money. . . . [Americans have developed a] mad romance . . . with the civil litigation process.[23]

The Insurance Information Institute informs us in one of its publications: "While our judicial system is basically a good one, it has been handicapped by unnecessary lawsuits, . . . exorbitant awards, and unpredictable results. . . . [T]he number of personal injury, product liability, or property damage suits . . . has created a crisis. . . . The civil justice system is being used to right every imaginable wrong."[24]

Another example comes from the press: "Across the country, people are suing one another with abandon; courts are clogged with litigation; lawyers are burdening the populace with legal bills. . . . This massive, mushrooming litigation has caused horrendous ruptures and dislocations at a flabbergasting cost to the nation."[25]

Perhaps we can forgive the literature of industries and professions traumatized by insurance premiums and grasping for simple answers in a field they little understand. Nevertheless: "In approaching the medical malpractice issue the committee was keenly aware that the U.S. civil litigation system generally has undergone explosive growth in certain kinds of tort liability in recent years. This growth has attracted wide attention because of dramatic, often breathtaking, jury awards and settlements."[26]

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[23] 132 CONG. REC. S948-49 (daily ed. Feb. 4, 1986) (statement made while introducing S. 2038, the Alternative Dispute Resolution Promotion Act). Some of this, of course, is pure hyperbole: "Everyone is suing everyone." But it implies a basis of some facts, some data. In his speech to the Senate, Senator McConnell cited growth in total federal civil filings (highly misleading, as we shall see later, *see infra* notes 153-211 and accompanying text). *See* 132 CONG. REC. S948 (daily ed. Feb. 4, 1986). Yet repeated inquiries to Senator McConnell's office produced nothing of more substance.

[24] INSURANCE INFO. INST., THE LAWSUIT CRISIS 1-2 (1986).

[25] Jack Anderson, *U.S. Has Become a Nation of Lawsuits*, WASH. POST, Jan. 25, 1985, at B8. For more examples, see Marc Galanter, *The Day After the Litigation Explosion*, 46 MD. L. REV. 3 (1986), and Stephen Daniels & Joanne Martin, *Jury Verdicts and the "Crisis" in Civil Justice*, 11 JUST. SYS. J. 321 (1986).

[26] 1 COMMITTEE TO STUDY MEDICAL PROFESSIONAL LIAB. & THE DELIVERY OF OBSTETRICAL CARE, INST. OF MEDICINE, MEDICAL PROFESSIONAL LIABILITY AND THE DELIVERY OF OBSTETRICAL CARE 3 (1989) [hereinafter COMMITTEE TO STUDY MEDICAL

Parallel examples come from the world of legal policy-making itself. Consider a recent report by the Justice Department.[27] The report begins with a discussion of "The Crisis in Insurance Availability and Affordability" and concludes with a set of recommendations for change in tort law. The bulk of the report discusses the contribution of the tort system to the crisis, largely by focusing on doctrinal and theoretical aspects of the system that the report's authors assume connect the behavior of the tort litigation system to the insurance crisis, a connection for which they provide no evidence.[28]

The literature of law reviews also provides many examples of works that do not pause long to establish factual predicates before moving on to explaining causes or prescribing cures. Indeed, legal scholars have a special fascination with doctrine and theory, which may prompt them to hurry past the factual predicates on which all the rest often depends.[29]

Examples abound, but the preceding sampler should convey the flavor of the problem. Some of these conclusory assertions stand alone, without anything remotely resembling evidence to support them. Others are accompanied by an anecdote or two. Others point to increased insurance premiums and regard them as completing the case against the litigation system. But at the end of

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PROFESSIONAL LIABILITY].

[27] U.S. DEP'T OF JUSTICE, REPORT OF THE TORT POLICY WORKING GROUP ON THE CAUSES, EXTENT, AND POLICY IMPLICATIONS OF THE CURRENT CRISIS IN INSURANCE AVAILABILITY AND AFFORDABILITY (1986) [hereinafter TORT POLICY REPORT].

[28] *See id.* at 45-52. What little data the report does present are mostly from a source (Jury Verdict Research) upon which serious students of the litigation system do not rely. *See id.* at 35-41. Jury Verdict Research (JVR) itself disclaims the capacity of its data to provide the evidence sometimes attributed to it: "JVR has neither asserted nor published any conclusions that the average size of jury verdicts has recently skyrocketed. . . . The apparent reason for this erroneous impression [of our data] is that a number of highly publicized news articles quoting our statistics have grossly misstated them." *Product Liability Reform Act, 1986: Hearings on S. 2760 Before the Senate Comm. on the Judiciary*, 99th Cong., 2d Sess. 226-27 (1986) [hereinafter *PLRA Hearings*] (statement of JVR). The major problems with JVR's data are discussed later in this Article. *See infra* notes 351-52 and accompanying text.

[29] Sherlock Holmes offered relevant advice in *Silver Blaze*:

> [W]e are suffering from a plethora of surmise, conjecture, and hypothesis. The difficulty is to detach the framework of fact—of absolute, undeniable fact—from the embellishments of theorists and reporters. Then, having established ourselves upon this sound basis, it is our duty to see what inferences may be drawn.

II SIR ARTHUR C. DOYLE, THE ANNOTATED SHERLOCK HOLMES (William S. Baring-Gould ed., 1967).

the day, these assertions are hollow conclusions, offered without evidence to sustain them.

3. Anecdotal Evidence

The use of anecdotal evidence has been unusually popular in discussions about the nature of the litigation system.[30] Perhaps the use of anecdotes is not entirely inappropriate or unfair, given the central role cases play in law as the device for sampling social facts, the unit of accretion of judicial authority, and the principal tool for educating new lawyers. For these reasons cases have a special power over lawyers, more so than over any other field.[31] To use "cases" to attack the legal system may be poetic justice.

Nevertheless, anecdotal evidence is heavily discounted in most fields, and for a perfectly good reason: such evidence permits only the loosest and weakest of inferences about matters a field is trying to understand. Anecdotes do not permit one to determine either the frequency of occurrence of something or its causes and effects. They do no better in enlightening us about the behavior of the tort litigation system.

If we wish to find out whether tort cases have increased in frequency, favorability to plaintiffs, or unpredictability, how can we learn about these things through the telling of a handful of stories (or a hundred stories) about cases in which plaintiffs "won and won big?" Yet much of the "evidence" about the litigation system has proceeded from just such anecdotes.[32] These anecdotes may work

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[30] One example is the case of the burglar who fell through the skylight. According to this anecdote, the burglar sued and won damages of $206,000 plus $1,500 per month for life. Another case involved a plaintiff in a medical malpractice action who claimed that she lost her powers of extrasensory perception due to negligent treatment with a CAT scan. She won the case and was awarded $1 million in damages. A third example involved "[a]n overweight man with a history of coronary disease [who] suffered a heart attack trying to start a Sears lawnmower. He sued Sears, charging that too much force was required to yank the mower's pull rope. A jury in Pennsylvania awarded him $1.2 million, plus damages of $550,000 for delays in settling the claim."

[31] Most fields that use case studies (for example medicine, business, and psychology) recognize their considerable limitations as a means for gaining knowledge about the phenomena of interest to their field, and the case accordingly occupies a modest position in their respective epistemologies. *See, e.g.*, DONALD T. CAMPELL & JULIAN C. STANLEY, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH 6-7 (1963) (stating that case studies "have such a total absence of control as to be of almost no scientific value"). In no other field is a case the means by which anything remotely as important as "authority" is created and transmitted.

[32] *See* Daniels & Martin, *supra* note 25, at 325. Daniels and Martin review a variety

as a persuasive device, in that a few examples of apparent greed, abuse, or system irrationality can arouse people emotionally. But if we want to know how the system is really performing, and we are not merely trying to provoke people to despise it or fear losing it, then we must do more than fling anecdotes back and forth.

Although the validity of the anecdotes themselves is the least important issue, their validity deserves mention. Some litigation system anecdotes are simply fabricated.[33] Others are systematically distorted portrayals of the actual cases they claim to report.[34] More important than what we learn about these stories, perhaps, is what we learn about ourselves and our remarkable credulity.[35]

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of these anecdotes and suggest that their rhetorical functions are to suggest to the public that: (a) many if not most claims are frivolous; (b) plaintiffs are undeserving, often causing their own injuries; (c) juries are overly sympathetic, especially against corporate defendants; (d) defendants are not at fault, or at least are not the direct cause of the injury; and therefore (e) the civil justice system has run amok. *See id.*

[33] *See* Steven Brill & James Lyons, *The Not-So-Simple Crisis*, AM. LAW., May 1986, at 1, 12-14.

[34] Consider the three anecdotes presented *supra* note 30. The "burglar" who fell through the skylight was a teenager who climbed onto the roof of his former high school to get a floodlight. *See* Bodeine v. Enterprise High Sch., 73225, Shasta County Superior Court (1982), *reported in* Fred Strasser, *Tort Tales: Old Stories Never Die*, NAT'L L.J., Feb. 16, 1987, at 39. The fall rendered him a quadriplegic. *See id.* A similar accident at a neighboring school killed a student eight months earlier. *See id.* School officials already had contracted to have the skylights boarded over so as to "solve a . . . safety problem." *Id.* The payments were the result of a settlement; the case did not go to trial. *See id.* In the CAT scan/ESP case, the woman did claim economic loss due to her inability to perform her job as a psychic. But her claimed permanent injuries were due to a severe allergic reaction to a pre-scan drug injection. The judge instructed the jury not to consider the claim for loss of ESP and associated economic damages. The judge also set aside the million dollar award as either excessive or inconsistent with his instructions, and a new trial was ordered. *See* Haimes v. Hart, 81-4408, Philadelphia Court of Common Pleas, *reported in* Strasser, *supra*, at 39. In the third case, the man who suffered the heart attack was a 32-year-old doctor with no history of heart disease, and the lawnmower was shown to be defective. *See* Daniels & Martin, *supra* note 25, at 325. Daniels and Martin also note that only the *Time* magazine version of the case gave accurate details. *See id.*; George J. Church, *Sorry, Your Policy Is Canceled*, TIME, Mar. 24, 1986, at 20, 20.

[35] Such anecdotes have been dubbed "urban legends." Brunvand has defined urban legends as "highly captivating and plausible, but mainly fictional, oral narratives that are widely told as true stories. We folklorists call them urban legends, although modern legends might be a more accurate term." JAN H. BRUNVAND, THE CHOKING DOBERMAN AND OTHER "NEW" URBAN LEGENDS at ix (1984). Brunvand has documented dozens of urban legends, including some legendary tort suits. Many of these legends are told from coast to coast, adapted to locale, accepted as true by the tellers and most of the listeners, yet none of them can be verified as real events by someone with personal knowledge of the account. *See id.* at ix-x.

Although Brunvand explains that these stories tend to spread naturally among the population, perhaps they are given an occasional nudge. A memorandum to the

Even when true, anecdotes enjoy a persuasive power that far exceeds their evidentiary value.

Anecdotes have a power to mislead us into thinking we know things that anecdotes simply cannot teach us. For example, people tend to equate the magnitude of a category with the ease of retrieval of instances from that category.[36] Because we easily remember captivating little stories, when called on to estimate how frequent various legal events and outcomes are, we mistakenly associate the ease of anecdote recall with the numerousness of the type of case. Anecdotes about undeserving plaintiffs are intriguing or outrageous and have been repeated often in the media. Consequently, people readily believe that the category of undeserving plaintiffs dominates the system.

But surely each anecdote, even a fabricated one, stands for a class of cases that does exist. Surely there are cases without merit. The trouble with legislation by anecdote is not just that some of them are false or misleading. Even if true and accurate, anecdotes contribute little to developing a meaningful picture of the situation about which we are concerned. It makes a difference if for every ten anecdotes in which an undeserving plaintiff bankrupts an innocent defendant, one, ten, one hundred, or one thousand equal and opposite injustices are done to innocent plaintiffs. The proportion of cases that results in one or the other error, and the ratio of one kind of error to the other, ought to be of greater interest to serious policy-makers than a handful of anecdotes on either side of the issue. Reforms are intended to change that ratio and the tens of thousands of anecdotes the ratio summarizes.

Maryland Association of Defense Trial Counsel recommends the use of anecdotes to promote favored legislation. *See* Memorandum from the Maryland Association of Defense Trial Counsel to All Members (Feb. 1, 1991) (on file with author).

[36] This is one aspect of a psychological phenomenon known as the *availability heuristic*. In one experiment, participants were given a list of names of men and women. Although the list contained equal numbers of names of men and women, the male names were ordinary while the female names included celebrities. When asked how many men versus women were on the list, people estimated that the women outnumbered the men. The explanation for the error is that, because of their celebrity, the women's names were easier to recall, and it is from recalled instances that we intuitively estimate frequencies. *See* Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 COGNITIVE PSYCHOL. 207, 220-21 (1973); *see also* Michael J. Saks & Robert F. Kidd, *Human Information Processing and Adjudication: Trial by Heuristics*, 15 LAW & SOC'Y REV. 123, 137-40 (1981) (applying the availability heuristic to legal contexts).

The answers to most questions about the behavior of the litigation system are inherently statistical. Anecdotes simply do not provide the information one needs to assess the system.

4. Factoids and Factlets

Other kinds of information that have dominated recent discussion about the liability system and its reform consist of what we might call factoids and factlets. Factoids are statements that sound like facts, that seem as though they are conveying some information, but that on examination turn out to be either false or meaningless.[37] Factlets are bits or pieces of real information about the problem, pieces one may hope can be sewn together into a serviceable quilt, but which by themselves leave much more unknown than known. Both fail to give their audience a meaningful grasp of the circumstances at issue, although they appear to do so. Our purpose here is not to develop a fine distinction between these two categories, but to illustrate several additional sorts of "evidence"—seemingly more than baseless conclusion or mere anecdote, but on examination no more informative.

Among the clearest examples of factoids are the use of public opinion poll results to reach answers to questions about the behavior of the litigation system. For example, a nationwide Harris poll released in mid-1986 stated:

> [A] big 69-24 percent majority nationwide is convinced that it is too easy "for people to sue for damages when they think they have been injured or some wrong has been done to them." . . . Implicit is a public demand that the procedure for filing claims ought to be overhauled to provide disincentives against many who would sue for damages.
>
> . . . .
>
> [A] big 63 percent majority is also convinced that the size of most of the cash settlements of such cases have been "excessive." Only 12 percent have the impression that the amounts usually awarded in such liability cases are "about right," and only 13 percent believe they have been "not enough." Clearly, by any measure, the vast majority is convinced that the system of

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[37] *See* NORMAN MAILER, MARILYN 18 (1973) (coining the word "factoids" and describing them as "facts which have no existence before appearing in a magazine or newspaper, creations which are not so much lies as a product to manipulate emotion in the Silent Majority").

> rectifying wrongs done to individuals in liability cases is totally out of control.
>
> . . . .
>
> [A] 77-15 percent majority of the American people also lays blame for the liability crisis at the doorstep of "people who figure they can make a lot of money from such suits."[38]

A finding that the public believes by a 69-24% majority that "the size of most cash settlements has been excessive," cannot rationally support a conclusion that "cash settlements" are in fact excessive.[39] One might think otherwise, judging from the eagerness with which some proponents of reform cite such "data."[40] But saying that the public believes proposition *X* is true is not the same as saying that *X* is in fact true.[41]

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[38] Louis Harris, *Excessive Cash Settlements and Lawyers Faulted for Rise in Liability Suits*, HARRIS SURVEY (Tribune Media Servs., Inc., Orlando, Fla.), June 9, 1986, at 1.

[39] Indeed, compare the public belief to the empirical studies of awards discussed later in this Article. *See infra* notes 378-88 and accompanying text.

[40] *See, e.g.*, INSURANCE INFO. INST., WORKING TOWARD A FAIRER CIVIL JUSTICE SYSTEM 52-53 (1987) (arguing that public opinion polls show that society is calling for greater control of the costs of the tort liability system).

[41] Indeed, the "public belief" may itself be chimerical. How can we explain the paradox that the people who declare awards to be excessive (sampled as opinion poll respondents) are the same people (sampled as civil jurors) who make those awards?

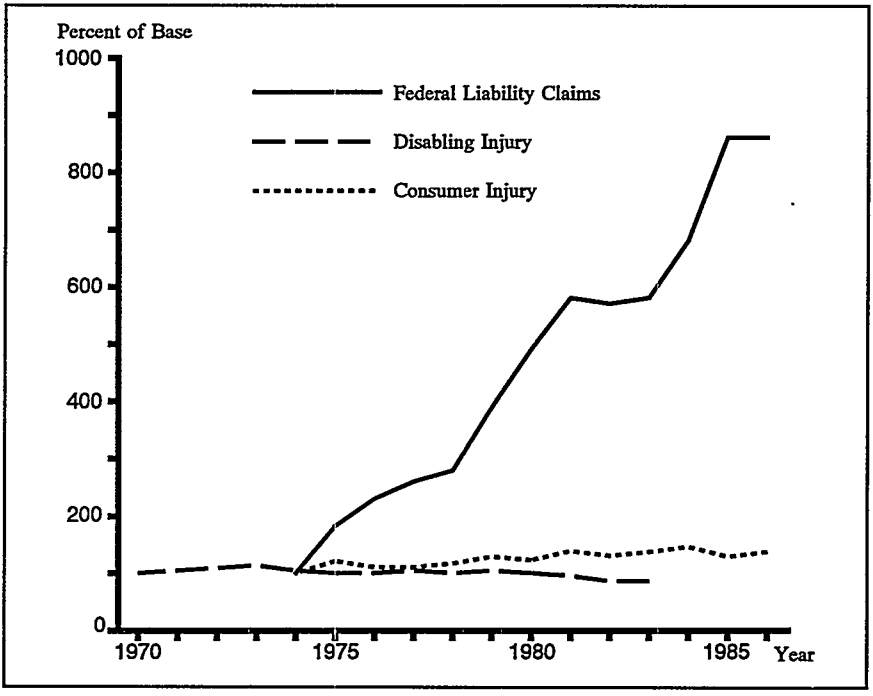
The answer may be found in an analogy to studies of public attitudes toward criminal sentencing. These studies find that when asked whether they think sentences are generally too lenient, about right, or too harsh, a large majority of the public offer the view that they are too lenient. When asked what their own sentencing preference would be, or to evaluate an actual sentence in a case, the same people conclude that the judicially imposed sentences are about right or too harsh. *See* ANTHONY N. DOOB & JULIAN V. ROBERTS, AN ANALYSIS OF THE PUBLIC'S VIEW OF SENTENCING 10-11 (1983); Shari Seidman Diamond, *Revising Images of Public Punitiveness: Sentencing by Lay and Professional English Magistrates*, 15 LAW & SOC. INQUIRY 191, 193 (1990); Anthony N. Doob & Julian V. Roberts, *Public Punitiveness and Public Knowledge of the Facts: Some Canadian Surveys*, *in* PUBLIC ATTITUDES TO SENTENCING: SURVEYS FROM FIVE COUNTRIES 111, 111-13 (Nigel Walker & Mike Hough eds., 1988); Julian V. Roberts & Anthony N. Doob, *News Media Influences on Public Views of Sentencing*, 14 LAW & HUM. BEHAV. 451, 460 (1990); Loretta J. Stalans & Shari Seidman Diamond, *Formation and Change in Lay Evaluations of Criminal Sentencing: Misperception and Discontent*, 14 LAW & HUM. BEHAV. 199, 199-202 (1990). For example, 67% of those surveyed in an Illinois study believed that persons convicted of residential burglary were sentenced too lightly. *See* Stalans & Diamond, *supra*, at 206. When asked what their own sentence for residential burglary would be, only 11% or 26% (depending upon the form of the question) suggested a sentence that exceeded the *minimum* that convicted burglars spend in prison in Illinois. *See id.*

Paradoxically, we may wonder whether the public believes that sentences are too lenient (as they assert) or whether they believe that sentences are too harsh (as they demonstrate). From such findings we might expect that if Harris's survey respondents were presented with information about a representative set of actual cases, they might agree that their juror counterparts made a reasonable assessment of damages,

While factoids seem to be facts but are not, factlets present a different problem. They are true in a literal sense, but they lead directly to conclusions that are not justified by the data.

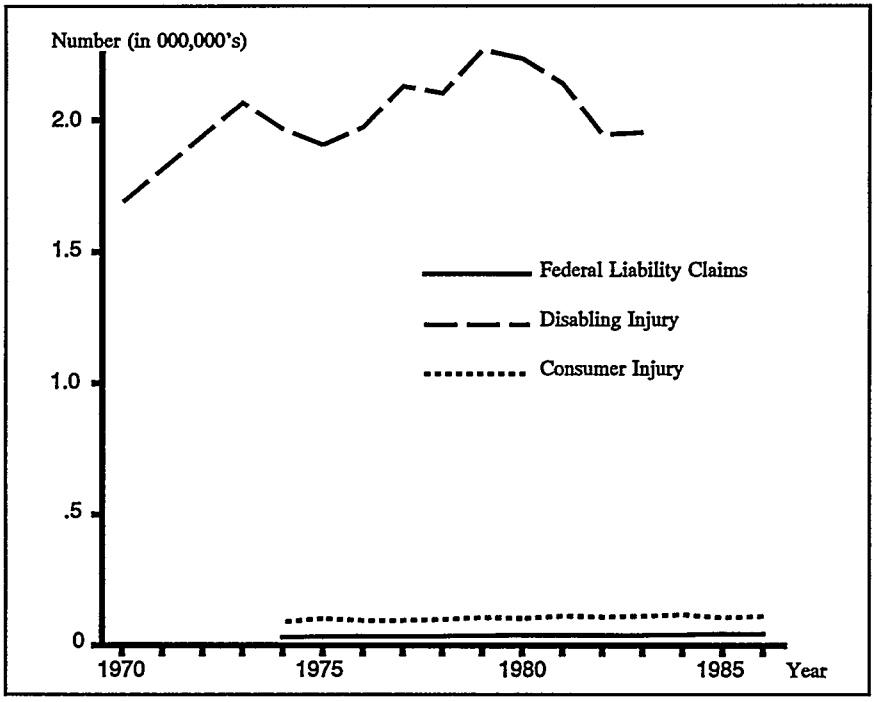
Figures I-A and I-B are alternative ways of presenting the same information. Both depict data on change over time of federal product liability litigation as well as injuries to consumers and workers. But while Figure I-A presents these data as percentages of change from a fixed starting point, Figure I-B presents the same data as simple frequencies.

FIGURE I-A & I-B[42]
PREMIUMS, CLAIMS, & ACCIDENTS (A) AS GROWTH RATES FROM A FIXED STARTING POINT & (B) AS SIMPLE COUNTS



or perhaps opine that the damages were insufficient.

[42] Figure I-A is adapted from George L. Priest, *The Liability Crisis: A Diagnosis*, YALE L. REP., Fall 1987, at 2, 3. Figure I-B is adapted from Michael J. Saks, *Letters to the Editor*, YALE L. REP., Fall 1988, at 14, 15.



Each graph tells us something different about the same data. The first answers the tacit question, "Are the rates of growth of product liability filings and injuries parallel or is one growing faster than the other?" Most people look at Figure I-A and are alarmed at the degree to which lawsuits seem to be outpacing injuries. On reflection, however, what do we really know when we learn about the parallelism (or lack of it) between *growth rates* of injuries and filings? Figure I-A is consistent with the following scenario: Each year every American worker is killed and an equal number of new workers is hired to replace them. Such a scenario makes the marginal growth rate of injuries zero, creating an even flatter line than the ones in Figure I-A. Imagine further that in 1974 exactly two families initiated product liability suits for the loss of their two respective breadwinners, and that in 1985 seventeen filed suit. Thus, filings in 1985 would be 850% as many as there were in 1974,

just as Figure I-A depicts.[43] The same graph would now sound the opposite alarm: too many injuries and too little litigation.

The problem is that expressing these data as rates of growth answers a question other than the one most people implicitly ask about the behavior of the tort system, namely, "How does the number of lawsuits compare with the number of injuries?"[44] If indeed that is the question people ask most about injuries and lawsuits, Figure I-B presents the same data in a way that provides a more straightforward answer. It shows the number of suits to be a thin shadow trailing behind a fat number of injuries.[45] Both graphs are "true," in the sense that they both depict the data with equal accuracy. But the utility of each depends upon the question one wants answered. As an answer to the central question being asked, Figure I-A may misdirect more than it informs.[46]

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[43] Elsewhere in this Article, I calculate growth rates as the *marginal increase* (difference between the old amount and the new) expressed as *a percentage of the original amount*. *See infra* note 154 and accompanying text. That is the customary approach. This one time I follow Priest's lead in calculating growth rates as *the latter amount as a percentage of the original amount*. Priest's idiosyncratic way of doing these calculations transforms zero change into a "100% increase"—if there were 50 cases at time-1 and 50 cases at time-2, time-2 is 100% of time-1. By the more conventional approach, the *increase* is 0%: there are 0% more cases at time-2 than at time-1.

In my hypothetical example, the customary marginal growth rate would come to 750% (17 in 1985 represents a marginal increase of 15 over 2 in 1974, and that marginal increase is 7.5 times greater than 2). But using Priest's method, the growth rate would be 850% (17 divided by 2 yields 8.5). Using the "real" data, the customary marginal growth rate would come to 758% (13,554 in 1985 represents a marginal increase of 11,975 over 1579 in 1974, and that marginal increase is 7.58 times greater than 1579). *See infra* Appendix B. Using Priest's method, the marginal growth rate reaches the elevated rate of 858% (13,554 divided by 1579 yields 8.58).

[44] *See infra* note 46 (discussing the results of an experiment concerning perceptions of tort litigation).

[45] Now, Priest's data could be interpreted to reflect a slight closing of the gap between what the system was supposed to be doing and what little it manages to do.

At this juncture, it may be important to say that both of these graphs are nonsensical in that they imply a comparison between two things that with these data cannot meaningfully be compared. Even if the rate of *these* injuries (totals for selected injury types) is down, the rate of *actionable* injuries (a subgroup of those other injuries) may be up. Most worker and consumer injuries, if they wind up in court at all, wind up in state courts, and contribute little to the level of federal product liability suits. These are the kinds of comparisons that give apples and oranges bad reputations.

When a similar portrayal of Priest's data appeared a few years later in *Fortune* Magazine, the principal change was that the vertical axis had been relabeled from "Percent of Base" to the more cryptic "Index." *See* George L. Priest, *How to Control Liability Costs*, FORTUNE, Apr. 24, 1989, at 323, 323.

[46] In order to test what impressions about the performance of the tort litigation system the two graphs create in the minds of those who view them, I conducted the

The Department of Justice's Tort Policy Working Group (Policy Working Group) noted the same increase in federal product liability cases between 1974-1985 (calculated this time to be up 758%).[47] This calculation stems from the data we have just seen pictured in Figures I-A and I-B. The Policy Working Group took the apparent increase to be both real and representative of the experience throughout the nation: "There is no reason to believe that the states [sic] courts have not witnessed a similar dramatic increase in the number of product liability claims."[48] More complete evidence suggests that the federal situation does not mirror that of the states[49] and that the state situations vary markedly among and within themselves.[50] Thus, real data[51] were applied beyond their proper sphere, because their users could think of "no reason to believe" state court filings might follow a pattern different from that of the federal courts.[52]

The balance of this Article concentrates on data that have more substance than the kinds we have reviewed up to this point.[53] This

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following informal experiment. I asked teachers of two undergraduate business law courses to give one of the graphs to half of their students and the other graph to the other half. The students were asked to examine their graph and then to write on the back of it a brief explanation of what it told them. I then asked two law school secretaries to read each of the statements without looking at the graphs and decide whether the writer seemed to be saying that she or he was seeing evidence of a litigation explosion or the absence of one. Of those who saw Figure I-A, 94% thought they saw in it evidence of a serious litigation explosion (21 out of 23 in one class and 30 out of 31 in the other class). *See* Study Conducted at the University of Iowa (Spring 1988) (data on file with author). Only 13% of the students who saw Figure I-B thought they saw an explosion (5 out of 25 in one class and 2 out of 27 in the other class). *See id.* This is quite a powerful difference in the impact of two different ways of presenting the same information; the 94% to 13% difference is statistically significant at $p<.0001$, using Fisher's Exact Probability Test.

[47] This number represents the percentage increase from 1579 (in 1974) to 13,554 (in 1985) calculated the conventional way. *See supra* note 43 (discussing the conventional method).

[48] TORT POLICY REPORT, *supra* note 27, at 45.

[49] *See infra* notes 188-207 and accompanying text.

[50] *See infra* notes 195-96 and accompanying text.

[51] Real data, however, have certain limitations. Rates of increase in federal product liability filings are highly unstable and vary markedly depending upon the time frame used to calculate them. *See infra* notes 165-86 and accompanying text.

[52] The error is facilitated by the lack of good, complete, and accessible state court data.

[53] Numerous publications on the subject of the tort litigation system consist of nothing more than a mélange of loose conclusions, anecdotes, factoids, and factlets. Those who think they already know the truth are unlikely to invest much effort in the search for answers. For two wonderful examples of such writing and logic, see William H. Mosberg, Jr., *The Liability Insurance Crisis*, 19 NEUROSURGERY 857 (1986),

change of focus is not intended to imply that disposing of uninformative and misleading data is not an important part of the process of informing ourselves about the behavior of the tort litigation system. Indeed, some additional discarding of empirical flotsam and jetsam will occur along the way. The preceding examples, however, should suffice to make the general point, and now we can move on to the more subtle and difficult problems that are the central focus of this Article.

C. *Overview*

This Article reviews the available empirical evidence concerning the behavior of the tort litigation system, including studies pertaining to whether there has been explosive growth in the volume and value of litigation. The evidence and interpretations are organized within a general model of the flow of disputes into and through the system. This approach will examine the system as a system: to see the effects of decisions at one stage on later and earlier stages, and to see the effects on the system of changes both in the system and in the system's external environment.

In this review of the evidence and reflection on its meaning, we will learn (a) that the basic data offer little support for widely held beliefs about the behavior of the system or about the decisionmakers within it and (b) that the basic data are inadequate to provide answers to important questions about the system. Moreover, this analysis will begin (c) to develop the notion of a more *systems*-oriented approach to understanding the behavior of the litigation system that takes into account how the litigation system's output changes not only as a consequence of changes in substantive and procedural rules of law, but also as a reflection of the environment in which it exists and (d) to provide a research agenda for strengthening the knowledge base that supports our understanding of the litigation system.

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and WALTER K. OLSON, THE LITIGATION EXPLOSION: WHAT HAPPENED WHEN AMERICA UNLEASHED THE LAWSUIT (1991).

II. EVIDENCE ABOUT THE BEHAVIOR OF THE TORT LITIGATION SYSTEM AS A SYSTEM

The core of this Article tries to put together what is known about the behavior of the tort litigation system into a coherent model and then use that model to illuminate what is not known. The model used to organize this knowledge (and the gaps in knowledge) is a simple descriptive framework: the flow of cases into and through the litigation process. The very simplicity of the model will place the gaps in knowledge into high relief.

Such an examination might begin by thinking about the simplest of frameworks for assessing how well the tort liability system deals with claims by plaintiffs against defendants. Figure II presents a 2 x 2 matrix into which can be placed data that relate compensation to the actuality of compensable injury.[54] To the extent that the tort system is a compensation system that requires an injurer to compensate the injured under specified circumstances,[55] the system might be expected to deliver compensation when there has been a compensable injury and to deny compensation when there has not been a compensable injury.[56]

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[54] Obviously, a major problem to be solved is measuring the latter variable. It has been solved in a variety of ways, and the reader can judge which of these are more or less adequate. Recall, however, that in giving anecdotes of supposedly unmerited awards and in quoting figures on the allegedly increased number of plaintiff victories and magnitude of plaintiff awards, critics simply assume that some of the outcomes were in error in some way. Why else, they imply, would the data have changed over time? For a discussion of answers, see *infra* notes 435-67 and accompanying text.

[55] The circumstances leading to compensation generally are present when the injurer acts "negligently," or fails to exercise a standard of care associated with the activity that led to the injury. *See* RESTATEMENT (SECOND) OF TORTS §§ 282-283 (1977). In product liability cases the injurer may be held "strictly liable"—negligence is not a requirement, only causation is. *See id.* §§ 519-524A.

[56] The compensation function is the easiest standard by which to evaluate the tort system. Its other major purpose—deterrence—is much harder to evaluate, and the scholarship relevant to that issue is overwhelmingly theoretical. The data of the present Article and the debate over the litigation system are focused largely on the compensation issue.

FIGURE II
BASIC 2 X 2 RELATIONSHIP BETWEEN ACTIONABLE INJURY AND THE LEGAL SYSTEM'S RESPONSE

Actionable Injury?	Compensation Given? YES	Compensation Given? NO
YES	True Positive	False Negative
NO	False Positive	True Negative

The reader might speculate on what Figure II *ought* to look like compared with what it *does in fact* look like. When the cells are filled with data, what will the gap look like between the system's object and its performance? Will the system do a reasonable job of providing compensation to those who have a right to be compensated and denying it to those not entitled to it? Or will the system err by compensating some of those who ought not to be compensated?[57] Or err by failing to compensate some of those who ought to have been compensated?[58]

The basic 2 x 2 model helps to describe how the system ultimately responds to the cases submitted to it. It needs to be made more complicated in at least two ways, however.

First, the model needs to account for the impact of the socio-techno-economic environment of the legal system. Because the litigation system is an "open" system—that is, one that interacts with its environment—we need also to take into account changes in that environment.[59] If the environment is changing rapidly and the system is unchanged except that it is processing changed input from

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[57] Such a scenario is an example of a false positive.

[58] Such a scenario is an example of a false negative.

[59] *See* DANIEL KATZ & ROBERT L. KAHN, THE SOCIAL PSYCHOLOGY OF ORGANIZATIONS 141-42 (2d ed. 1978).

its environment, then measures purporting to reflect the *system's* changes may be doing nothing more than reflecting changes in the system's environment. One cannot understand the behavior of an open system without understanding the environment that envelops it.

To illustrate, suppose tort filings have increased precipitously. Many explanations for the increase are possible. Some come from "within" the litigation system (e.g., changes in the substantive or procedural law). Alternatively, explanations involving the system's *milieu externe* also are possible. An abrupt increase in injuries would give rise to an increase in filings, which in turn would reverberate through the rest of the system. The increase in injuries could result from new technology (e.g., the industrial revolution in the last century or the advent of automobiles early in this century),[60] or organizational and structural changes (e.g., increased access to health care and an enlarged consumer economy would give rise to more actionable injuries).

In short, changes in the surroundings of the legal system that deliver different kinds or numbers of cases to the system's doorstep will produce changes in the numbers of filings and perhaps in trials and awards—without any changes occurring in the litigation system itself. Without measuring and correlating those external changes, the changes they produce in the legal system in *response to* those societal inputs are likely to be mistakenly attributed to changes *in* the litigation system or in the law. Thus, one cannot evaluate the impact of law without adjusting for all of the "extraneous" influences originating in the system's environment.

The second complication to the simple model above is unpacking the path from initial injuries to final dispositions. After an actionable injury occurs, a victim must decide whether or not to complain; lawyers must decide whether or not to accept and file the cases offered to them; a process of negotiation resolves most cases short of trial; an important minority of cases will be resolved by trial; and various post-verdict remedies[61] are available. A parallel

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[60] We have grown accustomed to the approximately 50,000 deaths and 1.75 million injuries produced annually by automobiles, as well as the litigation those accidents generate. *See infra* Appendix A. Virtually all commentators regard these as "normal" or at least level (and, therefore, nothing to worry about).

[61] Judgments notwithstanding the verdict, additur or remittitur adjustments to the award, orders for new trials, and appeals to higher courts (or negotiations in which parties settle in exchange for an agreement not to appeal a verdict) are examples of such post-verdict remedies. How many cases end up as something different from

course is traversed by plaintiffs who have suffered injuries which are not compensable,[62] and these claims must also be processed by the system, and either correctly granted no compensation or mistakenly granted compensation at one or another stage. Therefore, each one of these intermediate steps can be a complicated affair, with complicated decisions being made by numerous people interacting with each other. Each step is worthy of serious attention.[63]

To begin to understand the litigation system better, we need to look at what happens to cases as they are processed through each of these decision stages. Does each decision node reach the "right" result or are there systematic errors that favor plaintiffs or defendants, or favor plaintiffs at some stages and defendants at others? How can changes over time in the numbers of cases appearing at each stage be explained? Does the answer lie in changes in the decision process itself, in the decision-makers, in the rules they are required to apply, or in changes in the socio-techno-economic surroundings within which the litigation system operates?

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their trial verdict is itself an interesting question.

[62] Such injuries are not compensable because they fail to satisfy one or more of the law's liability rules. For example, injuries may not have been the result of negligence or not caused by the defendant. In some cases, a plaintiff may not have suffered an injury cognizable by the law.

[63] I have defined the tort litigation system as extending from the pool of injuries through to the final disposition of a litigated case. One could define the system differently, perhaps by locating its starting point where a victim of injury first demands compensation and the alleged injurer refuses (the dispute has thus been born), when the injury victim first seeks to hire a lawyer (thus bringing the influence of the law and one of its agents to the dispute), or when the lawyer files a case (thereby placing the matter within the jurisdiction of a court).

We should be clear that a change in definition defines a great deal of behavior in or out of "the system" and alters, most likely substantially, some of the inferences to be drawn about "the system." I have chosen a relatively expansive definition because it matches the implicit definition of virtually all commentators, legal and beyond, of virtually all disciplines and persuasions. Commentators from the common law and legal realism traditions to those of law and economics and law and society make reference to the behavior of potential injurers as a function of tort rules.

FIGURE III
STAGES OF THE LITIGATION SYSTEM

	Tortious Injury	
	Present	Absent
Base of actionable injuries		
Decisions to claim		
Prospective cases presented to lawyers		
Lawsuits filed		
Settlements negotiated		
Trials commenced		
for Plaintiff		
Trial Verdict		
for Defendant		
Awards		
Changes from additur/remittitur review		
Appeals		
Compensation paid		

A. *Base Rate of Actionable Injuries*

The first thing to determine is how many actionable injuries occur.[64] Such injuries are what the system seeks to compensate and deter. Any assessment of whether the propensity to sue is increasing, decreasing, or remaining the same can be made only in relation to the waxing or waning of the pool of injuries from which suits properly arise.[65] Any inference about whether the average

[64] The number of actionable injuries really means the ratio of actionable injuries, on the one hand, to non-actionable injuries plus non-injuries involved in some activity. This will become evident shortly, in our discussion of malpractice. We must, after all, think in terms of the base rate in order to make sense of the movement of cases through the system and the decisions made about those cases.

[65] Of course, not all injuries are compensable; but actionable injuries are

size of awards or settlements has gone up, down, or remained level, in real terms, depends upon knowing what the pool of injuries looks like. If the pool of injuries has increased and the inherent seriousness of the injuries or the cost of repairing them has increased, one should not be surprised to find a commensurate increase in cases or awards.[66] If the pool has shrunk either in size or cost of injuries, even a seemingly level number of filings or payments should in real terms be regarded as an increase.

Despite the indispensability of this ingredient to making sense of the behavior of the system, direct consideration of injury base rates is absent from virtually all commentary and analysis of the tort litigation system. Studies and commentaries that deal, for example, only with filings are assuming that the base rate of actionable injuries has remained constant and unchanged. Some effort to take base rates into account is reflected by those studies that have tried to adjust caseloads for population increases. At best, however, that adjustment is a crude one. It assumes that the number and seriousness of injuries per unit population remains constant over time.

It is this base of actionable injuries for which tort law exists, to which it responds, and upon which it is intended to have some effect.[67] But tort law has a far more special relationship with the injury base. Tort law *defines* the base of actionable injuries. In the nineteenth century, the pool of injuries rose with the industrial revolution.[68] Tort law's response was to reduce the pool of *actionable* injuries by introducing restrictions.[69] In the latter half of the twentieth century, the tort rules affecting liability for products and, to a lesser extent, medical accidents, were modified to make more of their associated injuries actionable.[70] By alter-

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necessarily a subset of total injuries. Furthermore, the number of injuries is known imperfectly. With the exception of a few studies to be discussed, *see infra* notes 85-91 and accompanying text, the proportion of those that are actionable is barely known at all. In the absence of such knowledge, it is impossible to defend any assertion about what is happening in the tort system.

[66] Moreover, it would be irrational to blame the victims of the injuries or the liability system for such increases.

[67] Tort law seeks to reduce the number of those accidents, or minimize their costs, or maximize the gross social product, and so on. *See* WILLIAM L. PROSSER ET AL., CASES AND MATERIALS ON TORTS 1 (8th ed. 1988).

[68] *See* LAWRENCE M. FRIEDMAN, A HISTORY OF AMERICAN LAW 261-64 (2d ed. 1985).

[69] These restrictions include the advent of the fellow servant doctrine, contributory negligence, assumption of risk, etc. *See id.* at 262-64.

[70] *See* KEETON ET AL., *supra* note 3, § 96 (tracing the development of the

nately constricting and expanding the base of actionable injuries, the number of filed cases is expected alternately to decline and grow. Indeed, after assuming a litigation explosion, many commentators point to changes in the law as its "explanation."[71]

An obvious first step in an analysis of the impact of tort law is to study the relevant injury base to see how many injuries are or are not brought into the subclass of those for which a defendant is supposed to be judged liable. How do changes in the law map themselves onto that injury pool they are intended to retreat from or embrace? Although legal discussions of tort law invariably make vague references to those pools of medical, products, or auto injuries, no rigorous mapping ever occurs. To do so would permit something akin to a legal impact statement—helping to determine if doctrinal changes are accomplishing their purposes and helping to explain the gaps between expectations and actual behavior of the system.[72]

One reason the assessment of the expected and actual effects of law changes do not occur at the level of the injury base is that knowledge of that base is lacking.[73] To be useful in understanding the role of law, the count of injuries must be more precise in at least two respects. Those counts must be made within categories that match the legal categories of injury—for example, auto,

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negligence-based law of products liability). Concerning medical malpractice, a variety of doctrines that once provided special immunity to physicians gradually eroded. *See id.* § 32, at 187-89, § 40, at 259, § 133 (discussing charitable immunity, locality rule, respondeat superior, application of res ipsa loquitur, and informed consent).

[71] *See, e.g.*, TORT POLICY REPORT, *supra* note 27, at 30-35. The real puzzle is to explain why, in the face of such a reasonable expectation of a doctrinally expanded pool of actionable injuries, the actual growth is so modest. *See infra* notes 79-84 and accompanying text (discussing filings).

[72] It may be, for example, that judges, legislators, or drafters of model codes have guessed incorrectly about the contours of the injury base, and as a result the changes in law have touched only the margins of the pool, failing to affect it in the ways intended, imagined, or feared.

[73] Another reason is that the culture of law does not include rigorous concern for the phenomena to which the law is directed. The contrast is striking between the care with which doctrinal considerations are addressed and the casualness of the treatment of the real world with which those doctrines are concerned. This is a shortcoming in the scholarship and practice of law that a parade of prominent lawyers—from Holmes, to Pound, to Llewellyn, to Bok, to Shuck—has been able to complain of, but which few have been able to do much about. *See* Oliver W. Holmes, *The Path of the Law*, 10 HARV. L. REV. 457, 459-62 (1897); Roscoe Pound, *The Need of a Sociological Jurisprudence*, 19 GREEN BAG 607, 607-09 (1907); Llewellyn, *supra* note 4, at 1223; Bok, *supra* note 1, at 581; Peter H. Schuck, *Why Don't Law Professors Do More Empirical Research?*, 39 J. LEGAL EDUC. 323, 325-33 (1989).

products, workplace, medical, or dramshop. In addition, they must be made within geographic units that at least approximately match the geographic units that matter for legal doctrine (state by state) and for the sociology of the law (for examples, local legal culture[74] or different degrees of urbanization within and between doctrinal regimes).

Although we have a good deal of data on accidents, this information is not collected or organized to fit the legally relevant maps. Far worse, although entirely understandable, separating accidental injuries into those which are tortious and those whose costs must remain with the injury victim is something that is rarely even attempted.[75]

One illustration of how the base rate is essential to making sense of litigation data is provided by considering national accidental death and injury data.[76] The *number* of motor vehicle deaths and injuries peaked around 1970,[77] declined thereafter, and continued to decline, though much less sharply, through the first half of the 1980s. The death and permanent injury *rate* per unit population also declined during that period largely because the population of people increased faster than the number of auto accidents.[78]

In light of this trend, consider the conclusion that *filings* in the auto negligence area in the first half of the 1980s were level when

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[74] Local legal culture refers to systematically different interpretations and applications of law within the same jurisdiction. *See, e.g.*, Stephen N. Subrin, *Federal Rules, Local Rules, and State Rules: Uniformity, Divergence, and Emerging Procedural Patterns*, 137 U. PA. L. REV. 1999, 2038 (1989) (referring to the local legal culture as "the customary practices and expectations of both trial lawyers and judges").

[75] To count emergency room visits or workplace injuries or to conduct household surveys of disabling injuries is one thing. To sort them into those for which the circumstances would allow a finding of liability and those where they would not is an immensely bigger challenge.

[76] National level data on deaths and injuries associated with motor vehicles and the workplace, as well as the total national count of accidents, are presented *infra* in Appendix A. That table is based on data published annually by the National Safety Council. Other collectors of accident data include both government and private agencies--National Center for Health Statistics, National Highway Traffic Safety Administration, Consumer Product Safety Commission, Occupational Safety and Health Administration, insurance companies, and trade associations.

[77] *See* NATIONAL SAFETY COUNCIL, ACCIDENT FACTS 1989, at 14-15 (1989) [hereinafter ACCIDENT FACTS] (noting that the 1970 level approached the all time highs of the 1930s).

[78] The trend reversed in the latter half of the 1980s, with deaths and permanent injuries rising slowly. *See id.* Furthermore, the death and injury *rate* per unit population has not been level, it has been rising, because the population of accidents has been growing faster than the population of people. *See id.*

adjusted for increases in population.[79] If the death and injury rates were down, yet the filing rate was level, then in real terms auto crash filings were actually *up*.

This illustrates that it is not enough to look only at the number of filings and to control for population. When the focus of interest is whether a disproportion exists in the filing rate, it is the base rate of accidents or injuries for which all other controls are proxies. Unless we know that the proxies are accurate (that is, that the number of actionable injuries is proportional to population), then they will not correct the data as we wish them to. As this illustration shows, the growth of population and injuries is not equal; sometimes one grows faster than the other.[80]

But aggregate auto or workplace accident data compared with national level lawsuit filing data may be misleading in any event. That is because aggregations can hide as well as illuminate some relationships. To take an extreme illustration, imagine that in half the states auto accidents are rising while litigation is falling, and in the other half auto accidents are falling while litigation is increasing.[81] These perverse patterns would cry out for inquiry, yet aggregations of auto accident data and auto accident litigation data at the national level would mask these patterns because the declines in some states would offset the rises in other states.[82]

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[79] *See, e.g.*, DEBORAH R. HENSLER, TRENDS IN CALIFORNIA TORT LIABILITY LITIGATION 12 (1987) (explaining that "[t]he rate of increase in automobile accident filings is roughly equal to the rate of population increase, but the rate of increase in other types of lawsuits has outstripped population growth by a considerable amount").

[80] Most victims of motor-vehicle accidents are the young and the old. *See* ACCIDENT FACTS, *supra* note 77, at 6 (showing that those drivers between the ages of 15 and 24 years of age and those 75 years of age and older exhibit the highest death rates). From this it may be inferred that the most accident-prone drivers are the youngest and the oldest drivers. To the extent that the youngest and oldest drivers also constitute the fastest growing age segments of the population, we can anticipate increases in the overall auto mortality rate in the future.

The reasons for those trends are not of much importance for this Article; they merely are the pool from which lawsuits may arise. They provide our starting point. A study of the effects of tort law, of course, would be interested in the reciprocal impact of the number of accidents on the amount of litigation and the amount of litigation on the number of accidents—in short, the contribution of tort law, if any, to keeping accident levels down, or at least at an optimal level (if between 46,000 and 49,000 deaths per year and three times that many permanent injuries can ever be regarded as "optimal").

[81] This scenario is not altogether far fetched. We know that auto accident fatality rates are far from uniform across states. Whether we control for miles driven, number of vehicles, or population, western and sunbelt states have more auto fatalities than midwestern or northeastern states. *See id.* at 64.

[82] A very similar methodological critique was made about data on the deterrent

The number of workplace deaths and injuries are down in both absolute terms and as a population-adjusted rate.[83] How much of this decline can be attributed to the deterrent effects of the tort system, how much to government regulation, how much to the regime of worker's compensation, and how much to changes in managerial or technological culture and practices is interesting and important to know. Something is causing it. Knowledge of what causes desirable changes would be a valuable guide to doing even better through future law reforms. Without such knowledge, reforms are shots in the dark.[84]

The most interesting and legally useful studies of base rates have been done in relation to medical malpractice. In these studies, medical experts[85] evaluate a large sample of hospital records to identify iatrogenic injuries[86] and determine which were negligently produced.[87] The earliest of these was conducted in 1972 by the

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effect of the death penalty. *See* Gregg v. Georgia, 428 U.S. 153, 235 (1976) (Marshall, J., dissenting) ("The aggregation of data from all States . . . obscures the relationship between murder and execution rates. . . . [A] decrease in the execution risk in one State combined with an increase in the murder rate in another State would . . . suggest a deterrent effect that quite obviously would not exist . . . .").

[83] *See* ACCIDENT FACTS, *supra* note 77, at 14-15.

[84] *See supra* notes 5-7, 42-46 and accompanying text. We should now be able to see more clearly the extent and import of the limited overlap between worker injuries and federal product liability filings, and what an apples-to-oranges comparison they constitute. Few worker injuries are product related: 33% result from lifting, throwing, carrying, and pushing or pulling objects, 17% from being struck by falling or flying objects, 19% from falls, and 8% from being struck by or thrown against objects. *See* ACCIDENT FACTS, *supra* note 77, at 39. On the other side of the coin, many product injuries occur outside of the workplace.

[85] People with medical training are one obvious choice of evaluators of the case files. We might note that to the extent that these evaluators in general are inclined to err systematically in these judgments, that error is likely to be in the direction of failing to attribute an injury to practitioner negligence. Thus, these estimates are likely to undercount. The authors of the Harvard Medical Practice Study note that only 1.3% of the judgments were in what the physician judges felt was the close call range. *See* HARVARD MEDICAL PRACTICE STUDY, PATIENTS, DOCTORS, AND LAWYERS: MEDICAL INJURY, MALPRACTICE LITIGATION, AND PATIENT COMPENSATION IN NEW YORK, THE REPORT OF THE HARVARD MEDICAL PRACTICE STUDY TO THE STATE OF NEW YORK 3 (1990) [hereinafter HARVARD MEDICAL PRACTICE STUDY]. Of course, their count will also understate the incidence to the extent that the records deliberately or inadvertently fail to capture instances of negligent care leading to injury, such as with injuries that do not present themselves until some time after the patient leaves the hospital.

[86] Iatrogenic is defined as "[d]enoting an unfavorable response to medical or surgical treatment, induced by the treatment itself." STEDMAN'S MEDICAL DICTIONARY 759 (25th ed. 1990).

[87] They also gather other useful data, such as the type of medical procedure giving rise to the injury, *see* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 6-61, the

then U.S. Department of Health, Education, and Welfare. It found a rate of negligent injury of 218 per 10,000 patients.[88] Perhaps the best known study was conducted jointly by the California Hospital Association and the California Medical Association and published in 1977.[89] This study found that 79 per 10,000 patients had suffered negligent injuries.[90] The most recent such study, conducted in 1990 by researchers based at the Harvard School of Public Health, found that 100 of 10,000 New York hospital discharges suffered from negligent iatrogenic injuries.[91]

If nothing else, studies of the base rate of actionable injuries help to establish that base rates really exist.[92] Beyond that,

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demographics of the injury victim, *see id.* at 6-23 to 6-34, and whether the cases were followed by a claim for compensation, *see id.* at 7-1 to 7-43. This information will be of use later in this Article.

[88] *See* LEON S. POCINCKI ET AL., THE INCIDENCE OF IATROGENIC INJURIES 50, 55 (1973) (report prepared under contract with the Secretary's Commission on Medical Malpractice, U.S. Department of Health, Education, and Welfare). This translates to about one actionable injury for every 46 patients. The report also states: "[I]t has been found that 7.5% of the records show evidence of iatrogenic injury. *Several factors indicate that this number significantly underestimates the true rate.*" *Id.* at 63.

[89] CALIFORNIA MEDICAL ASS'N & CAL. HOSP. ASS'N, REPORT ON THE MEDICAL INSURANCE FEASIBILITY STUDY (Don H. Mills ed., 1977) [hereinafter CALIFORNIA MEDICAL ASSOCIATION].

[90] *See id.* at 103-06. This translates into about one for every 127 patients. These results flow from the following findings: Out of 3,011,000 hospitalizations in 1974, there were 140,000 "potentially compensable events." Of these, 23,800 were determined to have been the result of medical errors or other actionable negligence. *See id.*

[91] *See* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 3. The study reaches the above conclusion utilizing the following calculations:

> Weighting these figures [the negligent injuries found among the 30,121 cases sampled and analyzed] according to the sample plan, we estimated the incidence of adverse events for hospitalizations in New York [State] in 1984 to be 3.7%, or a total of 98,609. Of these, 27.6%, 27,179 cases, or 1% of all hospital discharges, were due to negligence.
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> . . . .
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> The majority of adverse events (57%) resulted in minimal and transient disability, but 14% of patients died at least in part as a result of their adverse event, and in another 9% the resultant disability lasted longer than 6 months. . . . [A]bout 2,500 cases of permanent total disability resulted from medical injury in New York Hospitals in 1984.

Id. at 3-4.

[92] Knowledge of these studies seems to evaporate somewhere between the medical journals and the public and legislative debates. For example, a book by surgeon Albert Ferguson discusses the "causes of suits." *See* ALBERT B. FERGUSON, THE LIABILITY CRISIS AND HOW TO SOLVE IT 103-08 (1987). Ferguson mentions poor communication, careless remarks, the patient's needs due to economic loss resulting from injury, greed, and patients and lawyers looking for a "fall guy" as possible

complications grow. One might be tempted to infer from these studies that negligent medical injuries dropped sharply during the 1970s but by the mid-1980s had turned upward again. But the differences may instead reflect differences in region, the nature of the medical records, or the definitions and procedures of those doing the studies. In the long term, we need to have consistent definitions and procedures and to gather data from the same places at regular intervals if we are to make sense of trends in the injury-producing behavior, not to mention the relation of the law's response to those injuries.

Injury base rate data are more useful for understanding the litigation system than studies focused on products (which may show, for example, that they are designed to be safer and are in fact less likely to cause injuries) or on the nature of services (which may show, for example, that medical knowledge is greater and medical technology and the management of care are more safe and effective). It does not necessarily follow that safer products and more effective and cautiously provided services will lead to fewer injuries, which in turn ought to lead to fewer claims for compensation. Increased safety of each product over time may be more than offset by increases in the number of units of the product in the environment.[93] Moreover, increases in the power of newer technology may offset other changes designed to increase safety.

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reasons for lawsuits. *See id.* But Ferguson cannot bring himself to mention the incidence of negligent iatrogenic injury.

In fact, considerable research documents the incidence of injuries that could lead to medical malpractice suits. For example, a study of 220 obstetric malpractice claims filed with St. Paul Mutual Insurance Company observed that "these cases contain common easily identified obstetric risk factors, most of which occurred in labor or delivery." Thomas M. Julian et al., *Investigation of Obstetric Malpractice Closed Claims: Profile of Event*, 2 AM. J. PERINATOLOGY 320, 320 (1985). Of 1001 risks identified by the reviewing panel, only 32% had been managed correctly even though 54% had been recognized by the defendants. *See id.* at 321. Sixty-six percent of the risk factors were directly involved in the claims brought. *See id.*

Another body of research inquires into the proportion of surgical treatments that were given unnecessarily. For example, one study found that only 56% of patients who received coronary artery bypass surgery needed it. *See* Constance M. Winslow et al., *The Appropriateness of Performing Coronary Artery Bypass Surgery*, 260 JAMA 505, 505 (1988). Presumably the other 44% of these patients had a valid cause of action, but were unlikely to learn of it. (The category of unnecessary treatments may differ from garden variety malpractice in that it may include cases of fraud and deliberate torts. This category may be a far more serious problem that attracts virtually no attention outside of medical research circles.)

[93] Recall the data on the harm done by clothing versus the harm done by chainsaws. *See supra* note 9.

Similarly, improvements in medical care might be responsible for an increasing incidence of negligent injuries. For example, all else remaining equal, increasing access to health care would increase the total number of people who would suffer negligent iatrogenic injuries.[94] If medical care has been reorganized to become more efficient so that a single doctor can see many more patients in a day than a doctor could a generation ago, even if all else remained equal, the contemporary doctor should expect to cause more negligent injuries, in proportion to the increase in patients treated.[95] As the population ages, the need for and rate of encounters with medical care increase and, with this increase in encounters, the rate of actionable injury would be expected to increase.[96] The effect of a "graying population" is compounded by the fact that older patients are more likely to suffer negligent iatrogenic injury.[97]

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[94] Consider the decade preceding the announcement of the litigation crisis: The number of persons enrolled in medicare rose from 25 million to 31.1 million between 1975 and 1985, an increase of 24%. *See* SOURCEBOOK OF HEALTH INSURANCE DATA 32 tbl. 4.1 (1989). Those with private major medical coverage went from 134 million in 1975 to 163 million in 1985, a 21% increase. *See* SOURCEBOOK OF HEALTH INSURANCE DATA 5 tbl. 1.3 (1988). The number of physicians per 100,000 population went up 27%, from 187 in 1975 to 237 in 1985. *See* BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES 101 tbl. 154 (110th ed. 1990) [hereinafter STATISTICAL ABSTRACT]. A proportionate increase in the number of medical malpractice injuries and consequent lawsuits should not be a surprise. Danzon found that increases in the number of physicians (especially the proportion who were surgeons) and increases in the number of surgical procedures per capita led to a higher frequency and severity of malpractice litigation. *See* DANZON, *supra* note 6, at 72.

[95] Doctors sometimes compare the contemporary experience with malpractice against that of doctors 20 or 30 or more years ago, as if nothing has changed in the delivery of medical care except tort law. While some of the special protections tort law once accorded health care have been removed (for example, the locality rule and charitable immunity), there may also be other causes of increases in malpractice and malpractice claims over time that are equally or more understandable; one does not have to posit a growing incompetence of physicians or sinister changes in the law in order to theorize about changes in the incidence of malpractice claims.

[96] In the period from 1975 to 1985, the population over age 65 grew from 22.696 million to 28.540 million, a 26% increase. *See* STATISTICAL ABSTRACT, *supra* note 94, at 13 tbl. 13.

[97] *See* CALIFORNIA MEDICAL ASSOCIATION, *supra* note 89, at 51-52. The monotonic increase with age is patent. In the California Medical Association study, those aged 0-19 years suffered 22.03 iatrogenic injuries per 1000 hospital admissions; those aged 20-39 suffered 42.44; those aged 40-59 suffered 55.31; those over 60 suffered 68.85. *See id.* at 44 tbl. 4, 52 tbl. 52. The Harvard Medical Practice Study found the same monotonic relationship, even after controlling statistically for the riskiness of the required treatment. *See* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 6-24 to 6-26.

More subtly, we might realize that as more treatments become available for more conditions, and patients are exposed to more procedures, they simultaneously receive both the potential benefits of treatment as well as the associated risks of harm.[98] Even more subtly, the growth of knowledge about treatment moves more and more cases into the zone of potentially negligent injury. The growth of knowledge about how to do something right by definition means more opportunities for doing something "wrong."[99] Harms that previously were not "negligent" potentially become so today.[100] If this analysis is correct, then the more advances in medicine the more potential malpractice there will be, by a process of redefinition of what is unavoidable or untreatable versus what is actionable error. In a way that only seems paradoxical, more medical malpractice might signal improvements in health care and access to it.[101]

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[98] Advances in procedures and technology may increase the risk of iatrogenic injury. *See* LOUIS E. LANDER, DEFECTIVE MEDICINE: RISK, ANGER, AND THE MALPRACTICE CRISIS 34-56 (1978). Where increased risk exposure is not warranted by increased benefits, a procedure fails the Learned Hand test for negligence. *See* United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).

[99] *See* Mark F. Grady, *Why Are People Negligent? Technology, Nondurable Precautions, and the Medical Malpractice Explosion*, 82 NW. U. L. REV. 293, 293 (1988) (explaining that "[a]dvances in technology can easily cause corresponding increases in the number of negligence claims"). Grady argues that:

> The very effectiveness of new medical technology increases potential liability, because it creates the possibility that someone will negligently deprive the patient of what is now a substantial benefit. Moreover, in modern times, actual liability can also be more frequent. While older medical procedures probably required less physician advertence, the modern patient may be connected to a heart monitor, a brain scanner, a blood-gas analyzer, and a respiration eavesdropper, giving [the physician] twenty-seven interacting dials and a tremendous need for advertence. Negligence—trespass on the case—increases because these machines round up the mustang risks of disease and domesticate them. Once technology tames disease, there can be relentless legal problems if [the physician] momentarily forgets what he is doing.

Id. at 294-95.

[100] Obstetrics is one example. With the advent of techniques for testing, monitoring, and treating illness *in utero*, obstetricians who a generation ago could only wait to see if health problems existed, today can commit errors well before delivery by failing to detect the condition, choosing the wrong treatment for it, or applying the correct treatment in a mistaken and harmful way. A study of closed obstetric malpractice claims in the files of the leading medical malpractice insurer, St. Paul Mutual Insurance Company, concluded that two thirds of the cases clearly involved conditions that the attending physician ought to have been able to manage properly. *See* Julian et al., *supra* note 92, at 323.

[101] This may explain the tension between doctors, who correctly believe that they

In order to assess the correlation between actionable injuries and malpractice claims for those injuries, we need to acquire data on the base rate of injuries and responses to those injuries by those who suffer them and by the law.

B. *The Decision to Claim*

One of the most remarkable features of the tort system is how few plaintiffs there are. A great many potential plaintiffs are never heard from by the injurers or their insurers. The first and most dramatic step in this process of nonsuits is the failure of so many of the injury victims to take measures to obtain compensation from those who injured them.[102]

By comparing the cases determined to be instances of negligent injury with insurance company records, the study of California medical malpractice found that at most only 10% of negligently injured patients sought compensation for their injuries.[103] Even for those who suffered major, permanent injuries (the group with the highest probability of seeking compensation) only one in six filed.[104] The earlier Health, Education, and Welfare study found that only 6% of those negligently injured filed claims.[105] The Harvard Medical Practice Study found that in New York State "eight times as many patients suffer an injury from medical negligence as there are malpractice claims. Because only about half the claimants

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are doing a better job, and plaintiffs' lawyers (and judges and juries) who, also correctly, see more cases of negligent iatrogenic injury. On these numbers it is possible to claim either that medical malpractice is rampant (data indicating hundreds of thousands of cases throughout the land) or that medical malpractice is infrequent (data suggesting only about 1% of patients suffer negligent iatrogenic injuries). It may also suggest the need to rethink tort liability in a way that takes into account this seemingly paradoxical source of the liability.

[102] The empirical basis of this will be developed shortly. Meanwhile, compare the view of an insurance executive: "An entitlement psychology has become deeply rooted in American Society. This encourages adversarial proceedings and a feeling that every wrong, no matter how it is defined, should be put right by someone." William F. Jones, *Reforming the Civil Justice System*, RISK MGMT., May 1986, at 50, 51-52.

[103] *See* CALIFORNIA MEDICAL ASSOCIATION, *supra* note 89, at 101; *see also* Patricia M. Danzon, *The Frequency and Severity of Malpractice Claims: New Evidence*, LAW & CONTEMP. PROBS., Spring 1986, at 57, 68 (noting that this ratio has doubled to one in five since the mid-1970s); Zuckerman et al., *supra* note 11, at 95 (noting that Danzon's study of California hospitals found that only 10% of injured patients filed malpractice suits).

[104] *See* CALIFORNIA MEDICAL ASSOCIATION, *supra* note 89, at 101.

[105] *See* POCINCKI ET AL., *supra* note 88, at 50.

receive compensation, there are about sixteen times as many patients who suffer an injury from negligence as there are persons who receive compensation through the tort system."[106]

Such findings are not unusual. A major study of a wide range of types of civil litigation (not just torts) found that of every one thousand grievances (events for which an injury was noticed), 718 became claims (the victim brought the problem to the alleged harmdoer's attention), 449 became disputes (the complainant and the alleged harmdoer failed to reach an agreement on the matter), 103 were brought to the attention of a lawyer, and 50 became filed cases.[107] Thus, only 10% of grievances came to the attention of lawyers, and only 5% became filed cases.

Except for post-divorce disputes, torts become litigation more frequently than other kinds of problems.[108] As a percentage of disputes that become litigation, 18.7% of tortious injuries are litigated, compared to about 11% of all other types of disputes.[109] Much of this difference may be accounted for by auto accidents, which are frequent,[110] and routinely viewed as a matter for resolution by insurers and lawyers.[111]

The Rand Corporation's study of people's responses to disabling injury found that of every one hundred injured, eighty-one decided to take no action at all.[112] Of the nineteen who considered making some sort of claim for compensation, two dealt directly with the injurer, four with the insurer, and seven consulted a lawyer (of whom four engaged the lawyer but only two filed suit); six did

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[106] HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 7-1.

[107] *See* Richard E. Miller & Austin Sarat, *Grievances, Claims, and Disputes: Assessing the Adversary Culture*, 15 LAW & SOC'Y REV. 525, 544 (1980-81); *see also* 1 DAVID M. TRUBEK ET AL., CIVIL LITIGATION RESEARCH PROJECT: FINAL REPORT S-18 to S-20 (1983) [hereinafter CIVIL LITIGATION RESEARCH PROJECT] (discussing the "dispute pyramid"); William L.F. Felstiner et al., *The Emergence and Transformation of Disputes: Naming, Blaming, Claiming . . .*, 15 LAW & SOC'Y REV. 631 (1980-81) (studying the process by which injurious experiences become perceived, grievances, and ultimately disputes); David M. Trubek et al., *The Costs of Ordinary Litigation*, 31 UCLA L. REV. 72, 86-87 (1983) (discussing the frequency of litigation with a "dispute pyramid").

[108] *See* TRUBEK ET AL., *supra* note 107, at 87.

[109] *See id.*

[110] Auto accidents cause 18% of all injuries. *See* DEBORAH R. HENSLER ET AL., COMPENSATION FOR ACCIDENTAL INJURIES IN THE UNITED STATES 31 (1991) [hereinafter COMPENSATION FOR ACCIDENTAL INJURIES].

[111] For example, from 1980-1984, 55% of tort trials in Cook County, Illinois were auto accident cases. *See* MARK A. PETERSON, CIVIL JURIES IN THE 1980S: TRENDS IN JURY TRIALS AND VERDICTS IN CALIFORNIA AND COOK COUNTY, ILLINOIS 13 (1987).

[112] *See* COMPENSATION FOR ACCIDENTAL INJURIES, *supra* note 110, at 122.

nothing.[113] Thus, 87% are not heard from by the injurer or insurer, and only 2% become filed lawsuits.[114]

Taken together, all of these studies suggest that, at the outset of the litigation process, a large number of potential plaintiffs with valid claims never initiate a claim and thereby become instant false negatives. Defendants are protected from the majority of those they injure by the simple fact that victims tend not to complain. Note, however, that when the number of claims brought is proportionately so small, even a modest increase in claims is perceived by both defendants and the courts as a huge increase. For example, if the proportion of negligently injured patients who filed claims rose from 4% to 8%, this would double the number of claims, costs of litigation, and compensation paid by defendants and their insurers. Under such a scenario, the litigation glass may still be 92% empty, but it is twice as full as it had been.

If they are not suing those who injured them, what are they doing? A study that examined how patients dealt with medical care they deemed to be seriously unsatisfactory found that 26% did nothing, 46% changed doctors, 25% complained to their doctor directly, and 9% contacted lawyers although none of them ultimately filed suits.[115] Even those who complain rarely file a claim for

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[113] *See id.*

[114] These figures vary considerably when disaggregated by type of injury. For auto accidents, 65-85% of the injured claim, though only 26-31% sue. *See id.* at 116. In medical malpractice, about 10% elect to claim. *See id.* Interestingly, auto accidents, the area with the highest claiming rate, has aroused the least controversy or concern.

[115] *See* Marlynn L. May & Daniel B. Stengel, *Who Sues Their Doctors? How Patients Handle Medical Grievances*, 24 LAW & SOC'Y REV. 105, 108 (1990). These data come from a sample of 1706 people contacted by random telephone sampling from two different cities, of whom 198 felt they had experienced unsatisfactory medical care and of whom 175 agreed to be interviewed. None of these had filed suit. In order to find patients who *had* sued (so as to compare the two groups), May and Stengel had to draw a separate sample from among those who had filed complaints with the state's patient compensation panel. *See id.* at 106. Moreover, Danzon found that when hospital patients sue, 85% of these suits "involve a new abnormal condition rather than an imperfect resolution of the original condition for which health care was sought." DANZON, *supra* note 6, at 26.

Compare these data on patient behavior to speculations such as that offered by Dr. James H. Sammons, executive vice-president of the American Medical Association, who suggests that any patient who is not made perfect is inclined to sue: "There's a mindset in this country now that every single thing should turn out 100 percent right every single time." Joel Brinkley, *Physicians Have an Image Problem–It's Too Good*, N.Y. TIMES, Feb. 10, 1985, at E6.

Obstetricians have been heard to complain that anyone who has an imperfect baby wants to sue. We can begin to appreciate the exaggerated nature of these assertions by considering that in 1983, if one obstetrician in six faced a claim, this

damages. A study of the Ohio Board of Medical Licensure and Discipline, for example, found that only 1% of complainants proceeded to file lawsuits.[116]

Most commentary, however, focuses on the injury victims who sue and asks what it could be that leads them to do so.[117] Overlooked is the far larger group of injury victims who have legally cognizable claims but nevertheless choose to bear the costs themselves rather than seek to shift them to those who caused the injury. The more challenging question might be: What explains why so many people who have suffered actionable injuries do not seek compensation?

One study of medical malpractice counted the incidence of state claims per one thousand persons and found higher rates of claiming where there was more surgery, higher personal incomes, lower lawyer earnings, and state laws that both extended the statute of limitations (by way of injury discovery rules) and required a high

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leads to no more than 5000 cases. *See* Randall R. Bovbjerg, *Medical Malpractice on Trial: Quality of Care Is the Important Standard*, LAW & CONTEMP. PROBS., Spring 1986, at 321, 333 n.52. Infant mortality in 1983 was about 40,000. *See id.* In a far larger number of live births (perhaps as many as three times the infant mortality rate) significant malformations will be detectable within the first two weeks of life. *See id.* Thus, there were at least 32 times as many extremely disappointed new parents as there were obstetric malpractice suits.

The notion that patients' unrealistic expectations lead to disappointment and disappointment to lawsuits is not new. One of a series of articles on medical malpractice litigation, published in the Journal of the American Medical Association in 1941, warned that "[t]here has been a vast increase in these cases since 1900" and concluded that the increase was due in part to "[i]ncreasing expectations directed toward physicians as medical standards advance and the public becomes informed of what is medically possible." Hubert W. Smith, *Legal Responsibility for Medical Malpractice*, 116 JAMA 2670, 2673 (1941).

[116] *See* Timothy Jost et al., Consumers, Complaints, and Professional Discipline (1991) (unpublished manuscript, on file with author).

[117] *See, e.g.*, Brinkley, *supra* note 115, at E6 (noting that malpractice suits have escalated because "Americans think that any injury can be repaired and any disease cured"); John H. Lavin, *Which Patients Are Most Likely to Sue?*, MED. ECON., Jan. 9, 1984, at 107B (discussing nine criteria developed by a major malpractice insurance company for determining which patients are more likely to file a lawsuit); James B. Stewart, *Seeking Justice: People Prone to Sue Have Many Reasons, and Money is But One*, WALL ST. J., May 20, 1986, at 1. Stewart notes:

> Sociologists and economists offer a wide range of theories to explain why Americans sue. They often cite individualism, which lawsuits are a way of expressing; rising narcissism, which increases the inclination to blame someone else; and urbanization (It's easier to sue strangers in a big city than friends in a small town). Expanding theories of liability, the abundance of lawyers and the prospect of large jury verdicts also get frequent mention.

Id.

standard of informed consent.[118] Another study found the strongest correlation between malpractice claims and urbanization.[119] Interestingly, the number of lawyers, the age of the population, and recent reforms of legal rules were found to make no difference in the number of claims filed.[120]

TABLE I[121]
RATIO OF MALPRACTICE CLAIMS TO NEGLIGENT INJURIES, BY SEVERITY

Severity	Total Claims	Paid Claims
1	0.057	0.023
2	0.076	0.081
3	0.082	0.028
4	0.150	0.052
5	0.170	0.065
6	0.130	0.050
7	0.110	0.037
8	0.058	0.020
Total	0.100	0.039

As Table I reveals, the degree of injury appears to make quite a difference. Moderately to seriously injured malpractice victims were between two and three times more likely to file malpractice suits than families of those who died from negligent injuries.[122]

Part of a landmark British study of injury and illness included inquiry into the explanation for people's responses to those disabling conditions.[123] That research found that the average

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[118] *See* Roger Feldman, *The Determinants of Medical Malpractice Incidents: Theory of Contingency Fees and Empirical Evidence*, 7 ATLANTIC ECON. J. 59, 62 (1979).

[119] *See* DANZON, *supra* note 6, at 74-75.

[120] *See id.* at 74-75, 82-83.

[121] The data for Table I come from DANZON, *supra* note 6, at 23 tbl. 2.4. Severity index: 1 = Minor Temporary Disability: not exceeding 30 days and not requiring surgery; 2 = Minor Temporary Disability: not exceeding 30 days but requiring surgery; 3 = Major Temporary Disability: lasting more than 30 days but no longer than 2 years; 4 = Minor Permanent Partial Disability: most functionally nondisabling disabilities; 5 = Major Permanent Partial Disability: substantial damage, but not sufficient to cause complete loss of ability to perform most ordinary functions; 6 = Major Permanent Total Disability: substantial damage, usually sufficient to alter patient's life-style into a dependent position; 7 = Grave Permanent Total Disability: complete dependence or short-term fatal prognosis; 8 = Death. *See id.* at 21 tbl. 2.1.

[122] *See* CALIFORNIA MEDICAL ASSOCIATION, *supra* note 89, at 100.

[123] *See* Sally Lloyd-Bostock, *Fault and Liability for Accidents: The Accident Victim's*

Briton does not attribute responsibility in the way the law does.[124] In the attributional perceptions of the layperson, fewer incidents are perceived as appropriate occasions for assigning responsibility to the injurer than would be cognized by tort law. The American replication of that research found that for most work-related injuries, it never occurs to most people to blame their injury on the manufacturer who could have made the product safer for reasonably foreseeable uses.[125] Those injured assumed they should have used the product with more care.[126] Medical malpractice injuries present the greatest ambiguity. While most other sources of injury result from something that clearly is not in the normal course of events, medical interventions performed with due care can result in further injury, and patients are well aware of this.[127] Medical malpractice injuries present victims with difficulty in figuring out whether the injury was due to medical malpractice (or was instead an unavoidable or predictable risk of treatment).[128]

Another reason for the relatively low rates of claims is ignorance—many injury victims do not realize they have a claim or do not know the procedure for hiring a lawyer and filing a claim.[129]

Perspective, in DONALD HARRIS ET AL., COMPENSATION AND SUPPORT FOR ILLNESS AND INJURY 139 (1984).

[124] *See id.* at 160 (noting "several important ways in which responses of victims are in conflict with the general rationale of the tort system").

[125] *See* COMPENSATION FOR ACCIDENTAL INJURIES, *supra* note 110, at 156-57.

[126] Interestingly, much of the rhetoric of the liability crisis suggests that the contrary is true. Perhaps that is because defendants and insurers see or talk only to those who enter the system. The majority, who do not claim, are invisible to those who look only at the system several steps further along in the process. A follow-up study to the Rand study mentioned above, *see* COMPENSATION FOR ACCIDENTAL INJURIES, *supra* note 110, will try to find out if the process of asking people whether they considered claiming led to an increase in claims filed. *See* Deborah R. Hensler, A Panel Study Analysis of Claiming Behavior (Feb. 10, 1988) (research proposal submitted to and funded by the National Science Foundation).

[127] Recall that three-fourths of iatrogenic injuries are considered to be the result of something other than negligence. *See* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 6-48. Thus, negligently injured patients ought to be, and are, the victims of tortious injury most hesitant to sue. In addition, medical malpractice claims filed ought to include the highest ratio of false positives to true positives. *See infra* notes 148-51 and accompanying text.

[128] *See* Marlynn L. May, Aggrieved Patients' Journeys to Justice: Self-Help Networks Among Suers and Non-Suers (June 26-29, 1991) (unpublished paper presented at the joint meeting of the Law and Society Association and the Research Committee on the Sociology of Law of the International Sociological Association, on file with author).

[129] *See, e.g.*, Bruce Campbell & Susette M. Talarico, *Access to Legal Services: Examining Common Assumptions*, 66 JUDICATURE 313 (1983) (providing a general

Presumably this lack of knowledge has been reduced somewhat by the relaxation of restraints on legal advertising and the wider marketing of legal services.

Another reason for these low filing rates may be that victims conduct an intuitive cost-benefit analysis of filing a lawsuit, including not only the dollar costs involved but the costs in time and stress associated with a suit. These costs may include stigma associated with the act of asserting a complaint, keeping the memory of the injury or loss alive, or continued confrontation with the injurer, a distressing prospect for most victims.[130]

A system that requires victims to initiate claims and puts them through a complex process before compensation can be paid will have far fewer claims filed than a system that reduces these barriers. Consequently, defendant groups who would like to experiment with no-fault or other types of administrative systems fear that a major cost of administrative expediency will be an increase in claims filed.[131] They worry that the number of currently litigated cases constitutes only the tip of the injury iceberg and that in exchange for whatever they are trying to avoid, they almost certainly will see many more cases than they have experienced in the past. For some areas of litigation, a quintupling of cases would not be unexpected.[132]

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discussion of the lack of access to or underutilization of legal services); Jerome E. Carlin et al., *Civil Justice and the Poor: Issues for Sociological Research*, 1 LAW & SOC'Y REV. 9, 58-59 (1966) (finding a "slight tendency" for pro bono services to be utilized by those with higher incomes and more education than those with lower income and education levels); Elliot E. Cheatham, *A Lawyer When Needed: Legal Service for the Middle Classes*, 63 COLUM. L. REV. 973, 973 (1963) (explaining why the expanding middle class is not receiving in proportionate measures the legal services they need).

[130] Something is required to overcome the costs of claiming. Sometimes it is the presence of substantial injuries and the resulting costs to the victim. *See* Miller & Sarat, *supra* note 107, at 540-41. Sometimes it is that the injurer has added insult to the injury by not responding to the problem seriously. *See, e.g.*, RANDALL P. BEZANSON ET AL., LIBEL LAW AND THE PRESS: MYTH AND REALITY 83 (1987) (noting that, in the context of allegedly libelous activity by the press, 88% of plaintiffs specifically requesting the media to take remedial action credited the media's response (or non-response) as a factor in their decision to sue).

[131] *See* SPECIALTY SOC'Y MEDICAL LIAB. PROJECT, AMA, A PROPOSED ALTERNATIVE TO THE CIVIL JUSTICE SYSTEM FOR RESOLVING MEDICAL LIABILITY DISPUTES: A FAULT-BASED, ADMINISTRATIVE SYSTEM (1988).

[132] If many patients currently do not file claims because of affection or respect for their erring physicians, or as a result of their own or a lawyer's cost-benefit analysis, all these barriers will recede when claims are allowed to be filed with some sort of impersonal and routinized compensation agency, somewhat like filling out one's health insurance forms. On this reasoning, the California Medical Association study cautioned against a no-fault system for medical malpractice. *See* CALIFORNIA MEDICAL

C. *Attorney Decision to Accept Case*

Even those victims who wish to press their claims cannot realistically do so unless a lawyer agrees to handle their case, and lawyers usually do not accept a case unless they see an acceptable probability of economic success for themselves in doing so. This selective acceptance further reduces the number of actionable injuries that become litigated cases.

What determines an attorney's decision to accept a case is another of the more neglected questions in a system that suffers from a lack of hard data at nearly every stage. A 1973 study by the U.S. Department of Health, Education, and Welfare (HEW) found that a large percentage of cases brought to attorneys was rejected by them and not filed.[133] The Civil Litigation Research Project found that only half the complaints brought to a lawyer became filed cases.[134] At an extreme is a report of one New York City law firm that earns 15% of its business from personal injury cases against the city.[135] The firm rejects any case that is expected to yield awards of less than $50,000.[136] Of 2500 medical malpractice complaints offered to the firm in one year, it accepted only forty.[137] Clearly, lawyers engage in some filtering of cases and turn away a large number of them.[138]

ASSOCIATION, *supra* note 89, at 105. The findings of the Harvard Medical Practice Study suggest this option might be placed back on the table for consideration. *See* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 11-6 to 11-8.

Even physicians may not really be aiming to trade away the costs they and their spokespersons usually talk about. They may be willing to incur greater dollar costs if in exchange they free themselves from the need to submit to the legal process. In one study of physicians who had been sued for malpractice, 22% found it to be the single most traumatic experience of their lives. *See* Sara C. Charles et al., *Appraisal of the Event as a Factor in Coping with Malpractice Litigation*, 14 BEHAV. MED. 148, 148 (1988).

[133] *See* POGINCKI ET AL., *supra* note 88, at 50.

[134] *See* CIVIL LITIGATION RESEARCH PROJECT, *supra* note 107, at S-19.

[135] *See* Patricia B. Gray, *City's Nemesis: Lawyer Harry Lipsig Makes a Killing Suing People of New York*, WALL ST. J., Mar. 16, 1988, at 1.

[136] *See id.*

[137] *See id.* at 16.

[138] A study of anesthesiology malpractice claims found that of 1004 filed lawsuits, in which evaluations of injury severity could be made in 869, the median level of injury was *major permanent disability* and the modal injury was *death*. *See* Frederick W. Cheney et al., *Standard of Care and Anesthesia Liability*, 261 JAMA 1599, 1601 (1989). Why did the claims involve such severe injuries? Where had the great bulk of cases with lower levels of injury gone? No doubt many were simply lumped by the injured patients. But of those brought to lawyers for filing as suits, many no doubt were rejected by the lawyers as insufficiently serious to warrant bringing a claim, even if

Attorneys may turn cases away for a variety of reasons. The plaintiff may be thought to be too unsympathetic or unappealing to juries, the evidence may contain ambiguities, or the attorney may lack the needed experts or expertise. For the present discussion, I shall concentrate on the basic economics of legal practice.

An attorney's cases may be thought of as a portfolio of investments. Economically rational investors seek profitable returns from their investments.[139] For plaintiffs' lawyers, the risk exists of investing time and out-of-pocket expenses on cases that may not produce adequate returns, or any returns at all. Presumably, plaintiffs' attorneys prefer cases with the clearest evidence of liability and the largest damages. They will avoid cases with weak evidence of liability or only a small margin between the cost of litigating the case (the value of the attorney's time and the opportunity cost of taking the case) and the expected fee from the case.[140]

If the projected cost to a lawyer of litigating a case to a judgment is X dollars, in order for the attorney to break even, the expected award or settlement, discounted by the probability of success at trial, must be three times X ($3X$), if the lawyer's fee is one third of the award. The attorney will then add to that $3X$ the profit margin he requires. Injuries below this final amount are, therefore, unlikely to become litigated cases.

Assuming lawyers evaluate cases using a model approximated by this description, several implications for the litigation process emerge. First, the more selectively plaintiffs' lawyers choose the cases they will take, the more cases will be resolved in the plaintiffs' favor and the more damages will be paid. This screening should produce a pool of filed cases that tends to exclude those where the

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liability appeared to be clear. Cheney et al. comment further that, because of this prior filtering by patients and lawyers, the current tort system probably results in fewer payments to injury victims than would occur in either a no-fault or a fault-based administrative system. *See id.* at 1603.

[139] "[A] lawyer should decide to take a case if the predicted income is greater than the predicted expenses. Conversely, he should decline the case if the predicted expenses exceed the predicted income." Stuart S. Nagel, *Applying Decision Science to the Practice of Law*, PRAC. LAW., Apr. 15, 1984, at 13, 14; *see also* M.W. Reder, *Medical Malpractice: An Economist's View*, 1976 AM. B. FOUND. RES. J. 511, 562 (concluding that attorneys handling malpractice claims on a contingent fee basis are profit maximizers).

[140] Danzon notes that her evidence "supports the belief that small malpractice claims are often barred from recovery because of the high fixed costs of participating in the legal process." DANZON, *supra* note 6, at 42.

potential defendant's liability is insufficiently clear or the victim's losses are not large. Furthermore, if the number of personal injury lawyers per capita and the number of cases taken by each remains fairly constant, the screening process should, as the proportion of the actionable injury base presented to an attorney increases, yield a pool of cases with a greater expected return. Indeed, this is consistent with increases in plaintiff victories and increasingly large settlements and awards, and provides a parsimonious explanation for those trends (if they really exist).[141]

Moreover, while an economically sensitive screening process such as this means that all defendants gain an added layer of protection,[142] some kinds of defendants enjoy a greater level of protection than others. Cases that are less expensive to litigate (because they are more routinized and require less attorney time, fewer experts, etc.) will be accepted more readily because they are investments that will require a smaller return to be profitable for the attorney. These are more likely to be cases of the auto negligence and slip-and-fall variety than medical malpractice or product liability, which involve more complex proofs, more elaborate discovery, and more experts. Cases that are more expensive to litigate will be accepted less readily and will require a higher expected return before they will be litigated.[143] Once certain types of injury become sufficiently common—such as torts of mass destruction—they are transformed from the latter category to the former. Asbestos cases provide a good example of this. Once a lawyer handles a fair number of asbestos cases, even complex evidence gathering and proof become routine and easily replicated. This kind of product liability case is then treated more like an auto negligence case.[144]

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[141] Ironically, the solution sometimes suggested to solve the liability "explosion"—that plaintiffs' attorneys commit themselves to taking only the most meritorious cases deserving the greatest compensation—may be exactly what they have been doing. This solution tends to produce precisely the results critics have taken to indicate the existence of the "explosion" in the first place.

[142] Potential defendants receive several protections before suit is ever filed. First, victims, as a class, tend not to seek compensation. Additionally, some of those who do cannot get beyond the barrier posed by the selectivity of the plaintiff lawyer. Plaintiffs' attorneys are not often thought of as serving defendants' interests, but to this extent, as gatekeepers to the litigation system, they do.

[143] For a discussion of how this reasoning suggests an alternative interpretation to the findings of studies of damage awards, see *infra* notes 340-46 and accompanying text.

[144] Although these cases may become simpler for lawyers, they do not necessarily become so for courts. *See* Cimino v. Raymark Indus., 751 F. Supp. 649, 650-51 (E.D.

Thus, some classes of defendants (corporations, professionals, etc.) have greater freedom to conduct their activities than others (e.g., motor vehicle drivers).[145] Conversely, people are better protected from injuries caused by some classes of injurers than from others.

Assessment of the litigation system's performance at this stage of the litigation process requires consideration of the base rate of actionable injuries discussed earlier. Figure IV illustrates this point, using approximations of some of the reported data on medical malpractice injuries and claims.[146]

Tex. 1990) (detailing the complexities of a class action asbestos litigation).

[145] This ceases to be true for products that have caused mass injury.

[146] In Figure IV and several figures that follow it, I am performing much like a paleontologist of the legal system. *See supra* text accompanying note 2. I am trying to construct as accurate a picture as possible of the flow of cases into, through, and out of the litigation system based on fragmentary evidence. The evidence is discussed in the text and then assembled, by stages, into a whole in the Figures. Like building a dinosaur skeleton, the solid pieces we have are fixed and the unknown parts that are to be filled in must remain consistent with what is already known. This means that the picture constructed *may* be incorrect. But it is the best we can do with present knowledge. We know, for example, that the ratio of negligent iatrogenic injuries is about 1:100 (or 10,000:1,000,000), *see supra* notes 88-91 and accompanying text, and that filings number about 10% of the total of actionable injuries (200+800 over 10,000 equals 10%), *see supra* note 121 and Table I. We can be far less sure about the ratio of true positive filings (200) to false positives (800). The Harvard Medical Practice Study, for instance, found that only one claim out of every six filed had been determined, by review of medical records, to have been a negligent iatrogenic injury. *See* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 7-34. But that 1:5 ratio (which would translate in Figure IV as 167:833) overstates the skew, because it does not include actual negligent injuries that had not manifested themselves until after discharge. Thus, the 1:4 ratio (200:800) used in the Figure IV seems a reasonable estimate. Finally, the ratio of cases presented to attorneys (400:2400) is little more than a guess, though it is well within the bounds of the findings described in the text. It is by these fragments and educated guesses that this and later Figures have been constructed.

The disproportionate use of medical malpractice data here and elsewhere in this Article is compelled by the fact that medical malpractice has been the most researched category of tort. We must note, however, that in the world as well as in the litigation system, medical malpractice is one of the more infrequent torts. Rand found that 1% or fewer of accidental injuries were the result of medical injuries. *See* COMPENSATION FOR ACCIDENTAL INJURIES, *supra* note 110, at 31. (Since these data were patient self-reports, the more veridical figure may be either somewhat smaller or larger, depending on whether respondents tended to mistake non-negligently caused injuries for negligent injuries, or whether they tended to overlook injuries or misattribute iatrogenic injuries as unavoidable.) In both the federal and state courts, medical malpractice cases account for no more than a few percent of cases. I leave it to the reader to try to figure out why the world has come to know relatively much about so little, and next to nothing about so much.

FIGURE IV[147]
FLOW OF MEDICAL MALPRACTICE CASES THROUGH PART OF THE LITIGATION SYSTEM

	Negligent Iatrogenic Injury	
	Present	Absent
Base of actionable injuries	10,000*	1,000,000*
Decisions to claim		
Prospective cases presented to lawyers	400	2,400
Lawsuits filed	200*	800*
Settlements negotiated		
Trials commenced		
Trial Verdict for Plaintiff		
Trial Verdict for Defendant		
Awards		
Changes from additur/remittitur review		
Appeals		
Compensation paid		

Suppose plaintiffs' attorneys find that for every potential client presenting an apparently meritorious claim, six others appear presenting invalid claims—in Figure IV this scenario is represented as 400 individuals with injuries caused by negligence and 2400 without negligent injuries consulting attorneys. From these data, one might erroneously infer that most cases involve frivolous claims. What is not apparent, even to plaintiffs' attorneys, who see only this stage of the system, is the sharply skewed base rate of injuries from

[147] The sources for Figure IV are known and hypothetical transition probabilities (see relevant text sections for details). Empirically determined ratios are indicated with an asterisk; others are estimated. *See supra* note 146.

which it arises: only one injury for every 100 patients. Thus, the 400 meritorious claims are only 4% of the total pool of negligent injuries (the other 96% have elected not to claim), and the 2400 cases without merit are less than one quarter of one percent of the non-negligently injured (or non-injured).

If plaintiffs' attorneys were asked for a candid appraisal of the litigiousness of Americans, based on their "actual experience with potential clients who came knocking on their doors," their answers naturally would focus on the distribution of those clients who presented claims—not on those who might have but did not. Based on their experience, they would conclude that a large number of people with claims lacking merit are looking to sue. Viewing the same potential clients against a background of the base rate of injuries from which claims could come would suggest that only a tiny proportion of people are seeking to bring claims lacking merit. In addition, very few of the negligently injured seek to claim either. Therefore, ignoring the base rate leads to distorted inferences.[148]

The data on filings can be similarly misleading. If, as estimated in Figure IV, 200 claims arise out of the base of negligent injuries and 800 arise out of the base of non-negligent injuries, the superficial analyst might conclude that it is a perverse litigation system that allows four times as many non-meritorious claims to be filed as meritorious ones. But the 200 cases represent only half of the valid cases plaintiffs' lawyers could have filed, while plaintiffs' lawyers have already screened out two-thirds of the non-meritorious claims. Moreover, the 200 filed cases represent only 2% of the 10,000 known negligent injuries,[149] while the 800 cases filed

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[148] Comparable errors occur in other areas. Physicians who treated histoplasmosis mistakenly believed it to be a rare and nearly always fatal condition. *See* HISTOPLASMOSIS: PROCEEDINGS OF THE SECOND NATIONAL CONFERENCE 15 (Albert Ballows ed., 1971). They came to this conclusion from looking at the patients who appeared in their clinics and hospitals seeking treatment. But when public health researchers examined the incidence of the disease in the population at large, they found that the disease actually was very common and rarely fatal. *See id.* at 9-15. Obviously, only those who were seriously ill from the disease sought treatment. Where one looks—at the population or at the self-selected and unrepresentative sample that appears for attention—affects the inferences drawn about the frequency and nature of the condition. *See also* Stanley Schachter, *Recidivism and Self-Cure of Smoking and Obesity*, 37 AM. PSYCHOLOGIST 436, 437 (1982) (criticizing estimates of smokers' ability to quit based on data from smoking cessation clinics rather than from the general population of smokers).

[149] Thus, under this system 98% of tortfeasors are spared from answering to their victims.

represent only eight one hundredths of one percent of the non-negligently injured base from which they arise.[150]

Perhaps the most precise conclusion is that filings represent few false positive errors (defendants who are wrongly sued) and many false negative errors (meritorious claims that are never filed). Yet, paradoxically, the extreme skew of the base rate means that the number of claims lacking merit has to exceed the number of meritorious claims, probably by several fold.[151] The base rate has a powerful effect on the distribution of filings. The absolute numbers of cases and their proportions relative to their base rate paint very different pictures about what is taking place. Moreover, the two types of errors are asymmetrical. False positive errors will have repeated opportunities to be caught and removed from the system without payment. On the other hand, false negative errors are unlikely ever to be corrected.

D. *Case Filings*

As the reader must now appreciate, filing data can be meaningless or misleading if examined without reference to context: the initial base of injuries, victims' decisions whether to claim, and attorneys' decisions whether to accept cases. Yet, the literature of filings and the changes in filings over time typically treat these data as if they existed in splendid isolation. Nevertheless, these data and their implications should be considered.

1. Federal Case Filings

Along with awards, filing data have attracted the most attention in recent years, perhaps because they are the most available of the relevant data. Federal data on filings are readily available from the Administrative Office of the United States Courts (AO), whose annual reports can be found in most law libraries and whose data tapes can be obtained at low cost.

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[150] The .08% erroneous filing rate is quite good when compared to the rate of negligent medical injury (about 1%) or the rate of diagnostic errors. *See* Joseph L. Gastwirth, *The Statistical Precision of Medical Screening Procedures: Application to Polygraph and AIDS Antibodies Test Data*, 2 STAT. SCI. 213, 215-17 (1987) (finding that AIDS testing on a randomly selected population produces about 95% false positives).

[151] This will be true unless screening by plaintiffs' lawyers is considerably more accurate than we have any reason to suppose it would be.

FIGURE V[152]
FEDERAL CIVIL FILINGS

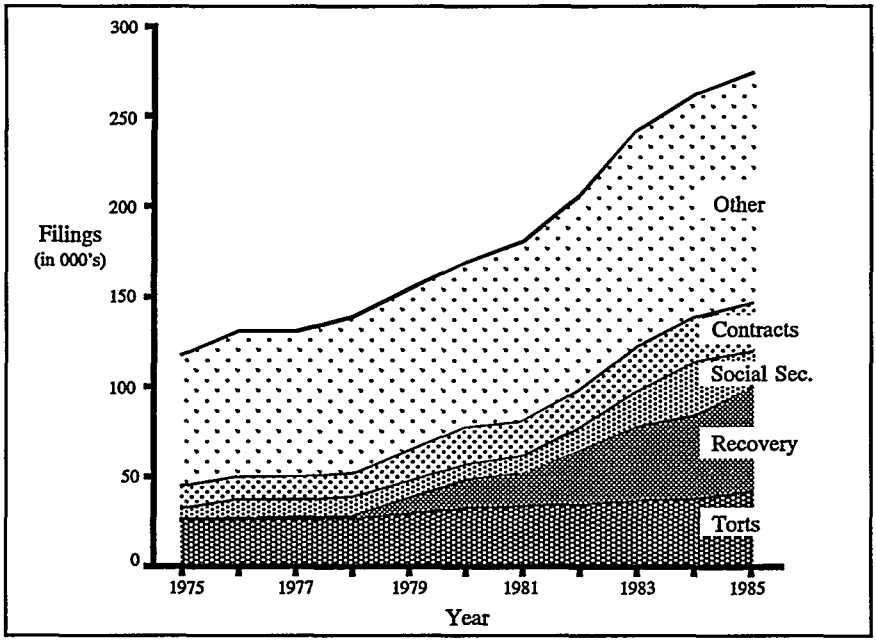

Figure V graphically depicts raw data on the amount of civil litigation in the federal courts, as well as more detailed information on several categories of civil cases. The data presented include the period from 1975 through 1985.[153] Some might point to the increase in the *total number of civil filings* as evidence that there had been massive and precipitous growth in torts. For example, from 1975 to 1985 the total number of civil filings grew from 117,320 to

[152] Figure V is a stacked area chart whose data come from Appendix B *infra*.

[153] These were the data available to the debate that erupted in 1986. In Appendix B, *infra*, the data are carried as far forward to the present as available.

273,670, an increase of 133%.[154] Although this may at first appear to be a dramatic increase, the liability crisis debate was focused on torts, and thus the *total* federal civil caseload is actually overinclusive by a considerable margin.[155]

Other commentators aimed a bit more precisely, pointing to the growth of the tort portion of the caseload, up 62% from 1975 to 1985 (from 25,691 cases to 41,593).[156] To be sure, that is growth in the number of tort cases filed—an increase of 15,902 to be exact. As the Justice Department's report commented, "The Working Group was *particularly* struck by the *extraordinary* growth over the last decade of the number of tort lawsuits . . . ."[157]

But the question remains whether tort cases were indeed responsible for swelling the federal caseload. Several comparisons make clear that they were not. First of all, although there were 62% more tort cases filed in 1985 than in 1975, non-tort cases (all civil cases other than torts) grew by 153%.[158] Another way to view the situation is to realize that those 15,902 additional tort cases constituted only about 10% of the 156,350 additional cases the system had to contend with by 1985 (compared to 1975).[159]

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[154] *See infra* Appendix B. It is important to clarify how this calculation of percentage increase, which represents the amount of increase as a percentage of the starting point amount, is made. It is calculated by forming a fraction, using the number of additional cases as the numerator and the initial frequency as the denominator, and multiplying the quotient by 100. The initial frequency (117,320) is subtracted from the latter (273,670), which yields 156,350 additional cases. Dividing that difference by the initial frequency (117,320) yields the quotient, which expresses the latter frequency as a proportion of the initial frequency (1.33). Multiplying by 100 converts this proportion into a percentage. Thus:

$$\frac{273{,}670 - 117{,}320}{117{,}320} = \frac{156{,}350}{117{,}320} = 1.33 \times 100 = 133\%$$

If the initial and the latter amounts were the same, the numerator would equal zero and the percentage change would be zero. If the number doubled—that is, as many additional cases as there were to begin with—the percentage increase would be 100%.

[155] Between 1975 and 1985, the proportion of federal filings that were tort cases constituted only between 14% and 22% of total filings. *See id.*

[156] *See id.*

[157] TORT POLICY REPORT, *supra* note 27, at 2 (emphasis added).

[158] *See infra* Appendix B (indicating that non-tort cases grew from 91,629 to 232,077). Presumably, this was two-and-a-half times as "extraordinary."

[159] *See id.* For a discussion of this, see Marc Galanter, *The Life and Times of the Big Six; or, The Federal Courts Since the Good Old Days*, 1988 WIS. L. REV. 921, 924-28; Galanter, *supra* note 25, at 15-28.

FIGURE VI-A[160]
TORTS AS A SLICE OF THE FEDERAL CIVIL LITIGATION PIE - 1975

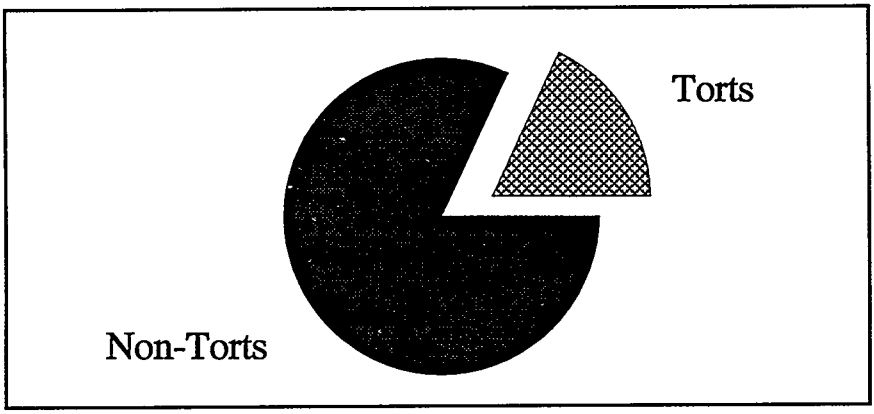
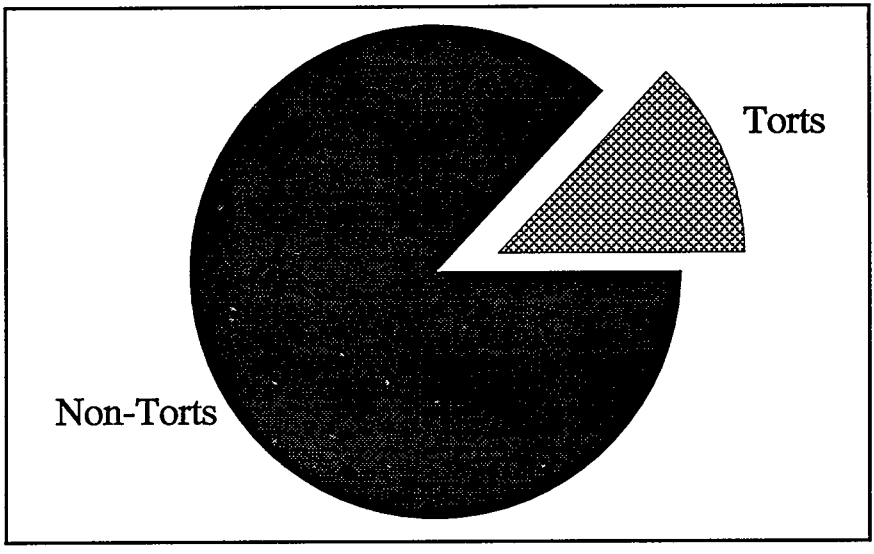


FIGURE VI-B
TORTS AS A SLICE OF THE FEDERAL CIVIL LITIGATION PIE - 1985

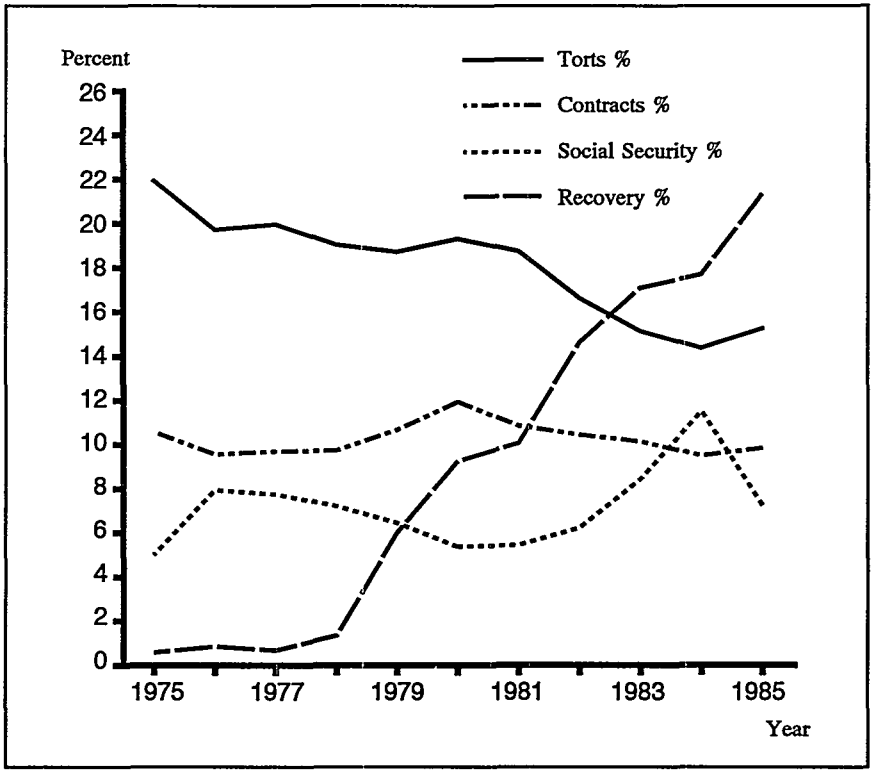


Another way to analyze this pattern of growth is to look at the federal caseload through pie charts, as in Figures VI-A and VI-B. The area of the pie is proportional to the total number of federal

[160] Appendix B, *infra*, supplies the data for Figures VI-A & VI-B.

civil filings. Thus, the tort slice for 1985 is 62% larger than the 1975 slice. But the total pie has grown much larger. Importantly, we can see that the 1985 tort slice is a smaller portion of the 1985 civil litigation pie (15%) than the 1975 slice was of its pie (22%). During this whole period, torts constituted a *shrinking* proportion of the federal civil caseload, as Figure VII indicates. The years 1983, 1984, and 1985 formed a valley for tort cases as a proportion of federal civil litigation—an ironic period for a crisis in the volume of tort cases to have been declared.

FIGURE VII[161]
SEVERAL CATEGORIES OF FEDERAL CIVIL CASES AS PERCENTAGES OF TOTAL CASELOAD



Other kinds of civil cases clearly were growing faster than torts. Table II reveals that tort cases were far overshadowed by, among

[161] Appendix B, *infra*, supplies the data for Figure VII.

others, recovery of federal overpayments (8440% growth), social security cases (238% growth), and contract litigation (117% growth).

TABLE II[162]
FEDERAL CIVIL FILINGS: GROWTH RATES FOR SEVERAL TYPES OF CASES

Year	Total	Torts	Non-Torts	Over-Payment	Social Security	Contracts
1975	--	--	--	--	--	--
1976	11	0	14	60	77	1
1977	11	1	14	27	73	2
1978	18	3	23	173	70	9
1979	32	12	37	1259	70	33
1980	44	27	49	2189	55	62
1981	54	31	60	2567	67	58
1982	76	33	88	4312	119	74
1983	106	42	124	5952	248	97
1984	123	46	144	6683	413	100
1985	133	62	153	8440	238	117

While tort cases went from 25,691 in 1975 to 41,593 in 1985, recovery of overpayment cases jumped from a trickle of 681 to over 58,160, social security cases went from 5846 to 19,771 (29,985 in 1984), and contract cases increased from 12,391 to 26,849.[163] One might wonder why the crisis did not include any of those other categories of cases.[164]

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[162] Appendix B, *infra*, supplies the data for Table II.

[163] *See infra* Appendix B. The AO's 1984 report stated: "In recent years the number of civil cases . . . has been greatly influenced by two case categories. These two categories are recovery of overpayments and enforcement of judgments and *Social Security Act* cases." 1984 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 125. For further discussion of the large growth areas, see Galanter, *supra* note 159, at 925 (finding that six categories of cases together account for 79% of the growth in filings over the quarter century from 1960 to 1986; the "big six" are civil rights (17.9% mean annual growth rate over the period), social security (13.5%), recovery cases (11.8%), prisoner petitions (11.1%), other contracts (5.0%), and torts (3.0%)).

[164] The answer likely reflects a concern not so much with numbers of cases and their burden on the courts, but rather with the direction of transfers of wealth that result from different categories of cases. Tort cases usually involve allegedly injured citizens seeking compensation from those they believe injured them—if not from manufacturers or professionals (as defendants), then from insurance companies. Thus, the transfers are from corporate profits to injured individuals. Contract cases usually entail businesses slugging it out with each other (and silence about that may

Of special interest to many commentators, including the Justice Department's Tort Policy Working Group, was the product liability category. From 1974 to 1985, it grew from 1579 cases to 13,554, the oft-cited 758% growth rate.[165] Figures I-A & I-B contained these same data.[166] For a number of reasons, the 758% may not reflect the reality of growth in federal product liability cases.

First, the count used by the Justice Department and academic commentators is composed of all kinds of product liability cases, including some contract actions. By lumping together all kinds of product liability cases, some contract cases are counted as torts.[167]

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be a kind of professional courtesy) or bill collection (a context in which courts and lawyers are transformed into essential, if not heroic, partners in a productive society). The growth in social security cases and recovery of overpayment cases represented a deliberate change in federal policy. President Reagan's first Secretary of Health and Human Services adopted a policy of thinning the ranks of people receiving social security disability benefits. Many of these cases resulted in litigation, as tens of thousands of persons already determined to be disabled had to appeal Social Security Administration actions to the federal courts in an effort to restore their benefits under the Social Security Act. *See* Robert Pear, *Culling of U.S. Disability Rolls Is Underway*, N.Y. TIMES, May 14, 1986, at A24 ("The disability reviews were halted . . . in response to harsh criticism from many members of Congress, Federal judges, and governors, who said the Reagan Administration was improperly throwing thousands of disabled people off the rolls."). Recovery of overpayment and enforcement of judgment cases reflected an attempt by the federal government to retrieve benefits it overpaid and to obtain judgments it had won in lawsuits. *See* Galanter, *supra* note 159, at 928-29. Although the public rhetoric often was about welfare queens and college students who defaulted on their loans, interestingly, "[m]ost of the cases involved actions to recover overpayment of veterans' benefits." 1985 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 141.

We need not question the federal government's wisdom in trying to keep our financial house in order, or its choosing to use the courts to help accomplish that task. It is more than a bit ironic, however, that the same Justice Department that helps establish and carry out policies that add the lion's share of cases to the federal docket looks at that overall growth and is "particularly struck" only by the "extraordinary growth . . . of the number of tort lawsuits." TORT POLICY REPORT, *supra* note 27, at 2.

[165] *See infra* Appendix B; *see also* TORT POLICY REPORT, *supra* note 27, at 45; Priest, *supra* note 45, at 323-24. In this Article, I have been using a 1975-1985 time frame. For the analysis of the product liability category, I have followed those commentators in stretching to an 11-year span. I will discuss the implications of such a choice shortly.

[166] *See supra* figures accompanying note 42.

[167] *See, e.g.*, 1989 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 116 (indicating, in Table S-11, the total number of product liability cases commenced by nature of suit, which includes a listing of "contract actions"). Also, not all product liability tort cases are personal injury cases, though they are usually treated as if they were. Some of these suits are for damage to property, and those are often brought by businesses. Breach of warranty claims are also based on strict liability. These probably are nits too small to pick, however.

Second, when the starting point is a small number, growth *rates* can easily appear huge. As has been noted elsewhere, 1974 was the first year that product liability cases had their own separate listing on the cover sheets that lawyers fill out when filing a case in federal court.[168] The count for 1974 is almost certainly an understatement of that year's actual incidence of product liability cases. In 1974, the supply of older cover sheets (without the product liability category on it) may not have run out. Furthermore, it may have taken lawyers a few years to notice and use the new category. Thus, the 1974 count may be artificially low. The apparent sudden growth following 1974, then, may not be entirely due to growth in the actual number of cases, but may be partially due to growth in the supply of sheets on which to check off "product liability," as well as growth in lawyers' awareness that there is a place to record that fact.[169]

TABLE III[170]
FEDERAL CIVIL FILINGS: GROWTH OF PRODUCTS LIABILITY

	Percentage Growth		
Year	From 1974	From 1975	From 1976
1974			
1975	83		
1976	134	28	
1977	158	41	10
1978	177	51	18
1979	288	112	66
1980	391	169	110
1981	474	214	145
1982	466	210	142
1983	484	220	149
1984	580	272	191
1985	758	370	267
1986		371	268
1987			310

Third, the years chosen for comparison cause the apparent growth to seem especially dramatic. For example, as Table III

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[168] *See* Galanter, *supra* note 159, at 937.
[169] *See id.* at 937 n.54.
[170] Appendix B, *infra*, supplies the data for Table III.

shows, taking the starting point as 1975, instead of 1974, results in growth by 1985 of 370% instead of 758%.[171] Using 1976 as the starting point, we discover that by 1985 the growth has been only 267%.[172] In short, the particular years examined make the growth rate for product liability appear to be more than double what it would be otherwise.

Finally, what are we counting? Does the growth, be it 758% or half that, reflect an enduring change in some underlying pattern? Several commentators have suggested that personal injury product liability cases come in waves, rising as certain products that have caused mass injuries bring a tide of cases into the courts, and receding after a fairly circumscribed period.[173] One-third of all product liability cases in the system in the mid-1980s were attributable to a single product: asbestos.[174] This wave of cases, like other waves, flooded the system and created enormous problems of management as well as justice. But it would be more sensible to view them as what they are and debate the proper solution to their distinctive nature, rather than to pretend they are merely one indication of broader changes in the way Americans use their courts.[175]

One study examined which industries and companies have been defendants in federal product liability suits.[176] Between 1970 and 1986 there were 85,694 suits naming 19,456 different defendants.[177] Most industries were represented, but a few predominated. Asbestos accounted for 20,888 of those cases,[178] while cases involving tools/machinery/equipment, pharmaceuticals, and motor vehicles totaled over 30,000.[179] The companies named as defendants formed quite a skewed distribution: a mere thirty-four

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[171] Perhaps the better comparison is to look at the eleventh year (1986) following the starting point (1975). This time period witnessed a 371% increase in case filings.

[172] By 1987, the eleventh year following 1976, the growth rate in filings was 310%.

[173] *See infra* notes 208-11 and accompanying text.

[174] *See* AD HOC COMM. ON ASBESTOS LITIG., REPORT TO THE JUDICIAL CONFERENCE OF THE UNITED STATES 7-10 (1991) [hereinafter JUDICIAL CONFERENCE REPORT]; TERENCE DUNGWORTH, PRODUCT LIABILITY AND THE BUSINESS SECTOR: LITIGATION TRENDS IN FEDERAL COURTS 35-38 (1988); THOMAS E. WILLGING, TRENDS IN ASBESTOS LITIGATION 117-19 (1987).

[175] *See infra* notes 206-09 and accompanying text (discussing the "three worlds" of tort cases).

[176] *See* DUNGWORTH, *supra* note 174, at 17-29.

[177] *See id.* at 17 tbl. 3.1.

[178] *See id.* at 21.

[179] *See id.* at 19.

companies were lead defendants in over 35,000 suits while 17,000 companies led in only one.[180] Thus, some industries face many more suits than others and within any given industry a few companies face many more suits than other companies.[181]

"In both the asbestos and pharmaceutical industries, for instance, the dominance of major defendants appears to be declining[;]" in autos, it is increasing.[182] Asbestos topped all other industries with its geometric increases.[183] Within the pharmaceutical industry, companies showed sudden blips and declines, reflecting the harms of specific products that were introduced and then removed from the market.[184] Other than these two situations, no other industry or product has experienced similarly high levels of litigation.[185] Excluding those two categories, the product liability growth rate is not much different from the general tort rate.[186] This picture may not depict a system that is finely tuned, but neither does it appear to target products in a random and irrational way, as so much of the popular imagery of the civil justice system would suggest.

Even were it true that the federal courts were trying nothing but tort cases, federal data constitute only a small piece of the picture. We need to see what is happening in the states, where about 98% of the cases occur.[187]

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[180] *See id.* at 24.

[181] No doubt a large part of this skew reflects their respective market shares, although not all of it.

[182] DUNGWORTH, *supra* note 174, at 50.

[183] *See id.* at 35-38.

[184] *See id.* at 38-42. Sometimes, however, those harmful drugs have been known to be shipped to foreign markets, exposing the companies and their officers to the possibility of more than just civil liability. *See* JOHN BRAITHWAITE, CORPORATE CRIME IN THE PHARMACEUTICAL INDUSTRY 257-61 (1984).

[185] *See* DUNGWORTH, *supra* note 174, at 57.

[186] *See id.* While this pattern of litigation might suggest that once the few exceptional products are removed product liability cases do not differ significantly from other tort cases, the study's author found support both for the "'thousands of products and businesses' point of view [the broad, gradual increases] and for the 'epidemic of litigation' notion [surges of litigation with a limited time span]." *Id.* at x.

[187] For civil litigation in 1989, the federal courts saw 233,529 cases filed compared to 17,321,125 in the state courts for a 1.3% to 98.7% split. *See* NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1989, at 7, 21 (1991) [hereinafter NCSC 1989 REPORT]. For 1985, the figures were 273,670 federal versus 14,357,757 state. *See* NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1985, at 213 (1987); *infra* Appendix B. This converts to a 1.9% to 98.1% ratio.

2. State Court Filings

Although state cases are far more numerous than federal cases, careful counts of them are harder to find. The quality of state record-keeping varies, and the process of persuading states to collect and keep comparable data using comparable definitions is still under way.[188]

TABLE IV[189]

STATE TORT CASES: FILINGS PER 100,000 POPULATION

State-Ct	'76	'77	'78	'79	'80	'81	'84	'85	'86	'87	'88
Cal.-S	373	383	380	400	351	335	379	425	483	497	468
Colo.-D	126	123	126	136	155	172	132	140	188	111	137
Fla.-C	312	266	238	215	217	---	244	263	304	295	278
Haw.-C/D	239	210	219	237	238	256	222	221	234	252	229
Kan.-D	122	115	139	214	230	190	165	166	174	177	184
Md.-C	199	184	188	185	213	---	249	230	277	285	306
N.J.-S	217	533	547	606	653	558	555	557	598	608	728
N.Y.-S/Co	203	205	201	202	193	223	213	200	180	181	171
P.R.-S/D	180	171	176	177	184	175	168	---	194	200	180
Tenn.-C	275	243	217	216	224	261	250	264	274	280	---
Tex.-D	139	131	123	122	200	194	214	230	229	243	217
Utah-D	66	57	64	61	51	---	87	76	152	79	83
Wash.-S	187	194	177	174	173	188	207	221	437	176	188

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[188] *See* NCSC 1988 REPORT, *supra* note 20, at 3-4 (describing problems of comparing statistics from different states); CONFERENCE OF STATE COURT ADMINISTRATORS ET AL., STATE COURT MODEL STATISTICAL DICTIONARY 1-2 (1980) (noting the problems of compiling national statistics resulting from the abundance of terms used by states to report their caseloads).

[189] The data for Table III come from NCSC 1988 REPORT, *supra* note 20, at 32; NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1987, at 36-37 (1989) (providing data for 1981 and 1984-1987); NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1980, at 77-78 (1984); NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1979, at 77-78 (1983); NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1978, at 64 (1982); NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1977, at 61 (1981); NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1976, at 79 (1980). Court abbreviations are as follows: C = Circuit, Co = County, D = District, and S = Superior (except New York where S = Supreme).

Table IV summarizes the most recent and complete data the National Center for State Courts (NCSC) has reported. These data are not as fine-grained as those of the AO; the NCSC utilizes the general category of "torts," rather than particular kinds of torts.

These data do not suggest that any general abrupt increase in tort filings has occurred. The period from 1978 to 1984, just preceding the announced "explosion," shows about a 9% increase in tort filings. The population in the jurisdictions counted increased 8% during the same period.[190] Such data suggest tort litigation, in total, kept approximate pace with population growth. Interestingly, a general upward trend in state court tort litigation took place between 1978 and 1981, followed by a decline from 1981 through 1984. In 1986, as the movement toward legislative reforms began to fill its sails, filing trends reversed direction and surged upward. The NCSC report suggests that this may reflect a "'race to the courthouse' . . . to avoid the limits imposed by the legislation before it went into effect."[191] In general, various analysts, looking at various data and using various calculations have concluded that in the aggregate, state tort cases grew at a modest annual rate of somewhere between 2.3% and 3.9%.[192] Adjusting for population growth, the figure does not rise above 3%.[193]

These state data teach us several important lessons about the litigation system. First, they show considerable variation from state to state. In a given year, for example 1984, the states' tort caseloads varied from a low of eighty-seven tort filings per 100,000 population to a high of 555.[194] All states are not alike. A recent study, reporting on tort litigation in thirty-eight large urban courts during a single month in 1988,[195] shows filings averaging 36.8 per 100,000 population, but varying between 2.5 and 164.8.[196] Second, states varied over time. Some showed increases in the tort filing rate, some remained about level, and others showed declines; their various trends varied in steepness; and over periods where

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[190] *See* NATIONAL CTR. FOR STATE COURTS, STATE COURT CASELOAD STATISTICS: ANNUAL REPORT 1984, at 184 (1986) [hereinafter NCSC 1984 REPORT].

[191] NCSC 1988 REPORT, *supra* note 20, at 27.

[192] *See* DEBORAH R. HENSLER ET AL., TRENDS IN TORT LITIGATION: THE STORY BEHIND THE STATISTICS 6 (1987) (summarizing these studies).

[193] *See id.*

[194] *See supra* Table IV.

[195] *See* David B. Rottman, *Tort Litigation in the State Courts: Evidence from the Trial Court Information Network*, ST. CT. J., Fall 1990, at 4.

[196] *See id.* at 6.

some states were moving up others were moving down.[197] In addition, some of the more recent state studies show the relative volume of various kinds of cases. The tort caseload is dominated by auto torts, accounting for 46.1% of filings in the NCSC's study of urban areas.[198] Product liability cases constituted 2.1% and medical malpractice 5.9%.[199] Without a doubt, the pattern would be different in smaller, non-urban jurisdictions.

These findings suggest that local, regional, and state circumstances vary considerably and that the behavior of the citizens and the system vary over time and place for reasons that still await recognition, not to mention explanation. Thus, sweeping national generalizations cannot accurately reflect the behavior of the tort litigation system as a whole. We need data that will allow states to assess their own situations. For Kansas to overhaul its civil justice system because of something that might be going on in New Jersey does not make much sense.[200]

To understand these data still better, we might want to ask how they compare with other kinds of civil litigation in the same places and at the same times. In most states for which data are available, tort cases represented less than 10% of civil filings.[201] Thus, to an even greater degree than in the federal system, tort cases were overshadowed by other kinds of civil litigation such as contracts, property, small claims, and family law.[202] Moreover, in terms of

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[197] *See id.* at 5. That is, some that went up rose faster than others; some that went down declined more sharply than others.

[198] *See id.*

[199] *See id.*

[200] The NCSC data on the various states, as well as some individual state studies, show that many states were experiencing level or declining tort filings (either in terms of raw frequencies or as a fraction of the total civil litigation pie or both), yet most were somehow convinced they had a crisis to address.

[201] *See* NCSC 1989 REPORT, *supra* note 187, at 44. States where torts constituted fewer than 5% of total civil filings for all or most years from 1984 through 1989 include Colorado, Idaho, Kansas, North Dakota, and Utah. By contrast, during the same period, in Maine, torts constituted between 26% and 31% of the cases. In New York, they constituted between 27% and 30%. *See id.*

[202] *See id.* Why does the public hear nothing about these categories of state litigation? Probably because they are not as likely to involve well organized defendants (e.g., industry, insurers, or professionals). From 1978 to 1984, the area of greatest growth in state courts was small claims (population up 4%, filings up 11%). *See* NCSC 1984 REPORT, *supra* note 190, at 181. Perhaps we hear no complaints from the business community about those cases because in small claims courts businesses most often are the plaintiffs, not the defendants. This has been the finding of most small claims courts studies. *See, e.g.*, Suzanne E. Elwell, *The Iowa Small Claims Court: An Empirical Analysis*, 75 IOWA L. REV. 433, 483-87 (1990) (reviewing studies).

growth rates, contract cases showed "moderate annual growth" and real property cases showed "substantial growth," while the figures on tort trends were deemed "far from conclusive."[203]

Before we can say we understand the civil justice system, we ought to be able to determine why the number of non-tort civil case filings has risen more sharply than tort case filings. The 1989 NCSC Report offers one possible answer, suggesting that the economy may be behind this trend. The Report also offers the following prediction: "Given the prevailing economic climate, it is possible that those types of cases [such as contracts and real property] will replace torts as the significant indicators of the volume of litigation."[204]

There is much that the filing data, and those who have relied on them, do not tell us. They have taken in too much or too little of the picture. Those who point to the total growth in federal litigation point to much more than the tort portion of the caseload. On the other hand, federal cases constitute only a fraction of the national caseload, so whatever those cases show is likely to be unrepresentative of the whole picture.[205]

When tort filings themselves are disaggregated into subcategories and controlled for population changes, we find that some subcategories are growing, some remain constant, and others are shrinking. Not all of the activity of life proceeds at an equal pace. Neither do all torts. These differences among subcategories have led some researchers to describe tort litigation in terms of three separate "worlds," each behaving differently.[206] The first world is regarded as stable and consists of routine personal injury suits, mostly auto cases, with modest stakes and settled law. The second world is growing and consists of high stakes cases, notably product liability, medical malpractice, and business torts. The third is the world of mass latent injury cases, such as those involving asbestos and the Dalkon Shield. This world is characterized by rapidly evolving and often problematic law. It has the potential for enormous growth because the injuries involved affect large numbers of people.[207]

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[203] NCSC 1989 REPORT, *supra* note 187, at 46-47.

[204] *Id.* at 47.

[205] *See, e.g.*, TORT POLICY REPORT, *supra* note 27, at 2-3 (generalizing from one subcategory of tort cases in the federal system to the nation as a whole).

[206] *See* HENSLER ET AL., *supra* note 192, at 30-34.

[207] *See id.*

The "three world" theory suggests that, although tort litigation overall has grown only modestly, one of its subparts has already grown substantially and another has the potential to do so. These differences suggest explanations for the behavior of the tort system contrary to the hypothesis of the litigious society. The cultural and psychological explanations of litigiousness predict broad and general increases in filings, not selective and uneven changes. The observation that different subsets grow at different rates, or that some grow and others decline, requires a more complex explanation than the ones currently offered by the public debate. Some theory explaining the differences in growth rates is essential.

One explanation, put forward by researchers at Rand and by Galanter, suggests that rather than being motivated by "litigiousness," people merely are responding to the objective circumstances of the world in which they live.[208] This is most evident in the world of mass latent torts. These burst onto the scene, produce a tidal wave of litigation that threatens to overwhelm the courts, and then fade as the problem that engendered the litigation is vanquished.[209] To treat one such burst of litigation as a systemic change in the culture or in the legal system is to mistake one colossal tree for the whole forest. On the other hand, as the Rand study suggests, these sorts of injuries form a distinct type of litigation of their own, and the litigation system is not well adapted to handling them.[210] In light of this problem and the changing

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[208] *See id.* at 10; Marc Galanter, *Reading the Landscape of Disputes: What We Know and Don't Know (and Think We Know) About Our Allegedly Contentious and Litigious Society*, 31 UCLA L. REV. 4, 5 (1983); Galanter, *supra* note 25, at 8.

[209] Hensler has noted:

> As the metaphor suggests, this explosion of tort filings may be temporary—a bulge that the system slowly absorbs. But because these cases appear on the legal scene suddenly and in very large numbers, they contribute to a general impression of hectic court activity and may well overwhelm courts in certain locations.

HENSLER ET AL., *supra* note 192, at 10-11; *see also* Cimino v. Raymark Indus., 751 F. Supp. 649, 651-52 (E.D. Tex. 1990) (commenting on the great volume of asbestos litigation and its "astronomical" transaction costs). Note that these "worlds" refer to the underlying (and unmeasured) injury base rate, of which litigation is an echo, and that this explanation alludes to the system's external environment to explain its behavior.

[210] *See* HENSLER ET AL., *supra* note 192, at 33-34. When the number of people harmed is massive, the number of cases will be massive. Even now, for each asbestos case the federal courts dispose of nearly two more are filed. The federal courts are struggling to find a way to avoid drowning in these cases. *See* Michael J. Saks & Peter David Blanck, *Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in the Trial of Mass Torts*, 44 STAN. L. REV. (forthcoming 1992); Stephen Labaton,

nature of product liability law (as compared, say, to the law of auto negligence), the hyperbolic reactions of insurers and defendants become more understandable. Yet, it would be an error to view the bursts of litigation arising from a small number of mass-produced items as emblematic of the universe of tort litigation, most of which has been growing only gradually.[211]

Finally, if filings appear to be up, we cannot know whether that is true in real terms unless we have determined that nothing that precedes filings in the system has caused the apparent change. To illustrate, if other factors remain constant but the injury base rate is up and filings are up proportionately, then in real terms filings are level. On the other hand, if the injury base rate is *not* up, we still do not know whether increased filings are a result of a larger fraction of the injured seeking legal representation, or of lawyers accepting a larger fraction of the cases offered to them, or of some other factor.

Why is population, and population alone, the statistical control used in trying to make sense of filings data? This adjustment strategy implicitly assumes that the number of injuries is a simple function of the number of people—regardless of changes in age, economic condition, types of employment, and activities.[212] Why is the appropriate control the number of people in each state rather than *the number of actionable injuries*? Perhaps tort filings have been rising at exactly the same rate as actionable injuries, and the data reflect nothing more than an increase in injuries for which the population controls are incapable of adjusting. We just do not know. And few who discuss legal policy seem to realize that we do not know.

Judges See a Crisis in Heavy Backlog of Asbestos Cases, N.Y. TIMES, Mar. 6, 1991, at A1.

[211] If this analysis is correct, the removal of mass torts from the judicial branch through legislated administrative rescues of mass tortfeasors and their victims would subtract much or most of the apparent growth from the tort litigation system. For a proposal on how to eliminate legislatively the burst of litigation occasioned by the asbestos cases, see JUDICIAL CONFERENCE REPORT, *supra* note 174, at 1-39.

[212] For an example of how these other factors may affect the number of injuries, see COMPENSATION FOR ACCIDENTAL INJURIES, *supra* note 110, at 28, 47, 49, which shows different patterns of injuries as a function of activity engaged in, age, and income, respectively.

E. *Settlements*

To move from filings to trial awards—the two topics which have attracted the most attention—students of the litigation system must leap the formidable settlement mountain. But leap it they do, oblivious to its implications for what will happen at trial.

The focus on trials is somewhat misplaced, because the great majority of cases are settled, not tried.[213] Their outcomes are not determined by judges and juries but are under the bilateral control of either professional negotiators representing the parties or the parties themselves. Although pre-trial settlements are the principal stage at which tort disputes are resolved, they inspire little more than a footnote in the policy debate and research on the litigation system. At the same time, attention to the relatively few cases that are resolved through trial is unavoidable, not only because of the salience of the trial and its verdict, but also because negotiators have an eye on what a judge or jury would regard as a fair and proper resolution. Thus, private settlement discussions often are said to be carried out in the "shadow" of the law.[214]

Data on the settlement phase are lacking because of the private nature of the resolution of so many tort disputes. Parties control knowledge about settlements, while trial data are owned by the public. Indeed, many settlement agreements require secrecy as one of their terms. The lack of data has contributed to a lack of attention to the settlement process and its outcome. By ignoring settlement, the policy debate has failed to define the issues that warrant concern. This, in turn, limits the pursuit of further data by government agencies and researchers. In short, the largest phase of the litigation process, in terms of dispositions, remains hidden.[215]

What is most important to know about litigation and settlement has already been stated: Settlement is where the action is. Fewer

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[213] *See infra* notes 216-21 and accompanying text.

[214] *See* Marc Galanter, *Jury Shadows: Reflections on the Civil Jury and the "Litigation Explosion," in* THE AMERICAN CIVIL JURY: FINAL REPORT OF THE 1986 CHIEF JUSTICE EARL WARREN CONFERENCE ON ADVOCACY IN THE UNITED STATES 15, 17 (1987); Robert H. Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 88 YALE L.J. 950, 997 (1979).

[215] Without settlement data, even if the filing and trial data presented no evidence of an explosion, we could not be sure whether the cost to insurers was rising or not. Thus, it could well be true, as some insurance industry officials argue, that "the cost of liability awards may be escalating despite no evidence of a widespread 'litigation explosion.'" ALLIANCE OF AM. INSURERS ET AL., PROPERTY AND CASUALTY INSURANCE INDUSTRY DATA AND THE CASE FOR TORT REFORM 45 (1986).

than 10% of lawsuits require a trial for their resolution.[216] This fact has important implications for understanding the tort dispute process. But to say that only a small percentage of lawsuits went to trial does not necessarily indicate that the rest were settled. A large-scale study of all kinds of civil litigation found that while only 8% of filings went to trial, the termination of 31% of the cases reflected some judicial involvement such as arbitration or dismissal.[217] Fifty percent of cases were terminated by voluntary agreement of the parties.[218]

Moreover, these figures vary with types of cases and parties, over time, and perhaps even across defendants or insurers. A study directed at medical malpractice settlements found an increasing dependence on courts to resolve the claims; the proportion of cases resolved by the courts rose from 7% to 18% over the period of the study.[219] In addition, claims against physicians were more likely to go to trial than claims against hospitals.[220]

In any event, the role played by settlement in the processing of disputes is enormous. Negotiated settlements, more than anything else, may be responsible for Danzon's conclusion that:

> The allegation that the tort system is an erratic lottery is exaggerated. . . . More than 90 percent of claims are settled out of court. Two-thirds are closed within two years of filing. On average, claims settle for 74 percent of their potential verdict.[221]

As rates of pre-trial settlement change, we ought to ask what is responsible for those changes. The changes impinging on settlement patterns can come from upstream or downstream of the settlement process. If the nature or mix of cases being filed changes, we might expect changes in the rate and content of settlements. If juries change their characteristic decision patterns, that ought to be reflected in the settlement negotiations. If

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[216] *See* Herbert M. Kritzer, *Adjudication to Settlement: Shading in the Gray*, 70 JUDICATURE 161, 161-62 (1986).

[217] *See* CIVIL LITIGATION RESEARCH PROJECT, *supra* note 107, at S-23; *see also* Kritzer, *supra* note 216, at 163-64.

[218] *See* CIVIL LITIGATION RESEARCH PROJECT, *supra* note 107, at S-23.

[219] *See* NATIONAL ASSOC. OF INS. COMM'RS, MALPRACTICE CLAIMS: FINAL COMPILATION 21 (M. Patricia Sowka ed., 1980) (study of medical malpractice closed claims 1975-1978).

[220] *See id.* at 20.

[221] Patricia M. Danzon, *The Medical Malpractice System: Facts and Reforms*, *in* THE EFFECTS OF LITIGATION ON HEALTH CARE COSTS 28, 30 (Mary Ann Baily & Warren I. Cikins eds., 1985).

plaintiffs or their attorneys begin to press for more favorable outcomes, or defendants decide to resist more, that too should be reflected in settlement patterns. Those tactics might be expected to produce more successful negotiations.[222] But they might also be expected to result in more losses at trial by the side that resisted settling weaker cases.[223]

If settlement amounts provide a reasonable measure of the value of civil cases, they are not worth as much as is commonly thought. The Civil Litigation Research Project, which studied 1,649 representatively sampled cases in five jurisdictions in the early 1980s, found that of that diverse body of cases, 56% involved $10,000 or less and only 12% involved $50,000 or more.[224] The median settlement was $4500 for state cases and $15,000 for federal cases.[225] Mega cases most of them are not.

The challenge to negotiators, however, is to put the appropriate price tag on the cases, even if it is zero. A British study of the personal injury litigation settlement process found that both plaintiff and defendant solicitors had difficulty in evaluating liability and damages.[226] A Rand Corporation study confirms that these assessments are, indeed, less than an exact science.[227] That study

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[222] The mean proportion of medical malpractice filings closed without payment is typically 50%. *See* DANZON, *supra* note 6. Among physician-owned insurance companies it was 74% from 1980-83. *See* 2 AMA SPECIAL TASK FORCE ON PROFESSIONAL LIAB. & INS., PROFESSIONAL LIABILITY IN THE '80S 6 (1984).

[223] Thus, changes in success rates at trial could as easily be a reflection of changes in attorney settlement practices as of changes in jurors' attitudes and decisions: Plaintiffs will win more verdicts if defense counsel refuse to settle strong plaintiff cases. *See* PETERSON, *supra* note 111, at 19-20 (giving examples of how changing certain settlement practices could result in changing jury verdicts).

[224] *See* CIVIL LITIGATION RESEARCH PROJECT, *supra* note 107, at S-10 to S-11, S-21.

[225] *See id.* at S-21.

[226] *See* HAZEL GENN, HARD BARGAINING: OUT OF COURT SETTLEMENT IN PERSONAL INJURY ACTIONS 72-78 (1987). The task might be even more difficult for American lawyers. In comparing the United States and British systems, Genn points out that tougher rules on contributory negligence increase uncertainty as to whether a U.S. plaintiff will be able to uphold a finding of primary liability. Moreover, in Britain, a judge always decides liability and damages. *See id.* at 30. Finally, in the United States, we lack the comparative schedules employed in the British system. *See* P.S. ATIYAH, ACCIDENTS, COMPENSATION AND THE LAW 220-23 (3rd ed., 1980) (describing the British "judicial tariff system" for computing damages). Cutting the other way, discovery rules in the United States produce more disclosure early in the process, while the British system fosters trial by ambush, making it harder for British lawyers to assess liability and damages. *See* GENN, *supra*, at 32.

[227] *See* MARK A. PETERSON, NEW TOOLS FOR REDUCING CIVIL LITIGATION EXPENSES 3 (1983). If two people can disagree over what a claim is worth, they will disagree even more in their prediction of what a judge or jury will think that claim is worth.

found wide differences in the values adjustors placed on similar claims.[228] Sixteen members of the Los Angeles Claims Managers Association were asked to evaluate a hypothetical claim. Nine valued the claim at $50,000 to $150,000; the rest were spread from $6,000 to $750,000. The same variation occurred among claims staff within a single company, and the more experienced the claims adjusters, the wider the variation.[229] Settlements of actual cases show similar degrees of unexplained variation.[230]

To find variation in evaluations of the same or similar cases is not to say that larger settlement patterns cannot be detected. It still can be true that order exists, that cases with different characteristics produce systematically different settlements, or that the settlement process systematically produces overcompensation or undercompensation in relation to the losses of injury victims. Moreover, some research suggests that ambiguity facilitates settlement.[231] If so, an increase in predictability would make settlements more difficult to reach and perhaps would force more cases to trial.

One study of medical malpractice claims found settlements and awards to be strongly related to the severity of injury.[232] The study concluded that the single most important factor in settlement was whether the insurer viewed the case as meritorious and that cases were more likely to go to trial when high awards were expected, litigation costs were low, and outcome was uncertain.[233]

Thus, bargaining in the shadow of a third-party decision-maker is bound to compound the unpredictability.

[228] *See id.*

[229] *See id.*

[230] *See infra* notes 263-66 and accompanying text; *see also* DOUGLAS E. ROSENTHAL, LAWYER AND CLIENT: WHO'S IN CHARGE? 79-93, 202-07 (1974) (discussing variables in injury valuation and giving results of study showing variance in such determinations); GERALD R. WILLIAMS, LEGAL NEGOTIATION AND SETTLEMENT 111-14 (1983) (describing injury valuation as a missing skill of lawyers and citing studies showing variation in valuations).

[231] *See* Cynthia Fobian & Jay J. Christensen-Szalanski, *Ambiguity and Liability Negotiations: The Effects of the Negotiators' Role and the Sensitivity Zone*, ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES (forthcoming 1993).

[232] *See* PATRICIA M. DANZON, THE DISPOSITION OF MEDICAL MALPRACTICE CLAIMS 30-31 (1980).

[233] *See id.* at 60-62; *see also* Cheney et al., *supra* note 138, at 1601 (finding that severity of injury had no effect on likelihood of payment to anesthesiology malpractice claimants, but quality of care did, with at least some payment being made 82% of the time when care was found to be substandard but only 42% of the time when care was judged to be within standard); Henry S. Farber & Michelle J. White, *Medical Malpractice: An Empirical Examination of the Litigation Process*, 22 RAND J. ECON. 199, 216 (1991) ("[S]trong evidence [suggests] that negligence, as measured by

A number of studies compare settlement (and trial) awards to independent assessments of the plaintiff's damages. Perhaps the most recent and analytically complete work in this genre is a series of studies by Rand researchers on aviation accidents.[234] Plane crashes provide a useful context for the study of tort settlements because many of the usual uncertainties of contested cases are obviated. When a commercial airplane crashes, liability rarely is disputed and contributory negligence is not an issue. Also, because the great majority of victims die, and die quickly, the losses are simplified. The dispute comes down to the amount to be paid.

The Rand researchers first computed losses. They defined and calculated losses using the "full economic loss" or human capital approach. This method is more conservative and conventional than the alternative method, the market approach.[235] It is also the compensation principle for the deterrence objective of tort law. The human capital approach measures the present value of the decedent's before-tax market earnings and non-market services.[236] Because these calculations focus exclusively on economic loss and therefore omit valuations for loss of consortium, mental anguish, and other "non-economic" losses, one would expect to find that settlements and awards would, on average, tend to exceed economic losses, but the reverse occurs—"compensation, on average, falls far below economic loss."[237]

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care quality, plays an important role in the negotiation and dispute resolution process in medical malpractice cases faced by one hospital. The hospital's expected liability for damage is 25 times as high on average in cases where negligence occurred . . . than in cases where it did not . . . .").

[234] *See* JAMES S. KAKALIK ET AL., COSTS AND COMPENSATION PAID IN AVIATION ACCIDENT LITIGATION 86-95 (1988); ELIZABETH M. KING & JAMES P. SMITH, COMPUTING ECONOMIC LOSS IN CASES OF WRONGFUL DEATH (1988) (giving computational details); ELIZABETH M. KING & JAMES P. SMITH, ECONOMIC LOSS AND COMPENSATION IN AVIATION ACCIDENTS 100-04 (1988) [hereinafter AVIATION ACCIDENTS].

[235] *See* AVIATION ACCIDENTS, *supra* note 234, at vi. The alternative approach, the market approach, calculates "loss to survivors." The market approach turns from what the injurer should pay in order to be optimally deterred to what the plaintiff should receive in order to be compensated. It is the economic principle that better corresponds to the compensation objective of tort law. It is composed of the present value of provable contributions the deceased, had he or she lived, would have made to the survivors. *See id.* at vii.

[236] *See id.* at vi. The authors note that although this approach is less well-grounded in economic theory and produces smaller estimates of the value of human life, it is the approach favored by courts. *See id.*

[237] *Id.* at vii. While Rand's calculations are conservative in one sense, they are not in another. The question is whether one should count what the law says it counts or

Based on the human capital approach to valuing lost life, "on average, tortfeasors in our airliner accidents paid out twenty-six cents for every dollar of social cost incurred."[238] Based on the market approach, compensation came to seven cents per dollar of the true loss.[239] From these payments must be deducted legal fees, which averaged 20% of the amount paid.[240] Over time, constant dollar payments from defendants to survivors did, indeed, increase.[241] At every point in time, however, they represented underpayment relative to survivor losses.[242]

TABLE V[243]

COMPENSATION AND LITIGATION EXPENDITURES IN RELATION TO ECONOMIC LOSS TO SURVIVORS (IN AIRCRAFT ACCIDENT CASES)

Economic Loss to Survivors (in 000's)	Midpoint	N	Mean Compensation per Death	Compensation as percent of Economic Loss
00-99	50000	519	148160	296
100-249	175000	376	192620	110
250-499	375000	267	255049	68
500-749	625000	144	362334	58
750-999	875000	126	468449	54
1000-1499	1250000	177	585598	47
1500-1999	1750000	109	822395	47
2000 plus	2250000	265	867098	39

what it usually does count. These researchers chose to take the law at its word rather than by its deed.

[238] *Id.* at xvii.

[239] *See id.* An interesting sidelight is that the study was commissioned by aircraft manufacturers who thought they were being taken to the cleaners by lawsuits. This suggests that the manufacturers genuinely did not appreciate the advantage they enjoyed in the existing tort system.

[240] *See id.* at xviii. To some degree, this undercompensation is supposed to reflect the discount for settling rather than going to trial. Since the survivors receive their money sooner, the defendant pays less. Whether the plaintiffs really are willing to give up 74 cents on each dollar in order to receive payment sooner rather than later is not clear. The gap between the discount the plaintiffs might be willing to give up versus the discount they do allow may reflect an irrationality that occurs in settlement and is not essential to the process.

[241] *See id.* at xix.

[242] *See id.* at xx.

[243] The data for Table V come from KAKALIK ET AL., *supra* note 234, at 58 tbl. 4.7.

Another remarkable pattern is the amount of compensation across the range of economic loss. As Table V shows, overcompensation occurs at the low end of the range of economic losses. In the $100,000-249,000 range, settlements are approximately equal to losses. Where economic losses exceed $250,000, undercompensation occurs. Indeed, the higher the actual economic loss, the lower the award as a proportion of what is due.

This pattern of overcompensation at the lower end of the range and undercompensation at the higher end is so well replicated that it qualifies as one of the major empirical phenomena of tort litigation ready for theoretical attention. Cognitive psychology provides a possible explanation for this error. People are poor at estimating amounts that require intuitive exponential adjustments.[244] Amounts may grow exponentially, but our cognitive apparatus makes linear estimations. Figure VIII illustrates, with hypothetical data, the growing divergence between linear and exponential estimations of lost income over time. People are likewise poor at estimating power functions or at intuitive compounding.[245] If the negotiators in these air crash cases relied on intuitive estimates of future lost earnings, rather than explicit calculations, their resulting figures might be low end overestimates and would certainly be high end underestimates.[246] An alternative explanation may be popular notions of social justice. People may feel that no life is worth less than some amount (and therefore they overcompensate those legally entitled to what they see as too little). At the opposite extreme, people may feel that no life is worth "that much" and so they progressively shave amounts down from what the legal entitlement really is.[247]

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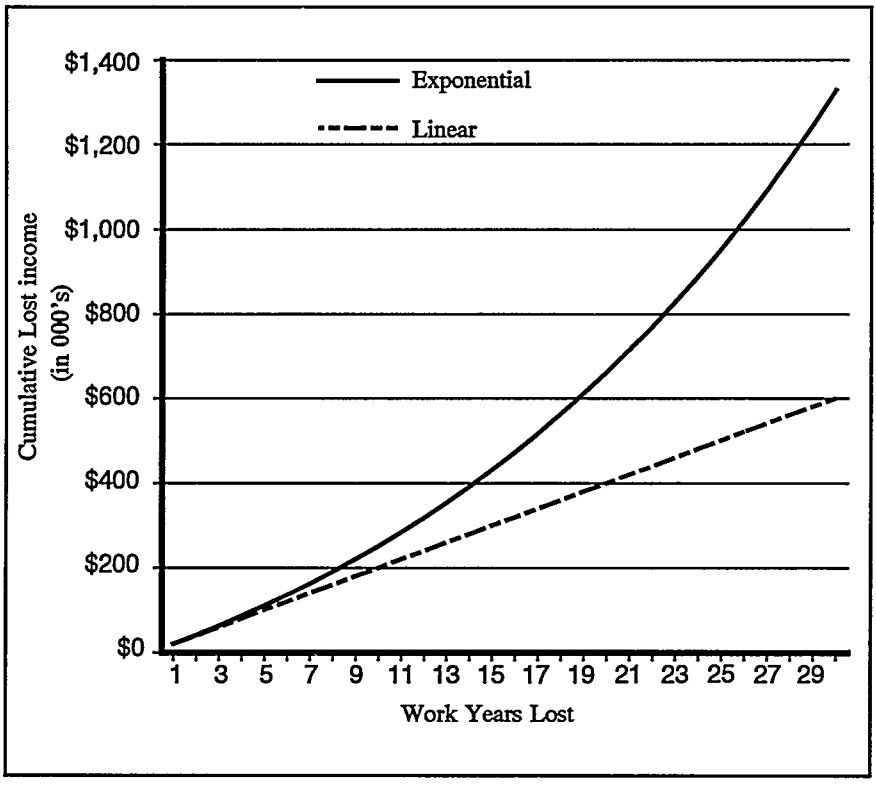
[244] Intuitive decision-makers are believed to make such estimates by starting with a salient amount (an "anchor") and then adjusting upward or downward on the basis of various factors. For a discussion of anchoring and adjustment, see Saks & Kidd, *supra* note 36, at 140-42.

[245] To suggest another example: if asked to estimate what a $1.25 loaf of bread will cost in 100 years at an annual inflation rate of 5%, most people would arrive at an amount well below the correct figure of $164.38. (The reader is invited to test this on whoever may be nearby).

[246] Some evidence that the negotiation process is a rough and intuitive one comes from Genn's study of tort bargaining in Britain. *See* GENN, *supra* note 226, at 134. She observes: "The nature of bargaining in the field of personal injuries claims is relatively crude." *Id.* She continues, "tactics appear to be limited to a preliminary search for information about the strength of the other side's case, followed by relatively inelegant haggling over sums where it was clear that some compromise was capable of being achieved." *Id.* at 135.

[247] This alternative explanation was suggested to me by Professor Oliver Houck.

FIGURE VIII
CUMULATIVE LOST INCOME BY LINEAR ESTIMATION
VS. EXPONENTIAL CALCULATION



Moreover, these undercompensations result in considerable cumulative gaps between victim losses and defendant payments. In the sample of aviation cases studied, the balance of non-payments favoring defendants totals over $650 million.[248] Aviation accident

[248] By multiplying the errors presented in Table V by their number (N cases), we see that the net underpayment by defendants in these 1983 cases totals over $650 million:

AGGREGATE OVER- AND UNDER-PAYMENT IN THE SAMPLE OF AIR CRASH CASES

Economic Loss to Survivors (in $000's)	Total Over- or (Under-) Payment
00-99	$50,945,040
100-249	$6,625,120

cases represent the tort category with perhaps the highest rate of claims per accident and the highest proportion of paid claims. As we have seen in medical malpractice, for example, approximately 10% of injured parties claim and half or fewer of those receive any compensation.[249] If that compensation is similarly undervalued, then the aggregate compensation paid in medical malpractice will be a vastly smaller fraction of the total costs incurred than the aviation accident fraction. Such errors of underpayment of economic damages can be multiplied across the tens of thousands of cases where injurers are or would be liable for the injuries.[250]

Recent research on automobile crash cases found that under either tort or no-fault regimes, compensation—unless reduced by payments from other sources or contributory negligence of the claimant—came closer to the total of the victim's entitlement than in the air crash cases.[251] The settlements increased as medical costs, time lost from work, extent of disability, and attorney representation increased.[252] Moreover, claimants received about 93% of their economic loss, in both no-fault and tort jurisdictions.[253] These data reflect the same pattern of low end overpayment and high end underpayment that we have seen before. Here too, more undercompensation than overcompensation occurred. Interestingly, this distortion, while present in both tort and no-fault jurisdictions, is less exaggerated in no-fault jurisdictions.[254]

250-499	($32,026,917)
500-749	($37,823,904)
750-999	($51,225,426)
1000-1499	($117,599,154)
1500-1999	($101,108,945)
2000-plus	($368,059,030)
TOTAL	($650,273,216)

[249] *See supra* notes 103-06 and accompanying text.

[250] Compare these data showing systematic underpayment with assertions about "dramatic, often breathtaking, jury awards and settlements." COMMITTEE TO STUDY MEDICAL PROFESSIONAL LIABILITY, *supra* note 26, at 3.

[251] *See* JAMES K. HAMMIT, AUTOMOBILE ACCIDENT COMPENSATION: PAYMENTS BY AUTO INSURERS 45-46 (1985).

[252] *See id.* at 33-41.

[253] *See id.* at 45. When the amount for general (non-economic) damages was added in, claimants received up to $3.20 for every dollar of economic loss. *See id.*

[254] *See id.*; *see also* ALFRED F. CONARD ET AL., AUTOMOBILE ACCIDENT COSTS AND PAYMENTS: STUDIES IN THE ECONOMICS OF INJURY REPARATION 248-52 (1964) (an older study in this line of research). In Conard's data, too, small losses were overcompensated and large losses were undercompensated. *See id.* In these 1958 data, however, overall undercompensation was greater than in Hammit's data on

Consider the implications of these findings for the debate about our liability system. In cases that generally involve smaller losses (such as auto cases) we should expect to see the least undercompensation. In higher stakes cases, such as air crashes, product liability, and medical malpractice, the undercompensation will be dramatic. Ironically, few have expressed concern over damage payments in auto crashes, where defendants pay a larger proportion of the actual losses. Concern is voiced, instead, for the high stakes cases, where undercompensation is far more pronounced.[255] Perhaps this paradoxical situation arises because defendants and insurers do not compare what they pay to the injury costs suffered by those who bring valid claims—or, indeed, to the full base of injury costs inflicted—and then bask in the advantage of undercompensation they enjoy. Instead, defendants and insurers compare what they pay today to what they paid yesterday and discover that those expenditures have increased. What seems to catch their attention is an apparently rising tide of settlement and award amounts. In low stakes cases, there is little room to rise because the initial gap is not large or there is overcompensation. In high stakes cases there is much more room for rises to occur; a large gap exists to be filled.[256]

The relationship between settlements and verdicts might cast light on several issues about the litigation process. First, if negotiators are doing their jobs well, in economic terms, settlements ought to reflect a discounted assessment of trial awards. Defendants should be willing to settle only if the amount they would pay in settlement is less than what they would expect to have to pay following trial. Plaintiffs, on the other hand, ought to be willing to accept less than the amount they would expect to win at trial because doing so permits them to avoid the uncertainty associated

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crashes in the 1980s.

[255] *See* Michael Wines, *Bush Unveils Plan for Health Care*, N.Y. TIMES, Feb. 7, 1992, at A1 (citing the President's plan to save on health care by changing malpractice laws); *see also* Milt Freudenheim, *Executives Skeptical on Bush Health Plan*, N.Y. TIMES, Feb. 10, 1992, at D1 (evaluating the President's plan for "limiting payments in medical malpractice lawsuits").

[256] Medical malpractice cases are perhaps most likely to incur a double whammy: Not only is there room for an undercompensation gap to be filled, but because medical malpractice involves one of the lowest ratios of claims to injuries, the sheer number of claims can rise greatly to close that gap. The closing of the actionable injury-to-claim gap multiplied by the closing of the high-end undercompensation gap will register as an enormous increase in costs. But in proportional terms, it will merely make medical malpractice cases behave more like auto crash cases.

with going to trial and it allows them to have their money, albeit a smaller amount, much sooner.[257]

Some of the available data are consistent with these expectations. For example, the massive undercompensation of injuries seen in the Rand aircraft settlement data may make sense in light of the fact that they are the product of settlements.[258] Had the plaintiffs insisted on something closer to the true value of their losses, a settlement would have been less likely. Similarly, the Wisconsin Civil Litigation Research Project found this expected pattern in the settlement of the wide array of suits they studied.[259]

On the other hand, some studies do not demonstrate the expected effect. In Rand's 1985 study of auto crash cases, 2% of the cases went to trial.[260] The average awards for these cases were approximately equal to those for comparable settled cases.[261] Similarly, King and Smith found those air crash cases that went to trial resulted in an average recovery of 44% of the actual loss, compared to 48% in cases settled without a lawsuit and 50% in cases settled following the filing of a suit.[262] These studies reveal a surprising absence of the expected discount.

Although it commonly is asserted that lawyers and insurance adjusters "know what a case is worth," and that this knowledge is based on their ability, borne of experience, to predict what a judge or jury would award, this may be legal folklore. While this claim may be helpful in maintaining professional mystification, how well lawyers and adjusters really perform remains to be demonstrated. First of all, there appears to be no empirical evidence directly supporting the existence of such skills. In addition, consider some of the evidence against their existence: Insurance claims adjustors vary widely in the value they place on the same case. In studies of auto and plane crashes, lawyers are found not to be settling for less than the comparable trial awards. Furthermore, some data suggest that judges, who once were lawyers and now observe more jury trials than any litigator does, overpredicted (by a wide margin) what juries would award in a sample of personal injury trials—that is, the juries

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[257] *See* Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399, 420 (1973).

[258] *See* AVIATION ACCIDENTS, *supra* note 234, at 74-75.

[259] *See* CIVIL LITIGATION RESEARCH PROJECT, *supra* note 107, at S-21.

[260] *See* HAMMIT, *supra* note 251, at 26. About 1% of the claims were tried to verdict. *See id.* at 6.

[261] *See id.* at 74.

[262] *See* AVIATION ACCIDENTS, *supra* note 234, at 76.

consistently awarded less than the judges predicted they would award.[263]

Finally, from where could the feedback come that supplies this negotiating expertise? The average active litigator tries only a handful of cases each year. If a personal injury litigator disposes of one hundred cases per year, one every two-and-a-half week days, of which ten are resolved by a trial verdict, and half of those are defendants' verdicts, then feedback about awards is possible from only five cases.[264] Because those five cases will differ from each other on many dimensions, it will be difficult to attribute the amount of the award to any of the many factors.[265] Moreover, the feedback loop from juries is an infrequent and a fuzzy one.[266] A trial lawyer's situation is similar to that of a blindfolded archer who is permitted to see the target only 5% of the time, and then only through a fog at dusk. If relevant data were developed that demonstrated that cases are settled for a fairly consistent percentage of jury awards, those data could simply reflect the fact that lawyers and juries are looking at the same cases with the same losses. This is, however, quite different from lawyers *predicting* jury awards. Negotiators may nonetheless develop consistent and confident patterns of "what a case is worth," but such patterns would be based on the negotiating culture, not on predictions of jury awards. The

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[263] *See* NATIONAL CTR. FOR STATE COURTS & JUDICIAL COUNCIL OF CAL., A COMPARISON OF THE PERFORMANCE OF EIGHT- AND TWELVE-PERSON JURIES 71-72 (1990). Perhaps the judges' direct observations of juries had been outweighed by what judges *heard* about juries being out of control and they erroneously adjust upward. The juries, meanwhile, having not heard that they were supposed to be out of control, continued to assess modest damages. Lawyers, erring like the judges, overvalue cases relative to their past settlement value, although they still undervalue them relative to true losses.

Another study examined the ability of attorneys on both sides of 482 cases across the United States, about half civil and half criminal, to predict outcomes of their own cases. Their predictions were then compared to the actual eventual outcomes. For civil cases more than three months from resolution, predictive accuracy was essentially zero. *See* Stephen Teller et al., Attorney Case Assessments: Quality of Predictions by Attorney Type and Time to Trial, Presentation at the Biennial Meeting of the American Psychology/Law Society (March 1992); Stephen A. Teller, Predictions of Near and Distant Future Event Outcomes by Attorneys, Law Students, and Undergraduates 24 (1991) (unpublished M. Psychol. thesis, University of Washington).

[264] My informal poll of litigators from several cities, including Washington, Baltimore, Columbus, and San Francisco, suggests that my hypothetical overestimates the number of cases tried per year.

[265] Such dimensions include the characteristics of the parties, the circumstances, the cause and extent of the injuries, the theory of the case, and a multitude of other potentially important differences in the fact pattern of each case.

[266] *See* Galanter, *supra* note 214, at 16-18.

norms of the negotiating culture may, therefore, react slowly to changes in actual jury awards. Alternatively, these norms may reflect a belief that there have been changes in jury awards that have not, in fact, occurred.

Research comparing settlements with verdicts could test other issues as well. The possibility that many of the alleged changes in tort verdicts and awards are in actuality the product of a changing mix of cases could be tested in light of the frame of reference provided by settlements—that is, changes in verdicts over time could be compared with changes in settlements over the same period. For example, if settlement amounts rise at the same time and rate as jury awards, more reason exists to attribute the increase to a changing case mix, rather than to the jurors' increased generosity. Such an approach would be particularly informative since cases from the same filing cohort will settle sooner than those that are tried; settlements would be an early warning system for expected changes in trial awards, rather than the reverse. By comparing actual jury verdicts with the jury verdicts expected through extrapolation from settlements, we could determine whether jury verdicts were climbing faster than expected, as expected, or slower than expected.[267] This method would provide a better test of supposed changes in jury behavior than any research yet undertaken on the question.

Because we are examining a system, changes in other parts of the system, as well as real and mistaken feedback loops, complicate the analysis. For example, lawyers may change their settlement practices due to what they mistakenly believe is a change in jury decisions. They will attribute these changes in their own behavior to changes in jury behavior. In addition, as previously noted, lawyers might change the mix of cases going to juries even if the mix of cases being filed remains the same. This could be verified only by monitoring the nature and value of cases entering the system, a very complicated proposition. Such monitoring, however, would simplify and clarify the behavior of lawyers and jurors.

Since settlements, as compared to filings and verdicts, are currently rarely studied, it is easy to assume that settlement practices have not changed. If settlement practices were studied,

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[267] Settlements would provide a better statistical control than, for example, the Consumer Price Index (CPI). Although the CPI tracks overall inflation and the medical CPI tracks medical costs, settlement amounts respond to the actual pool of cases in a given jurisdiction and to the actual losses in those cases.

however, changes would be noted, leading to proposed explanations of their causes and their effects. We remain largely ignorant about settlement patterns and their relationship to the rest of the system.

F. *Liability Verdicts at Trial*

FIGURE IX[268]
FLOW OF MEDICAL MALPRACTICE CASES THROUGH PART OF THE LITIGATION SYSTEM

	Negligent Iatrogenic Injury	
	Present	Absent
Base of actionable injuries	10,000*	1,000,000*
Decisions to claim		
Prospective cases presented to lawyers	400	2,400
Lawsuits filed	200*	800*
Settlements negotiated	(170)	(730)
Trials commenced	30*	70*
Trial Verdict for Plaintiff		
Trial Verdict for Defendant		
Awards		
Changes from additur/remittitur review		
Appeals		
Compensation paid		

Although trials are the legal system's iconographic center, they also are its chief aberration. Fewer than ten cases in one hundred

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[268] For a discussion of the estimates used in Figure IX, see *supra* note 146. *See also supra* notes 85-91 and accompanying text (summarizing several studies of medical malpractice case disposition). Empirically determined ratios are indicated with an asterisk; the remaining ratios are estimated.

proceed to trial. The great majority are resolved through negotiated settlements. Figure IX places into perspective where cases have been before they reach the trial stage.[269] Out of 10,000 actionable negligent injuries, approximately 9600 disappeared when injury victims did not pursue a claim. Half of those that were presented to attorneys never became filed lawsuits. Of the 200 cases filed (2% of those negligently injured), 170 will be settled, paying most plaintiffs less than their actual losses. Trials will commence for about thirty of these cases. Of the 1,000,000 patients who were not negligently injured, an estimated 2400 will mistakenly regard their injuries as resulting from negligence, and about one third of those become filed lawsuits. For a variety of reasons, cases in the without-merit column will leave the system at the negotiation stage more readily than those with merit. One hundred cases (10% of those filed) will reach trial. Those that lack merit will outnumber those with merit.

Is this a picture of a system that does a good or a poor job of sorting cases? Recall my earlier observation that these medical malpractice cases ought to be the most difficult ones for the system to handle.[270] If the system can handle medical malpractice with reasonable "accuracy," it probably can handle almost anything. In the pretrial stages of the process, few cases lacking merit are brought to the system or tend to be rejected by plaintiffs' lawyers. The system's greatest error is that an enormous number of persons who have been negligently injured will not receive the compensation that would be due them if they exercised their right to claim and had been able to find a lawyer willing to represent them. Before the complaints are filed at the courthouse, defendants are billions of dollars ahead of where, under the law, they might expect to be. Since so many cases are resolved through negotiated settlements, the principal focus of attention for evaluating the system might be whether settlements reflect damages discounted by the probability that liability could be proved at trial. I know of no data addressing the correlation between the amount for which cases are settled and the amount for which they ought to be settled.[271]

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[269] *See supra* note 268.

[270] *See supra* note 127 and accompanying text. Inpatient medical treatment, for example, even when done perfectly well, can be expected to result in untoward outcomes approximately 3% of the time. Such grim prospects do not confront one watching television or driving in the family car.

[271] Insurance company data reveal that about half of the malpractice cases that are filed are dismissed without any payment to the plaintiff. *See* DANZON, *supra* note 6,

Of the cases that finally arrive at trial for the judge or jury to take their turn at sorting, in which ones is liability found and why? Can we explain and predict trial outcomes? Or are they random and unpredictable? If patterns exist, have they changed over time?

Little broad and systematic data on federal trial outcomes were available until recently—too recently to follow trends across time or try to explain those trends. The federal courts did not begin recording data on trial outcomes until 1979.[272] Similarly, few, if any, state courts collected data on trial outcomes, and this continues to be the case.[273] This lack of data is precisely what led some researchers to undertake many of the recent studies that are discussed in this Article.[274]

From the data of the Administrative Office of the United States Courts, it cannot be determined how many cases were resolved by a trial verdict, only how many resolutions occurred at various stages, including "during or after trial." The number of such dispositions increases, of course, as the number of filings increases. Interestingly, however, these represent a decreasing fraction of filed cases; that is, over time proportionately fewer cases have been reaching trial.[275]

From reports of the National Center for State Courts, we cannot learn about trials or verdict trends over time, but we do have an important snapshot of the mode of disposition of tort litigation in

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at 42. Most of those would be expected to come from the right-hand column of our table, but no study has considered this.

[272] *See* Clermont & Eisenberg, *supra* note 15.

[273] *See* NCSC 1988 REPORT, *supra* note 20, at 51-53, 59-63. I wrote to the office of the court administrator of each state requesting the information or reference to publications in which the data appear. Not one administrator replied that they collected such data before the 1980s and most still do not collect these data.

[274] Among these are most of the Rand Corporation studies cited throughout this Article, the American Bar Foundation's studies (conducted by Daniels & Martin), and some of the NCSC's studies. *See, e.g.*, MICHAEL G. SHANLEY & MARK A. PETERSON, COMPARATIVE JUSTICE: CIVIL JURY VERDICTS IN SAN FRANCISCO AND COOK COUNTIES, 1959-1980, at 1 (1983) ("Concern about how juries decide civil claims has led us to study jury decisions in Cook County, Illinois."); Daniels & Martin, *supra* note 25, at 321 ("Our interest is in the one part of the civil justice system which reformers have identified as a key indicator of system failure—the behavior of juries."). This absence of information itself stands as one of the most important findings concerning liability verdicts. Without basic data on trial verdicts and awards, informed consideration about the nature or existence of a liability crisis is not possible.

[275] *See* Galanter, *supra* note 159, at 947-48 & n.100. In 1940, 15.2% of cases terminated "during or after trial;" in 1950, that figure fell to 12.8%; in the beginning of the 1960s the figure decreased to 11%; and by 1986 it was only 4.4%. *See id.*

thirty-eight urban trial courts during one month in 1988.[276] Overall, only 4.8% of tort cases were resolved by a trial verdict.[277] Medical malpractice cases stood out as the most likely to go to a trial verdict (11.1%).[278] Thus, even the most hotly contested category of cases is usually resolved short of a trial. Product liability cases were among the least likely to require a trial (3.9%), the most likely to be uncontested (6.2%), and, therefore, the most likely to result in a default judgment.[279] Most cases, of course, are settled or dismissed. In the federal system, in comparing the number of terminations during or after trial with the number of filings, Galanter found that torts is one of the case types least easily settled, with about 10-12% entering the trial stage in recent years.[280]

In another geographically broad-ranging but temporally limited study of state court trials, Daniels and Martin found tort success rates varied considerably from place to place, from a low of about 40% to a high of nearly 80%.[281] On the whole, plaintiffs win more trials.[282] In only four counties, did defendants win more often than plaintiffs.[283] In thirty of forty-three counties, the range for plaintiff success was between 55% and 65%.[284] In only three sites,

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[276] *See* Rottman, *supra* note 195, at 4.

[277] *See id.* at 6.

[278] *See id.* at 8-10.

[279] *See id.*

[280] *See* Galanter, *supra* note 159, at 949 fig. 10 (the 10-12% for torts compares to 6-8% of contract cases and 2-4% of social security cases).

[281] *See* Stephen Daniels & Joanne Martin, *Civil Jury Awards Are Not Out of Control: And Here Is the Data*, 26 JUDGES' J. 10, 13 tbl. 1 (1987); Daniels & Martin, *supra* note 25, at 328 (data coming from local jury verdict reporters in 43 counties in 10 states, and spanning the period from 1981-1985).

When these tort trials are disaggregated into types of torts, vehicular accidents are found to be the most frequent kind of case in every site (and have the highest proportion of plaintiff wins.) *See id.* at 333-35. Product liability cases account for fewer than 10% of the cases in all sites, and fewer than 5% of the cases in 34 of the 43 sites. *See id.* Medical malpractice trials constitute fewer than 10% of the trials everywhere except in New York City (where they constitute as many as 17.6% of the tort trials). *See id.*

The overall tort success rates for plaintiffs varied considerably, from highs of 78.9% (Skagit County, WA) and 71.9% (Bronx County, NY) to lows of 39.7% (Westchester County, NY) and 43.9% (Nassau County, NY). *See id.* at 329-31. The variation in success rates is at least as great between counties within states as it is between states. *See id.* This suggests that differences in local circumstances within and around the litigation system are equally or more determinative of who wins as is the substantive law. *See id.* at 332-33.

[282] *See* Daniels & Martin, *supra* note 25, at 330-33.

[283] *See id.*

[284] *See id.* at 329-31.

did plaintiffs win more than 65% of the time.[285] At least over the five years these data cover, no trends were apparent. More impressive than the lack of any consistent trend over time is the variation among sites and states. The greatest consistency appears to be that which exists within each county site, suggesting stable local conditions and decision patterns.[286]

Rand researchers have focused on trials in San Francisco and Cook County, Illinois. Although geographically more limited, these studies spanned a longer time period (1959-1979) than those of Daniels and Martin. The number of trials in both Cook County and San Francisco showed marked fluctuations from year to year, but the long term trend in both places was similar: "Both caseloads peaked in the mid-1960s, then declined during the rest of the period."[287] The case mix changed in both counties, however, so that some kinds of torts were becoming an increasing fraction of the trials, some remaining stable, and others decreasing.[288] The proportion of San Francisco verdicts favoring plaintiffs varied over the years between 52% and 64%, with no discernible trend.[289] Verdict ratios in Cook County also stayed within a fairly narrow range, although this range was closer to 50/50, and a slight trend toward more plaintiff victories was detected.[290]

The overall stability of these verdict ratios masked differences associated with the various types of cases. For example, although plaintiffs were winning an increasing proportion of automobile accident cases, fewer of these cases were coming to trial.[291] Conversely, although plaintiffs were winning a decreasing propor-

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[285] *See id.*

[286] *See id.* at 343-45.

[287] SHANLEY & PETERSON, *supra* note 274, at 20. To give a sense of the number of trials we are talking about, up until the mid-1970s, San Francisco averaged 290 jury trials per year. In 1978, the number dropped to 158. In 1979, it was 210. *See id.* at 19.

[288] *See id.* at 20-22. For example, among those on the rise in San Francisco were intentional torts, contract/business cases, and product liability cases. *See id.* Malpractice was stable. *See id.* Among those decreasing were worker injury, injury on property, and automobile accident cases (although automobile cases were by far the largest single category). *See id.*

[289] *See id.* at 23-26.

[290] *See id.* at 23-24. Compare these data with the following: "[T]he scales [of justice] have been totally tipped to the plaintiffs." *Hearings to Consider S. 2760, the Product Liability Act Before the Senate Judiciary Comm.*, 99th Cong., 2d Sess. 97 (1986) (statement of James K. Coyne, President of the American Tort Reform Association).

[291] *See* SHANLEY & PETERSON, *supra* note 274, at 21, 24-25.

tion of product liability cases, more were coming to trial.[292] If nothing else, the differences in success rates between case types makes assertions of a sea change in favorability toward plaintiffs highly doubtful.[293]

Because of their reliance on *jury* verdict reporters, the researchers of the state cases studied do not account for judges' verdicts, even though in half of the states for which data exist judges decide more tort cases than juries do.[294] In the federal courts, Clermont and Eisenberg found that tort cases tried before judges were more likely to result in liability verdicts than those tried before juries. This result was most pronounced for medical malpractice and product liability cases.[295] Judge decision-making has been largely

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[292] *See id.*

[293] *See* MARK A. PETERSON & GEORGE L. PRIEST, THE CIVIL JURY: TRENDS IN TRIALS AND VERDICTS, COOK COUNTY, ILLINOIS, 1960-1979, at 33-57 (1982); SHANLEY & PETERSON, *supra* note 274, at 50-74. The trend analyses are by eyeball only; the authors did not conduct statistical tests. Like the Daniels and Martin data, these were obtained by using local jury verdict reporters. *See* Daniels & Martin, *supra* note 281, at 286; Daniels & Martin, *supra* note 25, at 328. It is worth noting that the two sites in the Rand study are major urban counties in highly industrialized states. *See* SHANLEY & PETERSON, *supra* note 274, at 20. Therefore, we should be cautious about generalizing the results.

[294] *See* NCSC 1988 REPORT, *supra* note 20, at 59-60. The Report produces the following table:

PERCENTAGE OF CIVIL DISPOSITIONS REACHED AT TRIAL, 1988

State	By Jury	By Judge
California	1.6	2.3
Florida	4.7	1.0
Hawaii	1.9	0.9
Massachusetts	2.3	4.2
Michigan	2.9	0.4
Minnesota	4.5	11.8
Ohio	3.2	4.1
Texas	3.9	9.5
Washington	4.6	1.8
Wisconsin	4.1	1.4

See id. at 60 tbl. 8.

[295] *See* Clermont & Eisenberg, *supra* note 15. For most categories of litigation, there is no significant difference in the plaintiff's success rate before juries or before judges (that is, a ratio of about 1.00 in the finding of liability by judges for every one by juries). The two categories in which judges find for plaintiffs significantly more often than do juries are medical malpractice (a ratio of 1.72) and product liability (1.71). *See id.* As the authors point out, interpretation of these findings is difficult given the present evidence. The confounding of case and decision-maker makes it impossible to determine from these whether the reason for the differences is who

neglected in studies of the tort system, suggesting that juries have been serving well their function as a lightning rod for the judiciary.

Excessive interest in jury trials may also distract us from what appellate judges do when their turn comes to sort cases. In a study of 3542 published product liability cases that went to appeal, Henderson and Eisenberg found that in both 1976 and 1983, defendants were successful about 51% of the time.[296] That rate of success improved steadily so that by 1988, defendants were winning 63.4% of the time.[297]

With such limited data, it is impossible to draw informed conclusions about the number or outcomes of trials over time, in different places, or for different categories of torts. Even if complete data on trials were available, however, such information would reveal very little about juries or the litigation system. Verdicts turn largely on the evidence skew in the cases and, in the aggregate, evidence seen by juries is controlled by the decisions that precede trial. Screening and settlement decisions thus control the verdict ratio more than juries do. For example, if plaintiff attorneys accepted weak cases and defense attorneys refused to settle them, trial verdicts would favor defendants. With no change in jurors or their decision-making, if plaintiff attorneys started accepting stronger cases and the defense continued resisting their settlement, then trial verdicts would shift in the direction of plaintiffs. These changes in trial outcomes would occur independent of changes in the composition of juries or in the psychology of jury decision-making. In short, to know only what happens at trial is to know dangerously little about the litigation system.

On the other hand, certain comparisons of trial decisions to the decisions that precede them could be informative. If we could compare the contents of what arrives at trial (the case mix) and their verdict ratios with comparable ratios at earlier stages of the litigation process, we could learn something about how decisions are made as cases move through the litigation system, with some

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decides or the characteristics of the cases routed to that type of decision-maker. The findings of Kalven and Zeisel indicate a 79% agreement rate between judge and jury liability verdicts in personal injury cases. *See* HARRY KALVEN, JR. & HANS ZEISEL, THE AMERICAN JURY 64 n.12 (1966). Their results are unconfounded, but they are also a generation old.

[296] *See* James A. Henderson, Jr. & Theodore Eisenberg, *The Quiet Revolution in Products Liability: An Empirical Study of Legal Change*, 37 UCLA L. REV. 479, 504 (1990).

[297] *See id.*

cases being filtered out and others passed on to later decision stages.[298]

To illustrate the difficulty in interpreting most of the studies of trial data, consider the classic research of Kalven and Zeisel, in which 600 judges presiding over 8000 trials were asked to explain how *they* would have decided the case while the jury still was deliberating over its verdict in the same case.[299] Suppose this research had found no correlation whatsoever between judge and jury decisions so that knowing how a judge decided a case provided no guidance whatsoever in predicting how a jury would decide the same case. Such evidence would likely be interpreted to suggest that juries decide completely at random,[300] and that their unpredictability makes them a hazardous legal decision-making institution.[301]

But suppose we inquired into the pre-trial settlement phase that gave rise to the case mix that those juries and judges were deciding. Suppose, further, that we found that the settlement process performed at a high degree of efficiency, perhaps as perfectly as any commentators have ever supposed.[302] That is, cases even slightly favoring plaintiffs were settled favorably for plaintiffs and those even slightly favoring defendants were settled favorably for defendants, with settlements discounted to reflect the strength or weakness of the evidence. The only cases to survive such a settlement process and go on to trial would be a narrow slice of cases on either side of equipoise (those depicted in Figure X-a).

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[298] A recent study of federal trials found approximately the same ratio of plaintiff-to-defendant success in cases terminated on pre-trial motion and at trial, across a wide range of case types. *See* Theodore Eisenberg, *The Relationship Between Plaintiff Success Rates Before Trial and at Trial*, 154 J. ROYAL STAT. SOC'Y SERIES A 111, 113 (1991).

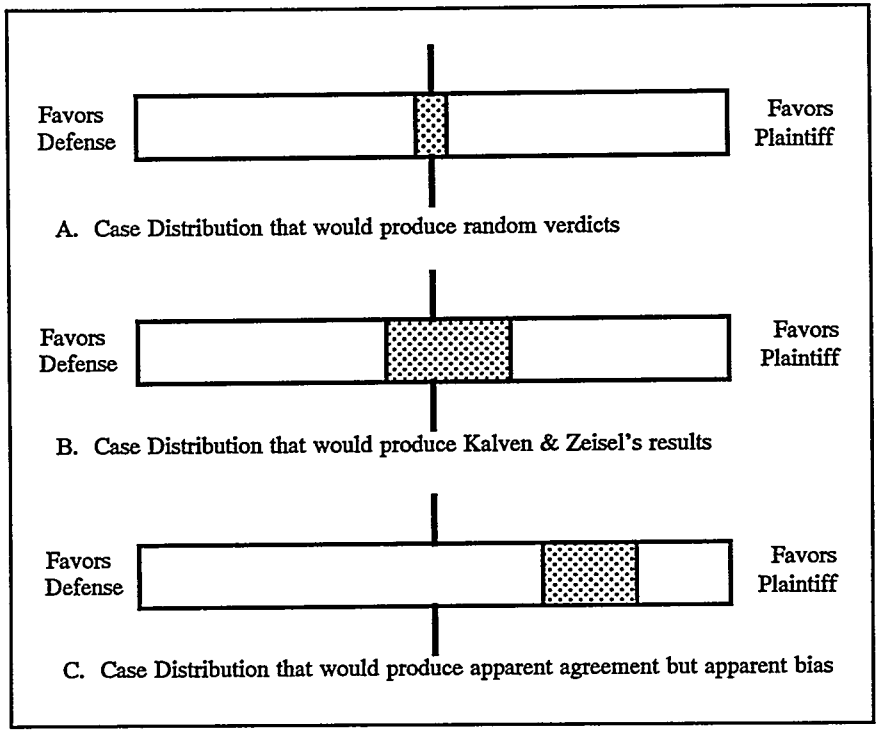
[299] *See* KALVEN & ZEISEL, *supra* note 295, at 113-29; Harry Kalven, Jr., *The Dignity of the Civil Jury*, 50 VA. L. REV. 1055, 1063-68 (1964).

[300] Alternatively, is it not possible that the judges decide randomly?

[301] *See* Michael J. Saks, *Enhancing and Restraining Accuracy in Adjudication*, LAW & CONTEMP. PROBS., Autumn 1988, at 243, 247 [hereinafter Saks, *Enhancing and Restraining Accuracy*] (suggesting that the common distrust of the jury as a legal institution is unwarranted in light of available evidence); Michael J. Saks, *Blaming the Jury*, 75 GEO. L. J. 693, 708-09 (1986) (reviewing VALERIE P. HANS & NEIL VIDMAR, JUDGING THE JURY (1986)).

[302] *See, e.g.*, George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 4 (1984) (suggesting a rational model for litigation).

FIGURE X
ALTERNATIVE DISTRIBUTIONS OF CASES SUBMITTED TO JURIES



How would any rational decision-maker decide such cases? Answer: randomly.[303] If the cases going to trial were so close as to be toss-ups, rational decisions about them would resemble coin tosses. Thus, seemingly random and unpredictable verdicts might merely reflect a highly effective filtering of cases through the settlement process, allowing only the insoluble, too-close-to-call cases to proceed to trial. Moreover, trial outcomes may tell us less about trial decision-making than they do about settlement decision-

[303] A narrow focus on the trial, and in particular the jury trial, rather than on the system, produces the common misperception that juries make random decisions. *See Court to Jury: We're Not in the Lottery Business*, MED. ECON. FOR SURGEONS, Jan. 1985, at 10 (noting a decision by a New York Supreme Court judge sharply reducing a medical malpractice award on the grounds that "'negligence litigation is not a court-sponsored lottery'"); Mortimer B. Zuckerman, *The National Lottery*, U.S. NEWS & WORLD REP., Jan. 27, 1986, at 80 (arguing that damage awards are transforming the courts into a "national lottery").

making. Decisions linked together in a system cannot be interpreted without taking into account the other decision nodes in the system.

Kalven and Zeisel found that judges and juries agreed on personal injury verdicts 79% of the time and that when they reached different verdicts neither systematically favored plaintiffs or defendants.[304] These findings have long been interpreted to suggest that juries understand the evidence about as well as judges,[305] and that neither judges nor juries are more receptive to the claims of either plaintiffs or defendants. But an alternative interpretation is possible: These data might indicate that in the settlement phase, negotiators pass a wider slice of cases along to trial, and the resulting case mix includes more plaintiffs' cases that should have been settled. This situation, illustrated by Figure X-b, occurs when negotiators reach settlements that are less than ideal.

Suppose that defense attorneys began to resist settlement more determinedly. The result would be a mix of cases going to trial that favored plaintiffs more strongly, as in Figure X-c. Consequently, a higher proportion of verdicts by juries, as well as by judges, would favor plaintiffs. The resulting verdict data, considered non-dynamically—that is, without reference to changes in the behavior of other components of the system over time—would be misconstrued as evidencing a growing bias on the part of judges and jurors favoring plaintiffs.

In sum, if trial factfinders are rational, then the content of the cases will determine verdicts and the case mix will determine the verdict ratios. Changes in trial outcomes are more likely to reflect changes in the behavior of earlier phases of the litigation system, notably settlements, than they are to reflect changes in jurors (since changing the nature of the case mix is far easier than changing the nature of people). The more perfectly the litigation system performs, the more random trial outcomes will be.

The larger point is that to offer interpretations of trial outcome data, without taking account of behavior in the system that has preceded trials, is to make assertions about the behavior of juries or

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[304] *See* Kalven, *supra* note 299, at 1065. In 44% of cases, the judge and jury both found for the plaintiff; in 35%, both found for the defendant; in 11%, the jury found for the plaintiff while the judge found for the defendant; and in 10%, the jury found for the defendant and the judge for the plaintiff. *See id.*

[305] For a discussion concerning the size of awards, see *infra* notes 472-73 and accompanying text.

of the system that cannot be inferred from data on trials. Asking questions such as, "Has the number of trials increased over time?" and "Who wins?" can easily produce answers that are either meaningless or misleading.

Questions capable of producing answers that are interpretable and potentially meaningful include: Has the ratio of trials to filings changed?[306] Are trial verdicts determined by the evidence? What is the relationship between liability verdicts at trial and the direction of settlements?[307] What is the relationship between trial awards and the amount of settlements?[308] On only one of these questions does a considerable body of data exist, namely, whether trial verdicts are based rationally on the evidence. As a result of academic research on this issue over the past generation, we know more about jury decision-making than about any other aspect of the legal process.[309]

The best known research on juries, conducted by Kalven and Zeisel, found a rate of agreement of about 80% between the liability decisions of judges and juries in both criminal and civil trials.[310] Recall that these findings derived from the process of having hundreds of judges in thousands of jury trials provide their own

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[306] Galanter's study of federal trial data includes such information. *See* Galanter, *supra* note 159, at 946-50. The study provides an important measure of the efficiency with which the system processes filed cases. Whether the system *should* strive for increased efficiency of this sort is far more difficult to answer. Is it better if people settle their disputes without needing third-party adjudication? Or is it better if disputes are settled in courts, with procedural fairness and under the guidance of more consistent and explicit principles of law? If too many cases go to trial, the legal system would collapse. If too many cases are disposed of short of trial, the system may be deprived of the ability to maintain effective legal rules. *See* Saks, *Enhancing and Restraining Accuracy*, *supra* note 301, at 245-46.

[307] Moreover, are cases understood similarly by jurors and judges and by lawyers?

[308] Are losses appraised similarly by negotiators and adjudicators (with appropriate discounts for settlement)? *See infra* note 484 and accompanying text; *supra* notes 260-61 and accompanying text.

[309] *See* VALERIE P. HANS & NEIL VIDMAR, JUDGING THE JURY (1986) (reviewing much of the research on jury decision-making). The Supreme Court has turned to this body of research in addressing questions involving jury behavior. *See, e.g.*, Ballew v. Georgia, 435 U.S. 223, 230-39 (1978) (reviewing extensively the research on the effects of reduction in jury size on jury verdicts). The Court does not enjoy a similar advantage for most other questions about the litigation system.

[310] *See* KALVEN & ZEISEL, *supra* note 295, at 58; Kalven, *supra* note 299, at 1064-65. It would be interesting to replicate Kalven and Zeisel's study to determine whether the rate of agreement between judge and jury has changed in the past 25 years. Hans and Vidmar have suggested such a study. *See* Valerie P. Hans & Neil Vidmar, The American Jury *at Twenty-Five Years*, 16 LAW & SOC. INQUIRY 323, 347-49 (1991).

assessment of the case while the jury was deliberating so the judges' views could be compared with those of the jury.[311]

Of the basic level of agreement between judges and juries, Kalven observed that "the jury agrees with the judge often enough to be reassuring, yet disagrees often enough to keep it interesting."[312] More refined analyses of the data strengthened the conclusion that the jury understood the evidence (as well as the judge did). Kalven and Zeisel reasoned that if disagreement stemmed from a lack of understanding of the evidence, the disagreement rate should be higher in difficult cases and lower in easy ones. Based on assessments by the trial judges, they classified the cases as "difficult to understand" or "easy" and then repeated the analysis.[313] The disagreement rate remained the same.[314] Moreover, judges rarely cited jury misunderstanding as the reason for the differences in verdict that did occur.[315]

One of the most interesting comparisons may be to ask how the level of concordance between judges and juries compares with data on other decision-makers, such as the rate of inter-judge agreement on sentencing, physician agreement on diagnosing illness, or scientific consensus on the merits of research proposals. The jury compares quite favorably against such benchmarks.[316] The jury's concordance rates are particularly impressive given its unique situation of having to deal with a body of cases from which the easiest 80-95% have been removed.[317] Those other decision-

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[311] Kalven and Zeisel thus brilliantly solved the problem of what a jury's verdict is to be compared with in order to determine its validity. As we saw earlier, in all studies of changing patterns of verdict ratios over time, the vital, but missing, benchmark is some measure of the factual and legal merits of the cases. Apparent increases in plaintiff success may be nothing more than a shift in the mix of cases going to trial toward cases with stronger evidence for plaintiffs. An approach like that of Kalven and Zeisel would offer the possibility of sorting out the causes of the apparent change.

[312] Kalven, *supra* note 299, at 1064.

[313] *See id.* at 1066.

[314] *See id.*

[315] *See id.* at 1067.

[316] *See* Shari Seidman Diamond, *Order in the Court: Consistency in Criminal Decisions*, *in* 2 THE MASTER LECTURE SERIES, PSYCHOLOGY AND THE LAW 119, 125-28 (C. James Scheirer et al. eds., 1983) (reviewing studies finding the following concordance rates: scientists deciding whether proposed research merited funding (75% inter-decisionmaker agreement), employment interviewers (70%), psychiatric diagnosis (70%), physicians' diagnoses (55-65% and 67-77%), federal judges' sentencing decisions (79 and 80%)).

[317] *See supra* notes 213-67 and accompanying text.

makers have the luxury of the full range of their cases, which makes higher concordance rates easier to attain.

A considerable body of research both on actual juries and in well controlled trial simulations supports the conclusion that juries make reasonable and rational decisions.[318] A detailed review is beyond the scope of this Article, but two illustrations of this research are illuminating.

One study collected data on 331 jurors in thirty-eight forcible sexual assault trials, including "information on jurors' background characteristics and attitudes about the criminal justice system and rape as well as their reactions to trial participants and proceedings."[319] Information was also gathered about the evidence presented in each trial. A linear regression model was developed to predict jurors' judgments of guilt using the numerous variables, both legally relevant and extra-legal. The study found that seven evidential variables accounted for 34% of the variance in judgments of guilt, victim and defendant characteristics contributed an additional 8%, and juror characteristics and attitudes caused 2% of the variation in guilt judgments.[320]

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[318] There is reason to believe that in complex cases, a jury can be a better factfinder than a judge. A group can bring deeper and more diverse intellectual resources to a conceptually complex task. *See* Richard O. Lempert, *Civil Juries and Complex Cases: Let's Not Rush to Judgment*, 80 MICH. L. REV. 68, 91-95 (1981) (suggesting that the jury likely provides the most reliable mid-level of performance because as a group it will contain a mix of intelligence and knowledge, while the solitary judge presents the risk of being inferior to, as well as the possibility of being better than, the average jury); Michael J. Saks, *Small-group Decision-making and Complex Information Tasks* (Federal Judicial Center, 1981), *microformed on* Sup. Docs. No. JU13.10:81-1 (U.S. Gov't Printing Office) (reviewing the research literature on small-group decision-making in order to shed light on whether juries are capable of competently deciding complex and protracted civil cases). The advent of the one-day, one-trial jury system, which greatly increases the representativeness of the jury, may have tipped the balance even further in favor of juries. Once juries include engineers or accountants or even high school mathematics or science teachers, it is hard to imagine how the average judge would be able to understand the technical facts of a case better than the average jury.

[319] Christy A. Visher, *Juror Decision Making: The Importance of Evidence*, 11 LAW & HUM. BEHAV. 1, 7 (1987).

[320] *See id.* at 13. Should we applaud the jurors because relevant evidence dominated other factors in their decision-making? Or should we condemn them because the research could not ascertain what accounted for half of the variation in their verdicts? Is the unknown portion the result of imperfections in the research or of random and irrational components of juror decisions? It is clear that both of these factors contribute to the unexplained variance; we should try to determine specifically how much variance each causes.

In a second study, a trial simulation, Colorado jurors were presented with a summary of simulated trial testimony in an age discrimination case. One of three versions of the trial was randomly presented to each juror. In the first version, there was no expert advice on the calculation of damages. In the second version, a plaintiff's expert economist testified to his calculation that the correct award would be $719,354, while the defense made an unsupported argument that the correct amount should be $321,000. In the third version, the plaintiff's expert was countered by a rebuttal expert explaining the basis for the $321,000 recommendation of the defense.[321] The results of this study will be given in the next section.[322]

In general, studies show persistent correlations between evidence and outcomes in many contexts.[323] But while there is substantial predictability, there also is considerable variation within conditions, that is, unpredictability and error. The two are by no means incompatible. While most juries respond to pro-plaintiff evidence with verdicts for the plaintiff, and to pro-defendant evidence with verdicts for the defendant, not all do. The closer the evidence is to equipoise, the greater will be the rate of disagreement among juries. The more extreme the evidence, the greater the proportion of juries that will reach the same verdict.[324]

That is a point rarely written about, but one that every jury researcher must heed. The easiest way to ruin an experiment is to have case facts that lean so far to one side that all the jurors and juries reach the same decision. With no variation in verdicts, it becomes impossible to discern the effect of the variables of interest to the study because the case facts have overwhelmed the decisions. Consequently, for research to be done, the mock case must be titrated to a point of sufficient ambiguity; the very power of case facts must be tamed in order for other variables to be studied.[325]

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[321] *See* Allan Raitz et al., *Determining Damages: The Influence of Expert Testimony on Jurors' Decision Making*, 14 LAW & HUM. BEHAV. 385, 388-89 (1990).

[322] *See infra* note 459.

[323] *See generally* HANS & VIDMAR, *supra* note 309, at 116-20 (analyzing empirical evidence on jury competence).

[324] This relationship, which is true of virtually all decision-makers, itself suggests a rational response to information.

[325] *See* MICHAEL J. SAKS, JURY VERDICTS: THE ROLE OF GROUP SIZE AND SOCIAL DECISION RULE 45-46 (1977) (citing one study that "was so heavily weighted toward the defendant that not a single verdict favored the plaintiff," rendering analysis of independent variable variance impossible).

Data showing a lack of agreement between juries and some other decision-maker provide a familiar basis for criticism of the jury (or the trial) as a decision-making institution. But the issue really must be: With what are jury decisions to be compared? Inter-judge agreement is also far from perfect. Moreover, decision-making in other fields shows rates of error or disagreement that are no better than those of judges and juries.[326] These findings are all the more remarkable when we recall that unlike most decision-makers, trial factfinders receive the most ambiguous and difficult subset of cases.

Without these data, commentators and policy-makers must assess the jury (or the trial) by relying on far more dubious benchmarks. Lawyers will recall cases in which juries decided contrary to their expectations or hopes. Experts will recall occasions on which juries decided contrary to the direction suggested by their testimony.[327] Such commentators forget to compare the jury's performance in the aggregate to the imperfect decision-making of their own fields. They overlook the filtering that has preceded the factfinder's task. Moreover, their own cognitive machinery will operate to recall instances of discordance more readily than instances of concordance.[328] Such anecdotes hardly qualify as any evidence at all.

In the light of more complete and systematic evidence on the jury, it is hard to avoid the unexpected conclusion that juries are one of our society's most reliable decision-making institutions. This conclusion is not undermined by the next paragraph, properly understood.[329]

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[326] *See supra* note 316 and accompanying text.

[327] For example, in an anecdotal report, a physician recalls several verdicts that brought multi-million dollar awards even though he did not consider the defendant surgeon to be negligent. On the other hand, he recalls cases in which he believed the claims were meritorious, yet the jury found for the defendant on the basis of favorable defense testimony "that could only be regarded as less than scientific." *See* Charles A. Fager, *Professional Liability and Potential Liability*, 16 NEUROSURGERY 866, 872 (1985). If these instances of discordance were to be taken as a generally valid description of jury performance, it would lead to the bizarre conclusion that people are more often convinced by bad experts offering bad science than by good experts relating good science.

[328] *See supra* note 36 and accompanying text.

[329] The accuracy of some of our society's tools is regularly overestimated. At the same time, the accuracy of many aspects of the legal process is systematically and enthusiastically underestimated by participants in the legal system as well as by the general public. Why the legal system encourages this view of itself is another interesting puzzle. For one attempt to fathom an answer, see Saks, *Enhancing and*

FIGURE XI[330]
FLOW OF MEDICAL MALPRACTICE CASES THROUGH PART OF THE LITIGATION SYSTEM

	Negligent Iatrogenic Injury	
	Present	Absent
Base of actionable injuries	10,000*	1,000,000*
Decisions to claim		
Prospective cases presented to lawyers	400	2,400
Lawsuits filed	200*	800*
Settlements negotiated	(170)	(730)
Trials commenced	30*	70*
Trial Verdict for Plaintiff	15*	19*
Trial Verdict for Defendant	14*	52*
Awards		
Changes from additur/remittitur review		
Appeals		
Compensation paid		

Let us turn, for the final time, to our chart of the flow of medical malpractice cases through the litigation system. Assume that the one hundred cases that reach trial result in the verdicts displayed in Figure XI. About 34% of the cases have been decided in favor of plaintiffs.[331] That percentage tells us nothing about

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Restraining Accuracy, *supra* note 301, at 271-78.

[330] Empirically determined ratios are indicated with an asterisk. Others are estimated.

[331] *See, e.g.*, PETERSON & PRIEST, *supra* note 293, at 19 tbl. 3 (showing Cook County to range from 26% to 37%, depending on the year); SHANLEY & PETERSON, *supra* note 274, at 25 tbl. 8 (showing San Francisco to range from 27% to 43%, depending on the year); Stephen Daniels, *Tracing the Shadow of the Law: Jury Verdicts in Medical Malpractice Cases*, 14 JUST. SYS. J. 4, 13 (1990) (finding plaintiffs won 32.4% of the

whether or not *correct* decisions were reached. The factfinder might be criticized for reaching more findings of liability that were false positives (nineteen) than true positives (fifteen).[332] On the other hand, defendants won 73% of the cases they should have won, while plaintiffs won only 52% of the cases they should have won, for results that serve the interests of defendants more than of plaintiffs. Overall, 67% of the trial verdicts were decided as they should have been. Would such data indicate that the trial system was doing a satisfactory job of deciding cases?[333]

G. *Awards*

Damage awards by juries have long been a central issue in considerations of the tort litigation system. Debate about a possible liability crisis has similarly emphasized jury awards. The Insurance Information Institute warns of a system characterized by "exorbitant awards and unpredictable results."[334] The U.S. Chamber of Commerce complains of "outrageous awards."[335] An article in America's most prestigious scientific journal asserts:

> At the time of cancellation, the phosphate fiber[336] program director . . . observed that "seven-figure jury awards on claims without merit are enough to send shivers down anyone's spine." The costs of litigation are so high, the uncertainty of courtroom outcomes so great, and the possibility of multimillion dollar

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1886 malpractice jury trials decided in forty-six counties around the nation during a five-year period); Thomas B. Metzloff, *Resolving Malpractice Disputes: Imaging the Jury's Shadow*, LAW & CONTEMP. PROBS., Winter & Spring 1991, at 43, 48-49 & n.16 (reporting results of North Carolina study wherein of 895 malpractice cases filed over three-year period, 118 went to trial and 55 were studied closely; 24% of verdicts favored plaintiffs (35 for the defense, 11 for the plaintiff)).

[332] The debate over trial verdicts focuses almost exclusively on false positives and ignores false negatives.

[333] Should our judgment take into account the fact that 900 cases were removed from the system before reaching trial? The ratio of false positives to true positives in these data is about 1.2:1—that is, for every correct determination of liability, there are 1.2 incorrect determinations. Should our judgment of the trial system be informed by the fact that the comparable ratio for a biomedical test such as that for HIV, which is more than 97% accurate, is about 19:1? *See supra* note 150. Should our evaluation take into account the standard of proof, preponderance of the evidence, which requires that a slight balance of evidence in favor of either party is to result in a judgment in favor of that party?

[334] INSURANCE INFO. INST., *supra* note 24, at 1.

[335] U.S. CHAMBER OF COMMERCE, PUB. NO. 6932, LIABILITY CRISIS PROJECT (1986).

[336] Phosphate fiber is an asbestos substitute.

> awards so real that winning every lawsuit would still have been a Pyrrhic victory.[337]

Jury Verdict Research recorded its first "million dollar" award in 1962; by 1985, 2422 were counted, with 590 in that year alone; by 1989, the total had grown to 4329.[338] Vice President Quayle recently warned that tort litigation is a "system we believe is in danger of spinning out of control."[339]

1. Erroneous Impressions

No one has the data necessary to draw intellectually defensible conclusions about patterns of change in awards or their causes. As we shall see, the impression that damage awards have soared out of control is almost certainly incorrect. Indeed, from the lack of data and reliance on anecdotes and factoids grows a series of misperceptions about the behavior of the legal process.

a. *Misplaced Attention*

Jury awards are a relatively minor part of the litigation system's activity. The rhetoric devoted to juries is vastly out of proportion to the volume of damages they assign. Since only a fraction of filed cases end in trial judgments, and only about half of those result in liability verdicts, jury awards are responsible for a very small proportion of the compensation that defendants pay to plaintiffs. The great bulk of compensation is made through the agreement of the principals and their attorneys. Furthermore, the largest losses due to injuries will never be seen by juries. Cases involving clear liability, grossly negligent injurers, and large damages are almost certain to be settled, and for large amounts.[340]

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[337] Richard J. Mahoney & Stephen E. Littlejohn, *Innovation on Trial: Punitive Damages Versus New Products*, 246 SCIENCE 1395, 1395 (1989) (footnote added). The first author is the Chief Executive Officer of the Monsanto Company. *See id.*

[338] *See* JURY VERDICT RES., PERSONAL INJURY VALUATION HANDBOOKS 19-20 (1991). These are, of course, awards of $1 million or more. Jury Verdict Research's reports on million-dollar awards show a peculiar statistical obsession, doing various breakdowns of the number of these awards over time, by jurisdiction, and by type of case, as if numbers of million-dollar awards really conveyed some meaning.

[339] Quayle, *supra* note 13, at 25.

[340] Such cases will not, however, settle quickly or easily. Frye and Saks's data on malpractice cases suggest that the slowest cases to settle are those presenting the clearest liability and largest likely loss to defendants. *See* Susan Frye & Michael J. Saks, Data and Notes on the Data Analysis (Jan. 13, 1991) (unpublished study, on file with author). One insurer who supplied us with data acknowledged this finding to

Although some will argue that jury awards are inordinately important because they are the tail that wags the dog of settlement, I have discussed earlier why that probably is not nearly so true as so many have so long assumed.[341] That settlements reflect changes in jury behavior to which attorneys are sensitively tuned is a doubtful proposition. Studies of lawyers and judges show that they do not, in fact, know what juries have been doing.[342] Norms concerning the value of cases are far more likely to grow out of interactions among settlement professionals: lawyers, adjusters, consulting economists, and judges.[343] In his study of settlements, Ross found:

> The evaluation of the routine case is strongly affected by understandings common to both adjusters and attorneys concerning an appropriate relationship between settlement and the degree of injury as measured by medical bills. This can be termed the formula method of evaluation. The hospital and physicians' bills are totaled, and are multiplied by an arbitrary coefficient—typically from two to five, depending on the practice of the area—to yield an agreeable figure for the intangibles of the case, the pain and suffering and inconvenience. With represented claimants, a figure of three times the medical bills is sometimes described as allocating one third to the lawyer, one third to the physician, and one third to the claimant.[344]

Indeed, any increase in settlements could easily be the result of misperceptions about jury behavior. If lawyers and adjusters mistakenly believe that jury awards are soaring, they will negotiate settlements more favorable to plaintiffs than they need to or used

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be consistent with its experience. Whether the delay is due to more contentious bargaining in the face of higher stakes, or simply to an economically rational strategy by insurers to delay as long as possible paying large claims, we cannot say.

[341] For a discussion of settlements, see *supra* notes 263-67 and accompanying text.

[342] *See supra* notes 15, 22 & 263 and accompanying text.

[343] Why does interest in the trial so far overshadow interest in settlements, where as much of the psychology and more of the economics of the legal process take place? The answer may lie in the fact that through settlements, the great bulk of compensation dollars are under the control of the parties, their insurers, and their lawyers. Few of us organize movements to reform our own behavior. Thus, another virtue of the jury may be that it can be a lightning rod for the mistakes of lawyers, insurers, and the parties themselves, whose settlement mistakes can be blamed on the imagined future behavior of juries. In addition, to acknowledge that the awards complained of are overshadowed by the settlements agreed to would make it more obvious that the real impact of many proposed reforms (caps on awards, for example) would not be on what happens at trials but what happens at settlements.

[344] H. LAURENCE ROSS, SETTLED OUT OF COURT 107-08 (1980).

to. When facing a complex task such as predicting jury awards, it is a hinderance not to have systematic and well-controlled data, to focus on a small number of extreme awards, or to trust in casually asserted myths about the system. Under such circumstances, error comes easily.[345]

b. *Changes in Case Mix*

Changes in patterns of jury awards cannot be interpreted without taking into account the characteristics of the cases being decided or changes that may have occurred in the stages preceding trial. Any number of trends could result in increases in jury awards without any change whatsoever in juries, jurors, or the law. The following are examples of changes that could result in such increases: the base of injuries shifting to include a larger proportion of more expensive losses; a greater proportion of tortious injury victims bringing grievances to lawyers, permitting lawyers to select cases with more valuable losses; or the settlement process becoming more contentious with respect to cases involving large losses, thereby resolving fewer of those cases through negotiation. Put simply, anything changing the value of the case mix reaching trial would be expected to change damage awards at trial. Unless one controls for those changes, one can make no sense of patterns of seeming "change" in jury awards.[346] This important problem of confounding case mix with case outcomes will be developed further below.

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[345] This is part of the price paid for not knowing enough about the behavior of the system within which one must make decisions. One might think that knowing how and why juries decide cases is of such importance to lawyers that as an industry they would see to it that such data were collected and analyzed, rather than trusting government agencies and academics to do it for them (and do it poorly from the perspective of providing answers that lawyers need to know). The fact that lawyers have not carefully collected such data may be further evidence of the relative unimportance of jury verdicts to their work. *See* Saks, *supra* note 15.

[346] To make simple time series comparisons is to assume no changes occurred in the case mix reaching the jury. If changes in the mix did occur, then comparisons of awards are comparisons of apples to oranges. *Compare* PETERSON & PRIEST, *supra* note 293, at 12-16 (ignoring the effects of changes in the case mix) *with* MARK A. PETERSON, COMPENSATION FOR INJURIES: CIVIL JURY VERDICTS IN COOK COUNTY 34-37 (1984) [hereinafter COMPENSATION FOR INJURIES] (using the same data and considering the effects of changes in the case mix).

c. *Absence of Data*

The available data are insufficient to support any general conclusions about changing patterns of awards. Broad and systematically gathered data on awards simply do not exist. No state has kept track of these data[347] and the Administrative Office of the United States Courts began doing so only recently.[348] Precisely because of these shortcomings in the database, private and government researchers have undertaken the specialized studies cited throughout this Article.[349]

Some of the data reported demonstrate no effort to present representative data, but instead focus on the upper edge of the distribution of awards, usually awards of one million dollars or more.[350] Such a focus on the extreme upper portion of the distribution, consisting, for example, of at most a few percent of jury awards in Cook County, is inadvisable. By analogy, one does not assess the ability of a school to place its students in jobs by seeing how well the last ten valedictorians fared. A few big numbers do not tell much of the story.

Although practitioners sometimes turn for information about awards to reports from Jury Verdict Research (JVR), no serious students of the litigation system regard those data as reliable

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[347] *See supra* note 20 and accompanying text. As noted above, state court information management has only recently begun to collect systematically case flow data, and half or more of the states do not even do that uniformly. As far as I have been able to determine, no state keeps track of case outcomes. I have written to the office of the court administrator of each state requesting data on civil jury awards comparing the 1970s and 1980s and all have replied that they do not have such data. *See* Written Correspondence with State Court Administrators (July 2-13, 1989) (on file with author).

[348] *See supra* notes 17-18 and accompanying text.

[349] For some areas of litigation, the sheer number of awards has been too small to attempt to discern statistical trends. For example, in my own state of Iowa, agitated physicians urged state legislators to save them from awards they claimed were growing out of control. They placed brochures in their offices explaining the crisis to patients. A count of every malpractice case in the state's courts in the preceding five and one-half years revealed a total of 26 plaintiffs' verdicts, an average of only 3.7 per year, which is not enough each year to compute a meaningful average. *See* Northeastern Regional Office, Nat'l Ctr. for State Courts, Iowa Tort Liability Study (Sept. 13, 1986) (on file with author). Note, however, that had the Iowa awards been averaged, one would find a *decline* in the size of awards in the later years of that series. If the crisis did exist, it was clearly not in every jurisdiction. But even in major cities, the numbers were too small to permit serious analysis. For example, by the end of the 1970s, San Francisco had only five malpractice plaintiffs' verdicts per year. *See* SHANLEY & PETERSON, *supra* note 274, at 51.

[350] *See supra* note 338 and accompanying text.

summaries of jury behavior. The JVR data are not the product of systematic and representative sampling.[351] The resulting sample of awards is taken disproportionately from the high end of the distribution, and the resulting summary statistics therefore overstate the size of awards. In addition, reporting practices may vary with geography, case type, and over time, such as when public controversy over awards rises. As a result, apparent changes in award patterns may reflect little more than changes in reporting patterns and changes in the nature of the sampling bias.[352]

d. *Absence of or Erroneous Inflation Adjustments*

Much of the data that have been gathered have failed to adjust properly even for the most obvious of confounds: inflation. Some studies have not adjusted at all, most notably those that measure the increase in "million dollar awards." One million dollars at time-1 is not one million dollars at time-2. A 1970 dollar shrank to about thirty-six cents by 1985.[353] Thus, in 1970 dollars, the 1985 "million dollar awards" are closer to "one-third of one million dollar awards." By 1985 it took $2,773,707 to buy what $1,000,000 bought in 1970.[354]

Of the studies that have "adjusted for inflation," most have done so by using the overall Consumer Price Index (CPI). Against this

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[351] *See PLRA Hearings*, *supra* note 28, at 226-27 (describing JVR's data collection procedures); A. Russell Localio, *Variations on $962,258: The Misuse of Data on Medical Malpractice*, LAW MED. & HEALTH CARE, June 1985, at 126, 126-27 (discussing the shortcomings of JVR's data). Because of the inadequacy of JVR data for research purposes, those who have wanted to study awards data rigorously have used a limited number of local jury verdict reporters determined to contain an unbiased and very nearly complete set of the cases for the jurisdiction each covers. *See, e.g.*, PETERSON & PRIEST, *supra* note 293, at 2-3 (obtaining data from case descriptions reported by the *Cook County Jury Verdict Reporter*); Daniels & Martin, *supra* note 25, at 326-48 (noting problems in using JVR studies for patterns in jury verdicts and then surveying state court verdicts in 43 counties in 10 states).

[352] The consequences of these errors may extend beyond simply misinforming us about the system's actual state; such misinformation can *produce* unwanted changes. The JVR data are, after all, intended to be used as a guide to what a jury would award for a certain kind of loss. Lawyers who rely on JVR's unrepresentatively high amounts have their own frame of reference stretched upward and that in turn produces higher settlements over time.

[353] The purchasing power of the dollar for consumers fell from $2.574 in 1970 to $0.928 in 1985, using 1982-84 dollars as the benchmark. *See* STATISTICAL ABSTRACT, *supra* note 94, at 467 tbl. 756 (providing statistics for dollar values from 1950 to 1988).

[354] Conversely, a 1985 award of $1,000,000 is the equivalent of a 1970 award of $360,528.

benchmark, they have concluded that increases in the severity of insurer losses have exceeded the rate of inflation.[355] But using the overall CPI, as the preceding paragraph does, underestimates the effects of inflation on the tort award dollar.

A more precise inflation adjustment would reflect the inflation of actual components of tort awards, rather than a general average inflation. The bulk of damages paid are for medical treatment for injuries suffered and for lost earnings. Health care costs have risen at a faster rate and to greater heights than the overall cost of living. In the decade from 1975 to 1984, the CPI for all goods and services rose 93%, while for medical care it rose 125%.[356] In the thirty years from 1955 to 1985, the constant dollar cost of physicians' services rose more than 600%[357] and per capita disposable personal income approximately doubled.[358] One Rand study found that when measured in unadjusted dollars, medical specials increased 167% over two decades.[359] After adjusting with the medical cost deflator, however, the increase was only 10%.[360]

Different types of harms, characteristic of different categories of torts, involve different repair costs. For example, the cost of auto replacement parts rose 12.56% from 1981 to 1985. During the same period, the increase in physicians' fees was 33.38%, general medical care 36.88%, and hospital room charges 47.68%.[361] If jury awards for car repairs lagged far behind jury awards for passenger repairs, that would be quite rational. Thus, when a more appropriate index of inflation is applied, the apparent increases are not nearly as dramatic as they would otherwise seem. Unfortunately, few students of the litigation system, including serious researchers, have applied the proper adjustments.[362] Yet the reasonableness of damage

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[355] *See, e.g.*, DANZON, *supra* note 6, at 62-63 ("[T]he steady upward trend in claim severity [from 1969 to 1979] outpaced the general rate of inflation."); PETERSON & PRIEST, *supra* note 293, at 20 & nn.14-15 (noting that increase in awards exceeded inflation adjustments).

[356] *See* STATISTICAL ABSTRACT, *supra* note 94, at 470 tbl. 761.

[357] *See id.* at 99 tbl. 150 (providing 1985 figures); U.S. DEP'T OF COMMERCE, HISTORICAL STATISTICS OF THE UNITED STATES: COLONIAL TIMES TO 1970, at B262-74 (Bicentennial ed. 1975) (providing 1955 figures).

[358] *See* STATISTICAL ABSTRACT, *supra* note 94, at 428 tbl. 695 (providing 1955 and 1985 figures).

[359] *See* COMPENSATION FOR INJURIES, *supra* note 346, at 49-50.

[360] *See id.*

[361] *See* INSURANCE INFO. INST., INSURANCE FACTS: 1988-89 PROPERTY-CASUALTY FACT BOOK 55 (1988).

[362] Indeed, no one even knows what the proper adjustments would be. The first step in determining the proper adjustments is to determine what the components of

awards cannot be evaluated unless properly adjusted to reflect the actual inflation. Jury awards that have increased proportionately to that would be perfectly reasonable.[363]

The underadjustment to which inflation generally has been treated still is better than the near total disregard of other equally obvious confounds. Although the effects of many confounds, in addition to inflation, may well have distorted the appearance of awards even more profoundly, they often have simply been left altogether uncontrolled.[364]

e. *Other Statistical Mirages*

A variety of other statistical mirages can interfere with making sense of awards data. For example, California appears to have unusually high awards compared to courts of other states.[365] Is that evidence of the profligacy of California jurors? Or does it reflect the fact that cases involving less than $15,000 are heard in limited jurisdiction courts and are not included in the jury verdict reporters that provided the data?[366] If the lower portion of the case distribution is lopped off, the "average" award in the remaining sample of cases will appear to be high.[367]

Similarly, Rand data show an abrupt upward climb in San Francisco awards after the 1970s.[368] Although one might think

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typical tort awards and settlements are for each case category. The next step is to determine the correct measure of inflation for each of those components. Only at this stage can a researcher draw a meaningful conclusion about how tort awards or settlements have moved when adjusted for inflation.

[363] The marginal difference, if any, between the expected awards (taking into account the actual injuries and the real-dollar cost of repairing them) and aggregate jury awards could then become a subject of inquiry. But no one has come close to approaching these questions in a rigorous way.

[364] These include changes in age and income mix of plaintiffs, severity of the plaintiffs' damages, qualitative changes in treatment effectiveness (and associated costs), and other matters to be discussed.

[365] *See* Stephen Daniels & Joanne Martin, *Myth and Reality in Punitive Damages*, 75 MINN. L. REV. 1, 41-42 (1990).

[366] *See* PETERSON, *supra* note 111, at 8-9 (describing procedural changes in San Francisco courts and their probable effects on jury trials).

[367] Federal data, some of which appear in Appendix B, have the same problem. When the jurisdictional limit was raised in 1988 from $10,000 to $50,000, the automatic result was that the number of filings declined and the average award rose. The change in the jurisdictional limit, then, makes time series comparisons more complicated. Perhaps this factor will make more obvious what should always have been obvious but was not: the caseload is a changing mix, rendering superficial comparisons across time misleading.

[368] *See* HENSLER ET AL., *supra* note 192, at 15-17; PETERSON, *supra* note 111, at vi-

that these findings confirm skyrocketing awards, the more likely explanation is that they reflect a change in the composition of the court's caseload. Beginning in the early 1980s, cases with less than $25,000 at issue were diverted to arbitration.[369] By removing a large number of less expensive cases from the data, the average award inevitably "climbed" precipitously.[370]

Change in Illinois law produced the opposite illusion. When, in 1981, Illinois moved from a rule of contributory negligence to comparative negligence, cases that previously would have been losses for plaintiffs, producing no awards at all, became plaintiff victories, albeit smaller ones.[371] As a result, the average award of the later cases grew smaller.

There has been persistent debate over the use of means rather than medians as the method of summarizing many different awards into an average.[372] The statistic employed can determine the conclusions drawn. Figure XII, presenting Rand's Cook County jury

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viii, 28-30.

[369] *See* PETERSON, *supra* note 111, at 9, 31.

[370] In San Francisco between 1975 and 1979, more than half the jury awards were below $25,000. *See* SHANLEY & PETERSON, *supra* note 274, at 26 fig. 6.

[371] This probably also explains the upward trend in the likelihood of plaintiff verdicts in Cook County, rather than juror sympathy for plaintiffs or hostility toward defendants.

[372] The *median* is the value that divides a distribution into two equal halves; it is the 50th percentile. The *mean* is the quotient resulting from dividing the sum of awards by the number of awards (or the number of tried cases, thereby including the zero awards in verdicts for defendants). "Average" is a generic term referring to measures of central tendency generally. Given the importance of the choice of measure of central tendency, the use by some researchers of the term "average" to stand for "mean" has been an unfortunate practice. The least they could do is be sure to tell the reader which average they are using. One undergraduate statistics textbook introduces the topic of averages as follows: "Almost any presentation of data uses averages—average gas mileage, average income, average score on the exam, average absolute refractory period of the tibial nerves of rats fed DDT." DAVID S. MOORE, STATISTICS: CONCEPTS AND CONTROVERSIES 172 (2d ed. 1985). The book continues: "Everyone has heard that statistics features the mean, the median, and the mode [the value which appears most frequently in the data]. Those are in fact the three 'averages' we will study." *Id.* at 173.

A well-known book on the misuse of statistics makes the following comments:

> [T]he word 'average' [has] a very loose meaning. It is a trick commonly used, sometimes in innocence but often in guilt, by fellows wishing to influence public opinion or sell advertising space. When you are told that something is an average you still don't know very much about it unless you can find out which of the common kinds of average it is—mean, median, or mode.

DARRELL HUFF, HOW TO LIE WITH STATISTICS 28 (1954). Huff also notes that "an unqualified 'average' is virtually meaningless." *Id.* at 29.

awards data,[373] demonstrates the difference between using the mean as opposed to the median value. Note that as the *mean* (they label it as "average") award moves through time, it rises from about $35,000 in 1960 to about $65,000 in 1977. Thus, it appears that awards have increased. But the *median* shows remarkable stability at below $10,000 and, if anything, shows a small decrease over time. The statistical phenomenon in Figure XII occurs because the distributions of awards are drastically skewed, with many small awards and a few very large awards. Because the mean takes into account the exact value of each score in a distribution, it is highly sensitive to extreme scores. One astronomical award in an otherwise unchanging distribution will pull the mean higher, creating the impression that the whole distribution has changed. Medians, unlike means, change only when awards in the distribution shift from one side of the 50th percentile to the other.[374] The two measures produce different inferences,[375] yet nothing surprising to statisticians.[376]

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[373] *See* PETERSON & PRIEST, *supra* note 293, at 23.

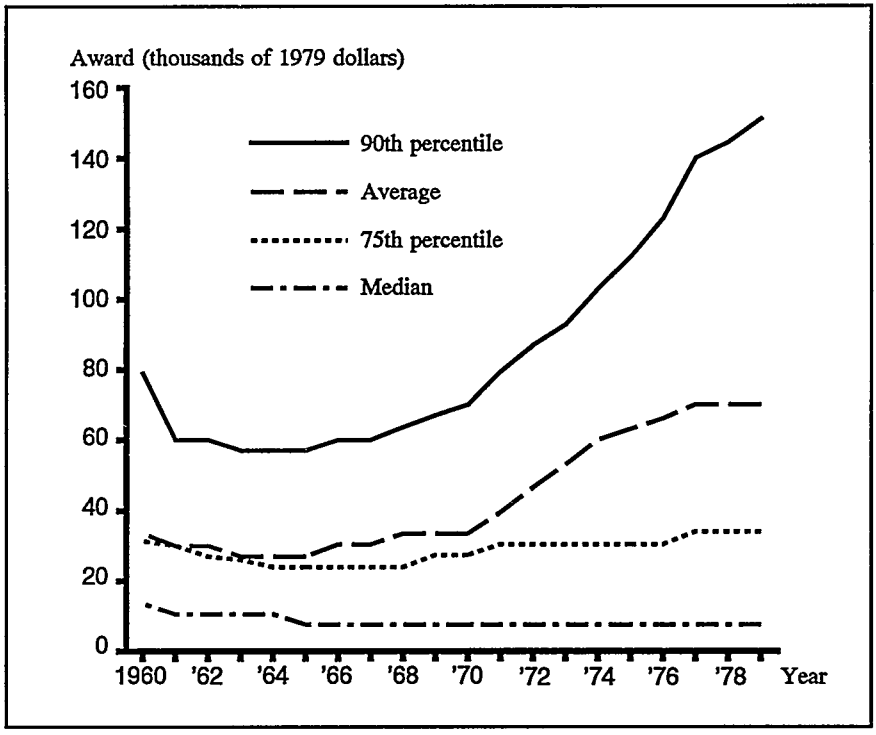
[374] The behavior of these numbers gives additional information about the distribution of awards and how it changes over time. First, the differences between the means and medians indicate the presence of a strongly skewed distribution, with a massive lower end and a tiny upper end. Second, because the mean and the median are moving so differently, we can infer that the great bulk of the distribution is staying still while the upper tail is rising.

[375] The "average" award in Cook County was both up (if measured by the mean) and level (if measured by the median).

[376] Which is the "correct" one to use? The convention among statisticians is to use means to describe the central tendency of "normal" distributions (the familiar bell-shaped curve) and medians to describe the central tendency of skewed distributions. *See* LEONARD A. MARASCULIA & RONALD C. SERLIN, STATISTICAL METHODS FOR THE SOCIAL AND BEHAVIORAL SCIENCES 53 (1988). This convention is not arbitrary. It is a solution to the problem of trying to give as meaningful a sense of where a distribution sits as possible using a single number. Because of this convention and its reasoning, some researchers (Daniels and his colleagues, for example) consistently use medians to report the central tendencies of awards and eschew means. *See* Daniels & Martin, *supra* note 25, at 340-42 tbl. 4; Daniels & Martin, *supra* note 365, at 42 tbl. VI, 44 tbl. VII, 51 fig. IV, 53 fig. V. Other researchers (Peterson and his colleagues, for example) take pains to present both, leaving to their readers the responsibility to make the choice and the interpretation. *See* MARK A. PETERSON ET AL., PUNITIVE DAMAGES: EMPIRICAL FINDINGS *passim* (1987); PETERSON, *supra* note 111, *passim*.

The two measures of central tendency answer different questions about the distribution and about the litigation process. That the median has remained unchanged or has dropped suggests that the typical jury's response to the typical case has remained stable. The increasing mean, at the same time, tells us that insurers are paying more in total and much more in the largest cases than had been true previously. Insurers are right that their liability costs rose (at least in those

FIGURE XII[377]
MEAN VS. MEDIAN AWARDS IN COOK COUNTY



f. *Contrary data*

The data that are available are not consistent with the conclusion that jury awards have in general risen sharply.[378] Mentioned just above were the findings for Cook County, where median jury awards remained "remarkably stable" over a considerable length of

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jurisdictions where they did rise). But those who blame it on juries "spinning out of control" are not paying attention to most of the evidence (the bulk of the distribution).

[377] Figure XII is adapted from PETERSON & PRIEST, *supra* note 293, at 23 fig. 8.

[378] Although sometimes data from JVR are cited in support of the proposition, in 1986, the Executive Director of JVR told a congressional committee that "JVR has neither asserted nor published any conclusions that the average size of jury verdicts has recently sky-rocketed. Although verdicts, as well as many other items, have increased substantially over the years, our studies do not support any claim of recently escalating jury verdict awards." *PLRA Hearings*, *supra* note 28, at 226.

time.[379] South Carolina's typical jury awards rose slowly and slightly over the period of one study.[380] The Daniels and Martin study of jury verdicts in forty-three counties in ten states found that the median awards in twenty-nine counties were below $50,000.[381] In twenty-three counties, the medians were below $25,000.[382] These data do not show any obvious growth trends in the size of awards. The most impressive differences are variations between states and between counties within states.[383] These large differences suggest that differences in the *milieu externe* or the local legal culture may have an equal or greater impact in determining awards than differences in the substantive law.[384]

The Minnesota Department of Commerce conducted a study of all of its and its neighboring states' medical malpractice insurers to

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[379] *See supra* notes 373-76 and accompanying text.

[380] *See* Hubbard, *supra* note 22.

[381] *See* Daniels & Martin, *supra* note 25, at 336-37 & tbl. 3.

[382] *See id.* at 336-37. When the data are disaggregated by case type, impressive differences emerge. Auto negligence cases usually have low awards (medians below $40,000 in three fourths of the sites, below $20,000 in half the sites). *See id.* at 339. Median product liability awards were over $100,000 at 85% of sites reporting at least one award and over $1 million at six of them. *See id.* Median medical malpractice awards were over $100,000 at 70% of the sites reporting at least one award and over $1 million at three. *See id.* For possible explanation of these differences, see *supra* notes 139-42 and accompanying text (discussing the economics of case selection), and *infra* notes 486-501 and accompanying text (discussing research on "deep pockets"). Compare the NCSC study, however, which found that the highest median awards in 38 cities were for automobile cases ($32,000). *See* Rottman, *supra* note 195, at 15 fig. 13.

[383] *Within* each site, the variation in awards was not great: interquartile ranges (the distance between the 25th and 75th percentiles) were under $100,000 in two-thirds of them. Thus, "most awards fall within a well-defined and relatively narrow range." Daniels & Martin, *supra* note 25, at 338. *Between* states and between counties within states, however, the variation is remarkable. *See id.* at 336-39. Awards data vary dramatically by site. In general, interstate variation was greater than intrastate variation. The following is the basis of the inference. To acquire some indication of variation, I began with the medians Daniels Martin present for each county in their study. I obtained my index of intrastate variation by calculating the standard deviation of these county medians within each state. The mean of these state-by-state standard deviations was $9125 and the median of them was $6468. My index of interstate variation was obtained by taking each state's median award and computing their standard deviation, which came to $19,890. Thus, the interstate variation appears to be greater than the intrastate variation. How much of these differences is attributable to differences in law and how much is due to differences in the social or economic environments is impossible to say with present data.

[384] Differences in awards between counties within states cannot be attributable to differences in state law. This raises questions as to why there are no increases where changes in the law would lead one to expect increases, and where so many commentators obviously have expected and assumed increases.

evaluate assertions such as this: "'The huge amounts awarded for punitive damages, pain and suffering, and other non-economic loss provide a windfall for the plaintiff while resulting in substantial costs to all other patients in the aggregate.'"[385] The Department found that of the 110 cases tried in the survey states over the six years of the study, not one assessed punitive damages or awarded damages for pain and suffering; indeed, only twenty cases awarded anything at all to plaintiffs.[386] Moreover, these insurers excluded punitive damage awards under the terms of their policies and so would not have had to pay the damages in any event.[387] The results imply that noneconomic damages could not have been increasing because no noneconomic damages were being awarded.

As soon as control variables are included, the apparent increases begin to melt away. That is, when changes over time in the severity of injuries or losses to plaintiffs are taken into account, the data show only slight, if any, real increases in awards. In the most careful analysis of changes in medical malpractice awards in five jurisdictions during most of the 1970s and 1980s, Sloan and Hsieh concluded:

> Once we accounted for general inflation and the other factors in the regressions, *the coefficients of the time variables generally were not statistically significant* at conventional levels. This result at least partly contradicts assertions about the "explosive growth in damage awards." Awards have increased, but a large part of the increase reflects changes in the mix of cases brought to verdict.[388]

These are illustrative of the contrary data. The best way to "find" that juries in general have been making awards that soar above those of the past has been to violate many of the standards of good empirical research: failing to adjust for extraneous, confounding variables; comparing apples to oranges; selecting a narrow slice of data and overgeneralizing to the entire realm of interest; and

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[385] STATE OF MINN. DEP'T OF COMMERCE, MEDICAL MALPRACTICE CLAIM STUDY: 1982-1987, at 22 (1989) [hereinafter MINN. CLAIM STUDY] (quoting NAT'L ASSOC. OF INDEP. INSURERS, MEDICAL MALPRACTICE: A SECOND OPINION 10 (1986)).

[386] *See id.*

[387] *See id.*

[388] Frank A. Sloan & Chee Ruey Hsieh, *Variability in Medical Malpractice Payments: Is the Compensation Fair?*, 24 LAW & SOC'Y REV. 997, 1025 (1990) (emphasis added) (citation omitted). The italicized phrase means that awards did not increase over time, once extraneous variables were controlled for.

using means instead of medians in spite of the strongly skewed distributions of awards.

g. *Punitive Damages*

Punitive damages have been another area of purported extraordinary growth, both in frequency and in size. According to Justice O'Connor: "Awards of punitive damages are skyrocketing."[389] Brief after amicus brief submitted to the Supreme Court in a recent punitive damages case asserted that punitive damages are more frequent, more extreme, and more outlandish.[390] Such claims have been made by the executive branch as well. According to the White House:

> Another item of great concern to the [President's] Council [on Competitiveness] is punitive damages. . . .
>
> . . . Even a casual observer knows that, in the last several decades, punitive damages have grown dramatically in both frequency and size. What began as a sanction only for the most reprehensible conduct has now become almost routine. In California, estimates are that one in every ten jury awards now includes punitive damages, in amounts averaging more than $3 million. And as these awards become more common, so do the instances of their arbitrary, even freakish application.[391]

But every empirical study of the question has reached conclusions that, to say the least, fail to support these beliefs. In Rand's research on accidental personal injury trials in Cook County, Illinois, and San Francisco, the proportion of cases in which punitive damages were awarded was small and had risen little in the twenty-five years from 1960 to 1984.[392]

Cook County averaged, for personal injury cases, 1.8 punitive damage awards per year during the 1960s and 1970s and 2.8 per year during 1980-84.[393] During the entire twenty-five-year period

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[389] Browning-Ferris Indus., Inc. v. Kelco Disposal, Inc., 492 U.S. 257, 282 (1989) (O'Connor, J., concurring in part and dissenting in part).

[390] *See* Pacific Mut. Life Ins. Co. v. Haslip, 111 S. Ct. 1032 (1991). A brief submitted by the Institute of Architects, for example, stated: "Punitive damages are today awarded with a frequency and in amounts that are startling. . . . This system of punitive damages—where punitive awards are routine and fantastic verdicts receive little attention—is entirely a product of the last 20 years." *Id.* at 1038 n.4 (citing numerous amicus briefs filed in this case).

[391] Quayle, *supra* note 13, at 15, 25.

[392] *See* PETERSON ET AL., *supra* note 376, at 12.

[393] *See id.* at 10 tbl. 2.3.

there were fifty punitive damage awards in total.[394] In products liability and medical malpractice cases, the categories where most concern is expressed, the data showed that punitive awards are rare indeed. The research found exactly one punitive damage award in product liability during the two decades from 1960-1979 and one such award during the 1980-1984 period.[395] For medical malpractice, there were zero such awards in 1960-1979 and three in 1980-84.[396]

San Francisco averaged 0.2 punitive damage awards per year during the 1960s and 1970s and 1.2 per year during 1980-84.[397] During the entire twenty-five-year period, San Francisco juries granted ten punitive damage awards in personal injury cases.[398] In product liability cases during the decades from 1960-1979, one punitive damage award was made and during 1980-1984, three were awarded.[399] For medical malpractice there were zero such awards in 1960-1979 and one in 1980-1984.[400]

Even had there been large increases in the number of punitive damage awards, the proper inquiry is not "Was there an increase?" but, "Was there an *unjustified* increase?" The "crisis," if one exists, may be in the conduct of the tortfeasors, rather than that of the jurors or judges.[401]

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[394] *See id.*

[395] *See id.* at 13 tbl 2.5.

[396] *See id.* For both classes of cases, there are not enough awards to even state (by the standards of any science) that the apparent increase is statistically reliable, let alone to declare a national emergency.

[397] *See id.* at 10.

[398] *See id.* During the same period, these juries also awarded punitive damages in 70 intentional tort cases. *See id.*

[399] *See id.* at 13.

[400] *See id.*

[401] It may be useful to explain where the Justice Department, the White House, and at least one member of the Supreme Court have gone astray. The Peterson study noted that each of two other categories of cases (of concern neither to this Article nor to the tort policy debates) registered an overall increase in damage awards in recent years. *See id.* at 8-10, 19. One of these categories is business/contract litigation. It consists primarily of bad faith, rather than tort, cases. *See id.* at 10. Recall Galanter's and the NCSC's observations, quoted earlier, that contracts is the area to watch for real increases in litigation activity. *See* Galanter, *supra* note 159, at 942; *supra* note 204 and accompanying text (quoting NCSC 1989 REPORT, *supra* note 187). The second category is intentional torts (deliberate infliction of illegal injury). *See* PETERSON ET AL., *supra* note 376, at 10 (finding that while punitive damage awards in San Francisco intentional tort cases decreased from 3.0 cases per year in the period from 1960-1979 to 2.2 cases per year in 1980-1984, Cook County statistics indicate a growth in such cases from 2.0 to 7.6 over the same periods). For San Francisco, these categories each contained seven times as many punitive damage awards as

Rand's findings suggest, however, that while the proportion of such cases has not grown, the *size* of mean punitive damage awards has increased.[402] The mean increase, however, reflects the impact of very few cases with exceptionally large awards. Between 1960 and 1984, median punitive damage awards rose in Cook County from $1000 to $43,000 and in San Francisco from $17,000 to $63,000.[403] Even if we ignore the point made in the margin, and

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ordinary torts did. *See id.* Juries may not be amiss in finding a sounder basis for punitive damage awards in these other categories. As a legal and historical matter, bad faith breaches of contract and intentional torts are where punitive damages got their start, and were well established in American law before the middle of the nineteenth century. *See, e.g.*, Day v. Woodworth, 54 U.S. (13 How.) 362, 370-73 (1851) (discussing the appropriateness of "exemplary or vindictive" damages in intentional tort and trespass actions); *A Reading on Damages in Actions Ex Delicto*, 3 AM. JURIST 287 (1830) (analyzing the rationale for and proper extent of damages in various tort actions).

The Justice Department's report misreads the data in several ways. *See* TORT POLICY REPORT, *supra* note 27, at 35-41. First, it lumps together punitive damage awards from all kinds of suits, even though the report is by the "*tort* policy working group" (so the Justice Department could not have been interested in business/contract cases) and their topic was the "*insurance* crisis" (so the authors ought not to have been concerned about intentional torts, which are not generally insurable, and are becoming even less so as commercial general liability policies have been withdrawing coverage in those states that had interpreted such contracts as applying to punitive damages). *See id.* at 39, 42. After lumping together the tort apples with the oranges and the grapefruits of other categories, the report proceeds as though all the data had been about ordinary tort cases (instead of only one-fifteenth of the data). Furthermore, the report uses means rather than medians. *See id.* at 35-42. The mean, as a measure of central tendency, is especially susceptible to distortion by a single (and for all anyone knows, a much deserved) "blockbuster" verdict (as Rand reports have pointed out), and this distortion can lead to distorted conclusions from data exhibiting an otherwise stable trend. For a discussion of the merits of using either the mean or median as a measure of central tendency, see *supra* notes 372-76 and accompanying text.

[402] *See* PETERSON ET AL., *supra* note 376, at 15.

[403] *See id.* Assuming these figures are correct, do they reflect a change in juror punitiveness toward tort defendants, especially corporate tort defendants? If judges are handing out longer criminal sentences, this could reflect growing punitiveness among judges. But, it could equally reflect the more serious nature of the crimes coming before them. Could jurors similarly be taking their usual approach to punitive damages, but reacting to more serious offenses or "different" defendants?

One way to assess this would be to compare the apparent increase in punitive damage awards to the increase in the wealth of the defendant corporations. Where punitive damages are determined to be appropriate, the law requires jurors to assess an amount that will suitably punish the defendants in light of their wealth. Although $10,000 may punish a company whose assets amount to only $1 million, under like circumstances it might require ten times more to "equally" punish a company with ten times the assets.

San Francisco punitive damage awards increased by a factor of 3.71 from 1960 to 1984 ($17,000 is to $63,000 as 1 is to 3.71). *See id.* We do not know the net worth

regard these numbers as real increases, they obviously have not quite reached the heights that most people seem to believe. Finally, the Rand study found that about half of these awards resulted in downward post-trial adjustment, resulting in a payment of about 45% of the amount originally awarded.[404]

Daniels and Martin used a geographically wide-ranging data base of forty-seven counties in eleven states covering from two to five years (varying with the jurisdiction) to study punitive damage awards for the first half of the 1980s.[405] Variability proved to be the norm in these data, as results ranged from no punitive damage awards in some counties[406] to punitive damage awards in about 25% of the successful verdicts in others.[407] Punitive damages were least frequent where physical injury was involved and far more frequent in cases involving financial or property harm.[408]

Median punitive damage awards, in jurisdictions with ten or more punitive verdicts, ranged from under $10,000 in some counties to as high as $204,000 in San Diego, with a median award

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of the companies being assessed those 1960 and 1984 punitive damages, but we might use the rate of growth in total assets of the Fortune 500 companies as a rough approximation. From 1960 to 1984, these increased eightfold, from $176 billion to $1409 billion. *See Fortune Directory*, FORTUNE, Apr. 29, 1985, at 284; *Fortune Directory*, FORTUNE, July 1961, at 184. If the corporations in San Francisco against which punitive damages were assessed enjoyed growth parallel to that of the Fortune 500 companies, then the apparent growth in San Francisco punitive damages is actually a *decline*: punitive damage awards grew at less than half the rate of growth in total assets. In real terms, punishment may have softened.

Cook County punitive damage awards showed a forty-threefold fold increase (from $1000 to $43,000). *See* PETERSON ET AL., *supra* note 376, at 15. In light of the Fortune 500 statistics, what might we make of that? Perhaps Chicago corporations enjoyed a far steeper growth in assets. Or perhaps the $1000 awards of 1960 were merely symbolic, so that $5000 would have been viewed as equally punitive. If so, the increase would have been eightfold, like the increase in the assets of the Fortune 500 companies.

These are mere illustrations. A proper assessment of the growth of punitive damages requires a comparison of the actual circumstances of the case and condition of the defendants, on the one hand, to the amount of the awards, on the other. We might then conclude that punitive damages really are up, or perhaps they are level or even in decline. Looking only at naked and uncontrolled averages, however, is surely inadequate.

[404] *See* PETERSON ET AL., *supra* note 376, at 28.

[405] *See* Daniels & Martin, *supra* note 365, at 28.

[406] *See id.* at 32. These counties were Erie and Richmond in New York and King, Pierce, and Spokane in Washington.

[407] *See id.* These counties were Arapahoe and Jefferson in Colorado and Clay in Missouri.

[408] *See id.* at 37.

of less than $25,000 in twelve of twenty jurisdictions studied.[409] California counties had the largest medians and are atypical.[410] Is this indicative of unusual punitiveness by California juries, the conduct or wealth of California defendants (properly taken into account in punitive damage determinations), or the case mix (bigger and more deplorable cases tried in California)? No one knows.

A focus on medical malpractice trials in the large Daniels and Martin sample revealed: 1917 trials, 621 plaintiffs' verdicts, and eighteen awards of punitive damages.[411] Product liability trials numbered 967, of which 379 resulted in plaintiffs' verdicts, including thirty-four punitive damage awards.[412] Long-term trends were examined in three different counties: Cook County, Illinois, Dallas, Texas, and Jackson, Missouri. Upward trends were barely discernible. Present patterns resemble past patterns.[413]

Landes and Posner studied how punitive damage awards fared on appeal.[414] They looked at all federal product liability appeals decided in 1982 through November 1984 and found that of a total of 172 product liability cases, ten involved punitive damages, and only three of those were upheld on appeal.[415] In addition, they looked at all of the state product liability appeals reported in the ten most recent volumes of West's regional reporters between late

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[409] *See id.* at 42.

[410] *See id.* In fact, California had the five jurisdictions with the highest median punitive damage awards: Alameda, $90,000; Los Angeles, $111,000; Sacramento, $180,400; San Diego, $204,000; and San Francisco, $87,300. *See id.* Compare these data with the statement by the Vice President. *See supra* text accompanying note 391 (noting estimates that when California juries award punitive damages, such awards average more than $3 million).

[411] *See* Daniels & Martin, *supra* note 365, at 38. This translates into punitive damage awards in about 1% of medical malpractice trials and about 3% of the cases in which liability was found and compensatory damages were awarded.

[412] *See id.* This translates into punitive damages awards in 3.5% of trials and about 9% of cases in which compensatory damages were awarded.

[413] *See id.* at 43-62. Again, we should bear in mind that even if a sharp upward trend were discernible, it might be entirely appropriate given the facts of the cases. Conversely, if punitive damage award trends appear generally stable that does not mean that the cases have not grown less egregious (and therefore arguably deserving of lower than the "usual" awards). We cannot assume that the cases coming before juries do not change over time. Examination of awards without examination of the cases tells us nothing about whether the juries are reaching "correct" results. Put differently, although these data suggest the alarmists are wrong in their assertions, they could be correct if a different alarm were being sounded. No one can know without looking at the cases to which the awards respond.

[414] *See* William M. Landes & Richard A. Posner, *New Light on Punitive Damages*, REGULATION, Sept.-Oct. 1986, at 33.

[415] *See id.* at 35.

1984-late 1985 and found a total of 119 cases, excluding New York and California. Of this sample, only two punitive damage awards survived appeal. New York and California, as two "liberal" states, were counted separately. The cases from those states involved no punitive damage awards at all.[416] Landes and Posner concluded that punitive damage awards "seem[ed] to be neither frequent nor crushing in any absolute sense."[417]

The most intensive examination of punitive damages in product liability cases has recently been completed by Rustad.[418] After conducting an exhaustive search of many sources, he located a total of 355 such awards in the quarter century between 1965-1990.[419] The author attempted to learn all he could about those 355 cases by interviewing attorneys who handled the cases and by studying law reporters.

First of all, a total of 355 punitive damage awards in product liability cases is not enormous, considering that each year there are about 21,900 deaths and thirty million injuries in the United States associated with the use of products.[420] In 1984, hospital emergency rooms received 9,632,128 patients who had suffered product-caused injuries.[421] Those figures are for a *single* year. Extrapolated over a twenty-five-year period, the number of product-caused injuries and deaths might easily be ten or twenty times ten million. Between 1974-1990 a total of 161,686 of these injuries and deaths led to the filing of federal product liability cases,[422] as well as an unknown number of state product liability cases. In view of the

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[416] *See id.* at 36.

[417] *Id.* at 54. The authors did note, however, that such awards may nonetheless "still be too frequent, or too heavy in relation to the actual conduct of defendants." *Id.* Of course, the reverse is equally likely to be true.

[418] *See* MICHAEL RUSTAD, DEMYSTIFYING PUNITIVE DAMAGES IN PRODUCTS LIABILITY CASES: A SURVEY OF A QUARTER CENTURY OF VERDICTS (Papers of the Roscoe Pound Found. 1991).

[419] The author "searched all available computer based statistical sources, regional verdict reporters, law reviews and other scholarly sources, state products liability practice guides, generalized case reporting services, court records [in Miami, San Diego, and Los Angeles], asbestos reporters, and [news] media reports. In addition [he] surveyed all attorneys in the reported cases [in order to learn about any other cases]." *Id.* at 42.

[420] *See* 1987 U.S. CONSUMER PROD. SAFETY COMM'N, ANN. REP. 1.

[421] *See* NATIONAL INJURY INFO. CLEARINGHOUSE, NAT'L ELECTRONIC INJURY SURVEILLANCE SYS., TABLE OF BODYPART BY AGE, ALL PRODUCTS, CALENDAR YEAR 1989, at 5 (1989).

[422] *See infra* Appendix B.

base rate of injuries and the number of filings, the number of punitive damage awards seems comparatively modest.

The frequency of punitive damage awards in product liability cases has increased in recent years; more punitive damage awards were counted in the latter portion of the period studied.[423] Perhaps that portends a worrisome trend. But what should be the nature of that worry? To make a determination we would need to look to see if the awards were warranted. If they were not, then corrective action might be called for. If they *were* warranted, then the awards themselves are the corrective action, and we might worry instead about why the increased frequency of punitive awards has not been a more effective deterrent to deliberate harm-causing conduct.

The median award sizes from the Rustad study are given in Table VI. First, it is obvious that these awards are not typically in the multi-million dollar range. Second, punitives are not many times the amount of compensatory damages. At the trial level, the ratio is only about 1.2:1 and in more than one-third of the cases, the compensatory damages are actually larger than the punitives.[424] After adjusting for inflation, no increase in the frequency of large punitive damage awards over time is evident. Thus, contrary to popular belief, punitive damage awards are not "skyrocketing."[425]

TABLE VI[426]
MEDIAN PUNITIVE DAMAGE AWARDS IN PRODUCT LIABILITY CASES, 1965-1990

	Compensatory	Punitive
Awards at Trial	500,100	625,000
Awards Following Appeal	212,783	135,000

Trials are not the end of the story, of course. Of the 161 punitive awards for which the appeals process was completed,

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[423] *See* RUSTAD, *supra* note 418, at 23, 25.

[424] *See id.* at 29.

[425] *See id.* at 28, 45. Moreover, "punitive damages occur much less frequently than is believed," and in the Rustad study of products liability cases from 1965-1990, only 355 cases were found in which punitive damages were awarded. *Id.* If asbestos cases are controlled for, the number of awards per year over the last six years has actually been falling. *See id.* at 23, 43.

[426] The data for Table VI come from RUSTAD, *supra* note 418, at 29, 32 (dollar figures are not adjusted for inflation).

slightly over one half were reduced or reversed by an appellate court.[427] Another 126 verdicts settled while awaiting appeal.[428] Thirty-seven percent of plaintiffs received *no* punitive damages on appeal.[429] In those cases where awards were received, median damages were reduced as shown in Table VI. Compensatory damages were reduced to about 40% of the jury's original award and punitives to about 20%. For appealed cases, the ratio of punitives to compensatories fell to about 0.6:1.

Rustad took the additional rare step of examining the factual findings in the cases. In only 7% of the cases was the plaintiff found contributorily negligent.[430] In almost every case, the plaintiff was seriously injured or killed by the product. There were deaths in 27% of the cases and permanent disability in 54%.[431] In only 7% of the cases were the plaintiffs only temporarily and partially disabled.[432]

Factual findings in the 355 cases included instances of fraudulent affirmative misconduct (18 cases), knowing violations of safety standards (27 cases), inadequate testing and quality control in manufacture (44 cases), failure to warn of known dangers (137 cases), and post-marketing failure to redesign, recall, or reduce the risk of a known danger (120 cases). "Smoking memos" that prompted punitive awards gave evidence of: explicit knowledge of dangerous defects, efforts to conceal damaging evidence, files of large numbers of injuries produced by the product that were not accompanied by corrective action, and explicit decisions to continue marketing highly dangerous products rather than make inexpensive corrections.[433]

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[427] *See id.* at 31-32.

[428] *See id.*

[429] *See id.*

[430] *See id.* at 34; *see also* Valerie P. Hans & William S. Lofquist, Lay Perceptions of Business Responsibility for Harm, Paper Presented to the Joint Meetings of the Law and Society Association and the Research Committee on the Sociology of Law of the International Sociological Association 14 (June 20, 1991) (copies available from the Division of Criminal Justice, University of Delaware) (compiling extensive interviews with juries in various kinds of civil trials in Delaware and finding that they generally are suspicious of the motives of plaintiffs and protective of defendants).

[431] *See* RUSTAD, *supra* note 418, at 34.

[432] *See id.*

[433] *See id.* at 7-10 (citing examples including a manufacturer's knowledge that one of its ladders had a tendency to collapse and a drug company's decision to continue marketing a drug despite an FDA recommendation that it be recalled).

Whichever of these studies of punitive damages strikes the most fear in the hearts of defendants, the results are far more tame than one might have expected given the impressions created in the minds of the public and policy-makers.[434] In light of the empirical evidence, the more interesting questions might be how such mistaken beliefs came about and how the level of fear rose to the heights that it has.

2. Accounting for Increases in Jury Awards

Contrary to the data and the analysis discussed in the preceding section, let us assume that large and wide-ranging increases in jury damage awards did in fact occur. What could explain them? More than a few discussions of the asserted problem proceed along lines that appear illogical on their face, such as attributing increases to the existence of contingency fees.[435] Somewhat more plausible are explanations suggesting that some sort of cultural shift in attitudes and behavior has brought more cases into a system whose decision-makers, especially jurors, have themselves grown more hospitable to plaintiffs. Perhaps the most plausible of the explanations focuses on changes in the substantive law of torts, which

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[434] *See supra* notes 390-91 and accompanying text.

[435] For example, one commentator has stated: "There is no question that 'contingent-fee cases are in large measure responsible for the explosion in malpractice cases. Combined with the huge sums juries award all too readily these days, contingent-fee cases are in large measure responsible for the astronomical increase in malpractice insurance premiums.'" Mosberg, *supra* note 53, at 863 (quoting *Trial Lawyers Should Troll for Responsibility Not Victims*, PHYSICIAN'S TRAVEL MEETING GUIDE, Summer 1985, at 136-37). What requires explanation is how a practice that "by 1881 . . . was said to be an 'all but universal custom of the profession'" could produce a sudden "explosion" now. John Fleming, *The Contingent Fee and its Effect on American Tort Law*, *in* BUTTERWORTH LECTURES, 1988, at 50, 55 (1989) (quoting Note, 13 CENT. L.J. 381, 381 (1881). Whatever the wisdom or folly of contingency fees, showing that a constant can produce so dramatic a change requires more than merely asserting it to be so. Moreover, would legislated decreases in contingency fees reduce the number of cases accepted and filed by personal injury lawyers, or would it increase the number (as they seek to maintain their incomes by enlarging their portfolio of cases whose yield has been reduced)? The little serious research that exists on the subject has found that the behavior of lawyers working under contingency fee arrangements does not differ from that of lawyers working for hourly fees. *See* Herbert M. Kritzer et al., *The Impact of Fee Arrangements on Lawyer Effort*, 19 LAW & SOC'Y REV. 251, 251-52 (1985) (finding that in low stakes cases (under $6000) contingency fee lawyers spend less time on cases than hourly fee lawyers, that in higher stakes cases there is no significant difference in effort expended, and concluding that "simple hypotheses about the relationship between fee arrangements and the way lawyers handle civil cases are misleading at best").

increase the pool of actionable injuries (perhaps allowing plaintiffs' lawyers to select a pricier set of cases to bring to trial).[436]

None of these explanations can be tested rigorously without controlling for confounds, that is, changes that are concurrent with changes in the variables hypothesized to cause changes in awards.[437] Only by taking into account and controlling or adjusting for these confounds can we rationally assess the impact of intrinsically legal variables such as legal rules or the system's decision-makers. In addition, plausible rival hypotheses derived from consideration of the system's *milieu externe* need to be identified and studied in their own right if a real understanding of the behavior of the litigation system is ever to be approached.[438]

Most of the plausible rival explanations I present—in contrast to virtually all of the explanations that now dominate the public and policy discussions about the litigation system—grow out of the notion that changes in awards (and settlements, for that matter) can arise from entirely normal, probably even desirable, social, economic, or technological developments outside the legal system. Other of my rival explanations suggest the occurrence of changes in the legal system that are far less malignant than those most widely discussed,[439] some of which may even be viewed as improvements.

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[436] Such discussions are found throughout the literature of the liability "explosion." *See supra* notes 23-27 and accompanying text (reporting the opinions of various commentators concerning why lawsuits have increased at an alarming rate). Typically, the explosion is assumed or argued on the basis of a few factlets or factoids; changes in substantive law are offered as the explanation for the assumed explosion, and then a far wider array of changes is offered to cure the perceived problem. As we have seen, research that has attempted to document the effect of some of these legal changes has found some, but not others, to be associated with increases in frequency and severity of claims. *See, e.g., supra* note 6.

[437] *See generally* DONALD T. CAMPBELL & JULIAN C. STANLEY, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH 16-21 (1963) (describing how confounds may lead to mistaken inferences of causation); THOMAS D. COOK & DONALD T. CAMPBELL, QUASI-EXPERIMENTATION: DESIGN AND ANALYSIS ISSUES FOR FIELD SETTINGS 59-60 (1979) (defining "confounding" as the "possibility that the operations which are meant to represent a particular cause or effect construct can be construed in terms of more than one construct, each of which is stated at the same level of reduction"); JOHN MONAHAN & LAURENS WALKER, SOCIAL SCIENCE IN LAW: CASES AND MATERIALS 33-82 (2d ed. 1990) (explaining how rival hypotheses may threaten the internal validity of research and, therefore, how research should be designed to eliminate them).

[438] In all likelihood, controlling for changes in the system's *milieu externe* is necessary in order to see these latter changes in the system's *milieu interne* more clearly.

[439] Here is an example—from an advertisement placed by the Aetna Insurance Company—that is not as extreme as it may seem, given a climate that is rhetorically

They explain increases in jury awards as a result either of a change in the mix of cases reaching trial or a change in the information juries have about the cases.

A broad rival explanation is that over time more serious injuries and losses have been coming to trial. Even if nothing at all has changed in the way cases are tried or how juries decide them, if the cases themselves have changed so that they involve greater losses, it should not be surprising to find juries awarding more compensation.[440] One study that attempted to measure not only the amount of awards, but the attributes of the cases themselves, provides evidence consistent with this explanation.[441] Cases going to trial in more recent years, in the aggregate, may have involved relatively more serious injuries and more expensive medical costs than cases earlier in the time series.[442]

A change in case mix may also be reflected in certain changes in the relative number of different categories of torts that come to trial. Peterson has noted: "Most of [the] variation [in awards between types of cases] reflects differences in plaintiffs' injuries. Plaintiffs who based their claims on malpractice, on injuries from defective products, or on workplace accidents were more likely to have severe and disabling injuries."[443] If juries are presented with more cases from the high stakes categories and fewer from the low stakes categories than they once were and they continue to decide cases as they did before, we should expect the size of awards to increase, and a gradual shift in category distribution is just what was found. Although awards may appear to be going up over time, when disaggregated into case types a remarkable sameness is found across two decades of jury awards.[444]

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thick and empirically thin: "America's civil liability system has gone berserk." *Aetna on the Lawsuit Crisis and Your Insurance*, WALL ST. J., Apr. 8, 1986, at 9.

[440] *See, e.g.*, COMPENSATION FOR INJURIES, *supra* note 346, at vi ("[T]he size of jury awards was strongly related to the amount of medical specials [the total of all past medical expenses related to a plaintiff's injuries], a relationship that was clearly shown."). Peterson also notes that "[a]wards increased more rapidly than medical [special damages]." *Id.*

[441] *See id.* at viii-ix.

[442] *See id.* at 50 (suggesting that the more than threefold increase in medical special damages from 1960 to the late 1970s "suggests either that catastrophic injuries worsened in recent years or that the plaintiffs received more (or more expensive) medical care").

[443] *Id.* at vii.

[444] *See id.* at ix.

What, in turn, could be responsible for such changes in case mix? One possibility is that the injury base rate has enlarged over the past generation. As discussed earlier, even if tort law remained constant, and had not enlarged the circle of cases in which a defendant would be liable, the sheer number or rate of actionable injuries may have increased.[445] A few products that produce mass injuries are enough to flood the system with cases. If nothing else in the world changed except an increase in the initial pool of actionable injuries, an increase in jury awards would result. Because of the enlarged injury base, more cases would be brought to lawyers; those in which the evidence was more clear or the damages more severe, or both, would be selected by lawyers for filing; and eventually portions of that enhanced sample of cases would wind up in front of judges and juries. If the *number* of actionable injuries grew faster than the *number* of personal injury lawyers, then the subset of cases filed would become richer.

Even if the base of actionable injuries has remained constant, more of those cases may be arriving on lawyers' doorsteps. Particularly in higher stakes cases, such as medical malpractice and product liability, where the proportion of injuries complained of has been low, there is considerable room for that complaint rate to rise.[446] If claiming has risen from 4% of actionable injuries to 8% in some area of torts, that is a 100% increase in potential cases presenting themselves to lawyers. This effectively increases the pool of injuries from which attorneys may choose cases, and if they accept or reject cases just as they always have, we should expect the cases selected for filing, and eventual trial, to become a richer mix.

Alternatively, assume that the base rate of injuries and the claiming behavior of injury victims have remained constant, but that lawyers have become more efficient and business-like in selecting cases from an unchanging assortment of potential plaintiffs. This scenario is the convergence of economic self-interest and exclusionary gate-keeping. Ironically, the suggestion that lawyers should tell clients that some cases ought not to be brought or that they should not file claims involving less serious losses is precisely what

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[445] *See supra* notes 64-101 and accompanying text (discussing the base rate of injuries).

[446] *See supra* note 256 and accompanying text (discussing the base rate of actionable injuries and the proportion of those who bring claims). For example, greater awareness of and education about the legal system may lead to an increased proportion of medical malpractice claims being filed.

would produce the increases in trial awards of which commentators are complaining, by changing the case mix to a richer one.[447]

Whether the hypothesized changes in case mix are caused by an enlarged pool of actionable injuries, changed claiming patterns by injury victims, more discriminating case-selection by attorneys, or perhaps a growing tendency to settle less serious cases, no one yet knows. Whichever may be the cause, however, all would imply that the litigation system is being used for more, rather than less, serious matters: fewer minor claims brought by complainants; more stringent gate-keeping by lawyers; or negotiations which remove the less serious cases from the system.

Even if the case mix remained identical, another quite different set of changes could alter what is presented to juries. For example, even if the case mix has not changed to present more serious injuries to juries, the cost of treating the injuries has changed. This is not a product of mere inflation in medical care costs, but a reflection of qualitative strides in the ability to treat injuries. The more treatments available, and the more sophisticated those treatments, the more they are likely to cost.[448] In addition, improvements in the effectiveness of treatment, so that people survive accidents that earlier would have killed them, has an impact on accident costs.[449] The larger the proportion of accident

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[447] Economic self-interest already propels attorneys in the direction that is simultaneously complained of ("awards are too high") and encouraged ("just take large, serious cases").

[448] Moreover, as life expectancy increases, some components of damages will increase commensurately, such as lifetime care for the seriously and permanently disabled.

[449] For example, important strides have been made in recent decades in the treatment of head and spinal cord injuries. Many who once would have died from their injuries now survive. "The improvements in methods of resuscitation that have taken place during the last 40 years or so have abolished the previously fatalistic readiness to accept that a week or two in coma after a head injury was virtually a sentence to death . . . ." RUTH GARNER, ACUTE HEAD INJURY: PRACTICAL MANAGEMENT IN REHABILITATION at xiii (1990). But "the price of success, in saving lives, was a population of cerebral cripples that was increasing at a rate of 1000 or more a year throughout the country." *Id.* "Advances in emergency evacuation and neurosurgical management of head injury have reduced mortality, resulting in a large population of chronically disabled survivors." NEUROBEHAVIORAL RECOVERY FROM HEAD INJURY, at vii (Harvey S. Levin et al. eds., 1987). Moreover, "[t]he medical problems of patients who survive head injury are enormous, and the socioeconomic impact on our society is staggering." Rebecca W. Rimel et al., *Characteristics of the Head Injured Patient, in* REHABILITATION OF THE ADULT AND CHILD WITH TRAUMATIC BRAIN INJURY 8, 8 (Mitchell Rosenthal et al. eds., 2d ed. 1990). "Typically, the cost of acute care for the first two years for a patient with a head injury is $435,000 . . . . It may cost over $4 million to care for a child with a head injury over their lifetime . . . ." Evelyn

victims who live and the smaller the proportion that die, the greater the aggregate damages defendants can expect to pay.[450] Thus, highly desirable changes, particularly in medical technology and technique, should be expected to generate more and more expensive lawsuits.

Quite a different possibility is that over time, plaintiffs' lawyers might be producing higher awards by doing a more competent job of preparing the damages portion of their cases for trial. An important study of mandatory pre-trial settlement conferences found that while pre-trial conferences had no effect on the likelihood of settlement or the ratio of liability verdicts, it was producing larger awards.[451] The most plausible explanation is that the settlement conference was enabling plaintiffs' lawyers to see the imperfections in their cases relating to damages and to prepare themselves more fully for trial than if they had not gone through the exercise of the conference. If other courts have adopted comparable methods of trying to promote settlements,[452] or if plaintiffs' lawyers have otherwise improved the presentation of their damages case, the expected effect would be larger damage awards.

Gilbert, *American Re Urges Cyclists To Use Helmets*, NAT'L UNDERWRITER PROP. & CASUALTY/EMPLOYEE BENEFITS EDITION, Aug. 12, 1991, at 4. Most victims of head and spinal cord injuries are young (aged 15-29, *see* Rimel, *supra*, at 9) so 40-45 years of care would not be unusual.

[450] Furthermore, the living victims and their families are more likely to sue. *See supra* text accompanying note 122 (reporting The California Medical Association's finding that moderately to seriously injured malpractice victims were between two and three times more likely to file suits than were the families of persons who died as a result of negligent injuries).

[451] *See* MAURICE ROSENBERG, THE PRETRIAL CONFERENCE AND EFFECTIVE JUSTICE: A CONTROLLED TEST IN PERSONAL INJURY LITIGATION 58-67 (1964). Another result of mandatory pre-trial settlement conferences was that demand on judges' time went up, contrary to expectation. *See id.* at 45-58. In light of the study's findings, New Jersey terminated the pre-trial conference innovation.

[452] The Vice-President has recommended the following pre-trial system:

> We believe the system should provide a "multidoor courthouse," where parties have options other than formal litigation. This idea builds on much of the ABA's important work on this subject. The . . . recommendation [of the President's Council on Competitiveness] is that before the machinery of litigation kicks in, both sides sit down together—with a mediator or in a conference where they tell their stories to an experienced lawyer volunteering his or her time. The object would be to probe the issues carefully but informally, and to weigh the chances for concluding the matter as quickly as possible and without a trial. In line with this procedure, alternative dispute resolution would be made more widely available.

Quayle, *supra* note 13, at 15.

Any change that helped jurors to more accurately compute damages is likely to operate to increase awards. Kalven long ago suggested that a more detailed description of damages, as opposed to a rough guestimation, could lead to larger awards: "If one seriously assesses the components in a case of any magnitude, they are likely to add up to a surprisingly large figure."[453] More recent research on how juries reach award amounts confirms that those who use the component approach usually arrive at a larger sum than those who try to arrive at a single global estimate.[454] A partial explanation may be that intuitive decision-makers tend to overlook cost items and to underestimate cost projections.

The more jurors are left to their own devices, the more they tend to use simple linear calculation strategies, such as multiplying the number of years lost by the amount of earnings and perhaps adding something for inflation, raises, and so on.[455] As Figure VIII illustrates, even when jurors try to make exponential adjustments intuitively,[456] they usually underestimate the actual amount by a considerable margin.[457] The more they are given sound quantitative guidance to understand the actual exponential growth of the amounts they are trying to project (e.g., future lost earnings, future treatment costs), the more the gap between the typical intuitive under-estimation and the actual amount will be reduced.[458] This refinement of calculations could come about in numerous ways, such as from testimony by an economic expert,[459]

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[453] *See* Harry Kalven, Jr., *The Jury, the Law, and the Personal Injury Damage Award*, 19 OHIO ST. L.J. 158, 161-62 (1958). Moreover, as Kalven noted, "I take it this is one reason why the plaintiff bar sometimes expresses a preference for the accountant type juror in a case where damages are substantial and well documented." *Id.* at 162.

[454] *See, e.g.*, Jane Goodman et al., *Runaway Verdicts or Reasoned Determinations: Mock Juror Strategies in Awarding Damages*, 29 JURIMETRICS J. 285, 295, 298-300 (1989) (finding that the jury technique of picking a "fair number" without calculations corresponded to comparatively smaller damage awards).

[455] *See id.* at 301.

[456] *See* Figure VIII *supra* accompanying note 248. Examples of such adjustments include calculating the effects of inflation or raises compounded over a period of years.

[457] A well-established finding of cognitive psychology is that people have difficulty intuiting exponential growth. *See* Gideon Keren, *Cultural Differences in the Misperception of Exponential Growth*, *in* 3 PERCEPTION AND PSYCHOPHYSICS 289, 289-92 (1983); *see also supra* note 36 and accompanying text.

[458] Recall the finding that, on average, jury awards reflect an underestimate of actual losses, especially when the losses are large. *See supra* notes 234-56 and accompanying text.

[459] Here are the findings of the Raitz et al. experiment described earlier. *See supra* note 321 and accompanying text. Jurors determining damages without guidance

more educational closing statements by counsel, or more financially sophisticated jurors.[460] Accordingly, we might expect larger damages with the increased use of economics experts, a better educated pool of jurors,[461] more economically or statistically literate attorneys, or simply more sophisticated urban jurors.[462]

No doubt other plausible explanations for rising damage awards could be found that similarly involve natural, normal, and often desirable changes within and outside of the legal process. To date, few have been proposed, fewer have been discussed, and barely any have had the benefit of empirical testing.

A less obvious change has been a reduction in the size of civil juries that occurred during the 1970s. Many states and most federal districts reduced the size of their juries from twelve to six. The effect of reducing the size of a sample, in this case a jury, is obvious to those with statistical acumen: variability in verdicts and awards will increase; unexpectedly high awards (and unexpectedly low awards) will increase in size and frequency. An elementary phenomenon of sampling theory is that as sample size decreases, the sampling distribution's variance will increase. All other things being equal, when jury sizes are reduced by half (from twelve to six), damage awards would increase in variance by a factor of 1.41.[463]

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arrived at a mean of $366,000. *See* Raitz et al., *supra* note 321, at 390-91. With plaintiff's expert witness explaining "$719,354" and the defense arguing "$321,000," jurors arrived at an award of $700,000. *See id.* With plaintiff's expert explaining "$719,354" and a defense expert explaining "$321,000," juries arrived at an award of $630,000. *See id.* Apparently, once the exponential calculation genie is out of the bottle, even a rebuttal expert cannot put it back in.

[460] Jurors who have IRAs, have seen graphs depicting the effect of compounding or the ravages of inflation, or have taken a course in economics or accounting, might acquire a better feel for exponential estimation.

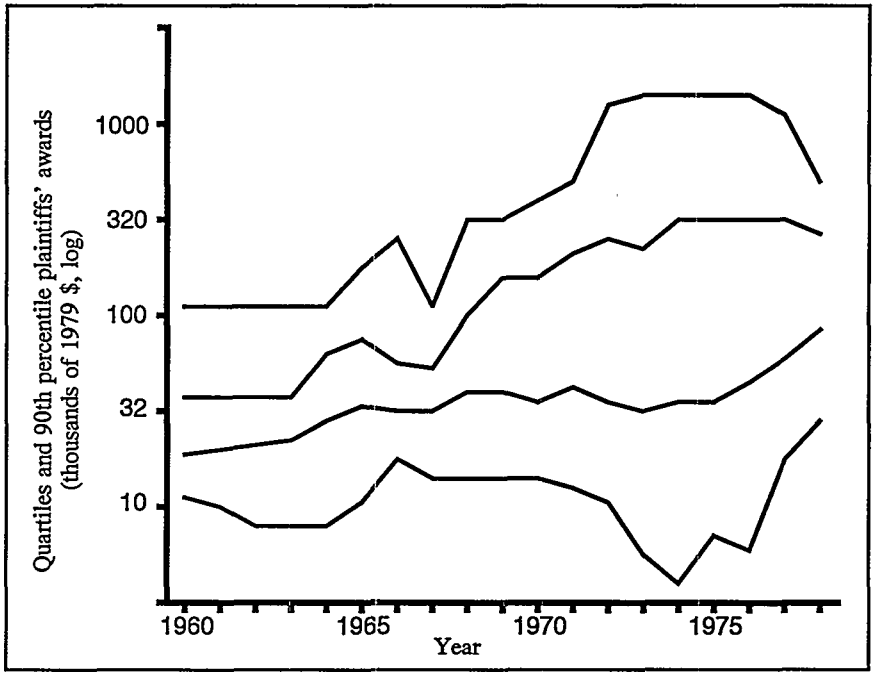
[461] This results from modern jury selection systems, such as the one-day, one-trial system, and implies, incidentally, that as the level of education improves jury awards would rise.

[462] For a discussion of the findings on the relationship between urbanization and medical malpractice litigation, see DANZON, *supra* note 6, at 74-75, 82-83.

[463] The standard error of a sampling distribution is obtained by dividing the population standard deviation by the square root of the size of the samples being drawn from that population. If the denominator is made smaller, the quotient becomes larger (intuitively, as samples get smaller, the error variation grows larger). If samples are reduced in size from twelve to six, that is a reduction by exactly one half. Reducing the denominator by exactly half is the same as increasing the quotient by exactly the square root of the reciprocal of one half, that is, the square root of 2. The square root of 2 is 1.41, or an increase in error variation in awards of 41%.

There is also a considerable legal and academic literature on the subject, of which only a few sources need be cited. *See, e.g.*, Ballew v. Georgia, 435 U.S. 223, 232-39 (1978) (discussing the point made in the text); HANS & VIDMAR, *supra* note

FIGURE XIII[464]
CHANGES IN VARIABILITY IN COOK COUNTY
MEDICAL MALPRACTICE AWARDS



One illustration of the type of effect that would be expected is provided by medical malpractice data from Rand's Cook County research, presented in Figure XIII. Note that the line reflecting changes over time in the amount of the ninetieth percentile of awards has swung upward and the one reflecting the tenth percentile has swung downward. This is the statistical picture that often has been more vaguely described as an increased unpredictability in

309, at 165-76 (examining the impact of a reduction in jury size and stating that "six-person juries are four times as likely to have extremely low or extremely high average damage awards"); Saks, *Enhancing and Restraining Accuracy*, *supra* note 301, at 249.

[464] Figure XIII is adapted from PETERSON & PRIEST, *supra* note 293, at 35.

trial outcomes.[465] As lawyers realize that jury awards have become less predictable, settlements are likely to reflect the same volatility. In the face of trial unpredictability that seems to come from nowhere, insurers began planning for an uncertain future by raising premiums and bolstering reserves.[466]

This problem of growing unpredictability due to the advent of smaller juries has been understood for quite some time[467] and was even predicted. The cure, the way to restore the familiar level of predictability, is simple and straightforward: Restore juries to their traditional size.

3. Evaluating Civil Damage Awards

The central question to be asked is the same one that has long been asked about juries: Do they make reasonable, rational decisions? Superficial data regarding trends of jury awards are incapable of answering the question. Such data demonstrate effects, but leave the causes to speculation. Apparent increases may be the result of growing juror munificence or a changing array of cases involving greater losses (which the jurors are pricing as correctly or as incorrectly as ever).[468]

The most visible studies of jury awards have provided data on naked, superficial trends in the amounts of awards. As has been discussed in some detail already, such studies tell us nothing about jury decision-making. We need something against which to compare the jury awards, some controls, some benchmarks.

When jury awards are compared to actual plaintiff losses, the finding is that for relatively small losses, awards are excessive and

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[465] *See, e.g.*, Richard J. Haayen, *Destroying Myths, in* WORKING TOWARD A FAIRER CIVIL JUSTICE SYSTEM 16, 20 (Insurance Info. Inst. ed., 1987) ("The problem is that the liability system appears to be capricious to the point where the insurers' ability to predict the real probabilities of liability outcomes has been weakened substantially.").

[466] *See* MINN. CLAIM STUDY, *supra* note 385, at 17-20.

[467] *See* Hans Zeisel, *...And Then There Were None: The Diminution of the Federal Jury*, 38 U. CHI. L. REV. 710, 717-19 (1971) (exhibiting data showing a wider variation in six-member jury verdicts and discussing the impact of this variation on lawyers).

[468] Indeed, if the cases grew in value faster than the jurors grew more stingy, their growing miserliness would be hidden behind a curtain of superficially rising awards.

The more detailed kinds of questions that must be answered include: How well do jurors do? Compared to what? How close do awards come to actual losses? Since the case-specific goal of tort law is to try to "make whole" the victim of an actionable injury, the least one may expect of a jury is that where it finds liability to exist, the plaintiff's economic losses should be fully compensated.

for relatively high losses, awards fall short.[469] On average, awards undercompensate losses. A recent study of medical malpractice awards found that each one percent increase in loss resulted in an additional one-tenth to one-twentieth of a percent increase in award.[470]

The benchmarks most often used to assess jury awards have been decisions of other decision-makers in comparable circumstances. We previously discussed the research of Kalven and Zeisel in regard to the rate of judge-jury agreement on liability verdicts.[471] When judge and jury both decided for the plaintiff, juries awarded more damages than judges would have 52% of the time, while judges awarded more 39% of the time and they were in approximate agreement 9% of the time.[472] Overall, juries awarded 20% more money than judges would have.[473] Similarly, recent findings by the National Center for State Courts found that jury awards in tort trials were higher than judges' awards.[474] Who came closer to the "correct" amount? We cannot say.[475]

Other studies raise the possibility that jurors arrive at *lower* damage awards than judges, arbitrators, and administrators. In comparing recent federal data, Clermont and Eisenberg discovered that in federal trials where liability has been found, judges tended to make larger awards than juries in personal injury cases and lower

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[469] *See supra* notes 243-46 and accompanying text.

[470] *See* Sloan & Hsieh, *supra* note 388, at 1019.

[471] *See supra* notes 295-301 and accompanying text.

[472] *See* Kalven, *supra* note 299, at 1065.

[473] *See id.*

[474] *See* Rottman, *supra* note 195, at 11 (finding that the median for jury awards was $26,213 and for judge awards was $8500 while the mean for jury awards was $108,181 and for judge awards was $37,368). A familiar caution should be repeated, however. Unlike the Kalven and Zeisel research design, *see* KALVEN & ZEISEL, *supra* note 295, at 45-54, these juries and judges were deciding different cases, and there is no way to know if the cases were comparable or if selection biases associated with counsel strategy gave apples to juries and oranges to judges.

[475] For economic damages, the available research suggests that trials as well as settlements generally produce undercompensation. *See supra* notes 234-63 and accompanying text. For other components, such as pain and suffering, the answer necessarily is a matter of judgment. For this, the question can either be how close or far the jury, as representative of the community, comes to what the community's judgment would have been (a subject on which the reader may refer to the discussion of the disruptive effects of reduced jury size, *see supra* notes 463-67 and accompanying text). On the other hand, the judgment can be more normative, prescribed by a legislature or court. So far, our system of civil justice has favored a democratic jury system backstopped by a judge. *See* Pacific Mut. Life Ins. Co. v. Haslip, 111 S. Ct. 1032, 1043-44 (1991) (upholding the common law jury assessment of punitive damages).

awards in non-personal injury cases.[476] When the verdict ratio is incorporated to yield an "actual return ratio," it becomes even clearer that personal injury plaintiffs before judges fared better than those before juries.[477] By this measure, virtually all types of personal injury trials before a judge yield larger awards for plaintiffs than trials before juries do.[478] The most pronounced categories of cases are medical malpractice (1.78 times as much before judges as before juries), motor vehicle (1.48), and product liability (1.32).[479]

Several other, better controlled, studies produce results consistent with the conclusion that jurors are among the more miserly of trial decision-makers. Vidmar presented the same North Carolina medical malpractice case—in which the defendant admitted liability but disputed the amount of damages—to a sample of professional arbitrators and to samples of jurors from two different cities.[480] The arbitrators, as compared to jurors, awarded significantly more money and came closer to the actual amount awarded in the case by the actual arbitrators.[481]

Indiana, as part of its reforms capping medical malpractice awards at a maximum of $500,000 for all damages, instituted a professionally administered patient compensation fund to decide all losses above $100,000.[482] Contrary to expectations, malpractice awards in Indiana came to average one third higher than those of its neighbors, Michigan and Ohio, which retained traditional malpractice systems.[483] Why? One possibility is that professional

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[476] *See* Clermont & Eisenberg, *supra* note 15 (reporting data for the period 1979 through 1989). Clermont and Eisenberg found the following notable exceptions to the trend: medical malpractice cases (where judges and juries give nearly equivalent awards) and product liability cases (where juries give larger awards). *See id.*

[477] The inclusion of the verdict ratio adjusts the amounts awarded by judges and juries for the probability of winning a case before one versus the other.

[478] *See* Clermont & Eisenberg, *supra* note 15.

[479] *See id.* The warning about confounding of case selection with decision-maker type, mentioned in reference to the NCSC study, *see supra* note 474, applies with equal force to these data.

[480] *See* Neil Vidmar, *Medical Malpractice Juries*, DUKE L. MAG., Summer 1991, at 8, 12.

[481] *See id.* at 12.

[482] *See* Eleanor D. Kinney & William P. Gronfein, *Indiana's Malpractice System: No-Fault by Accident?*, LAW & CONTEMP. PROBS., Winter & Spring 1991, at 169, 172-74. For claims filed after January 1, 1990, the cap rises to $750,000. *See id.* at 172. Malpractice insurance covers settlements or awards up to $100,000. Compensation above that amount, up to the limit of the cap, is decided by and paid out of a professionally administered patient compensation fund. *See id.* at 174.

[483] *See id.* at 182 (mean awards were about $400,000 in Indiana compared to about

administrators are better able than jurors to calculate damages, and therefore come closer to the correct (and higher) amount.

Another benchmark is the comparison of jury awards to negotiated settlements of cases from the same pool. One study had two sets of cases, one composed of complex, higher stakes cases and the other of simpler, lower stakes cases. The study found that lawyers settled cases from the more complex set for a mean of $15,800 and from the less complex set for a mean of $5800—a 3:1 ratio.[484] The mean jury award for the first set of cases was $24,300 and for the second set $8600—the same 3:1 ratio.[485] This suggests that lawyers and jurors respond similarly to given sets of cases and reflects the expected (though not always found) discount for settlements.

Yet another way to ask about the reasonableness of juror decisions is to ask whether juries treat like cases alike. On the face of it, for example, jurors appear to award a surcharge against defendants who are "deep pockets," that is, wealthy defendants such as those in product liability, medical malpractice, and worker injury cases, as well as cases where the government is a defendant. The first systematic empirical tests of this contention were conducted by researchers at Rand.[486] They found that "[a]wards in work injury or product liability cases were 10 times larger than in automobile accident cases, and were 25 times larger if the cases combined product liability and work injury claims."[487]

But these researchers recognized the possibility that the injuries in cases filed against deep pocket defendants may be more serious than those in other cases, and therefore would produce predictably larger awards. As they suspected, injuries differed according to tort

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$300,000 in Michigan and Ohio). Kinney and Gronfein suggest that the Indiana system has inadvertently become a no-fault system, with insurers compensating many claimants in amounts sufficient to make them eligible for the patient compensation fund, and then the fund administrators follow their statutory mandate to assume liability and consider only the value of the plaintiff's losses in paying damages. This can explain why Indiana pays a higher frequency of large claims than its neighbors and the nation generally, but it does not explain why the award amounts are higher than comparison states with common law tort systems.

[484] *See* INSTITUTE OF JUDICIAL ADMIN., A COMPARISON OF SIX- AND TWELVE-MEMBER CIVIL JURIES IN NEW JERSEY SUPERIOR AND COUNTY COURTS 24 (1972).

[485] *See id.*

[486] *See* AUDREY CHIN & MARK A. PETERSON, DEEP POCKETS, EMPTY POCKETS: WHO WINS IN COOK COUNTY JURY TRIALS 41-45 (1985); COMPENSATION FOR INJURIES, *supra* note 346, at vii.

[487] *See* COMPENSATION FOR INJURIES, *supra* note 346, at vii.

type.[488] Death or permanent disability were more likely in medical malpractice (55% of malpractice cases), product liability (48%), or work injury (40%) cases.[489] "Plaintiffs who based their claims on malpractice, on injuries from defective products, or on workplace accidents were more likely to have severe and disabling injuries."[490] All other categories of cases tended to involve substantially less serious injuries.[491] Indeed, two thirds of the variation in awards disappears when differences in plaintiffs' injuries are taken into account.

Nevertheless, after controlling statistically for the severity of plaintiffs' injuries in a set of California cases, some difference in the size of awards remained.[492] After comparing approximately similar injuries across different categories of cases, "[p]laintiffs in malpractice, product liability, and work injury cases still received two to four times the compensation that their counterparts received in other cases."[493] Chin and Peterson concluded that while most of the difference in awards between deep pocket and individual defendants reflects objective differences in the injuries, after controlling for those differences, larger awards still were assessed against some kinds of defendants (professionals, corporations, government) as opposed to others (individuals).[494] We might take from this study two lessons. One lesson is that a huge amount of the apparent difference between awards against deep pocket defendants and shallow pocket defendants is due to a large difference in the severity of injuries suffered by the respective plaintiffs. A second lesson is that some difference appears to

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[488] *See id.* at 32-37.

[489] *See id.* at 33. Indeed, these more serious injuries resulted in higher awards. *See id.* at 34-37. Furthermore, defendants named in these higher stakes cases tended to be corporations rather than individuals. *See id.* at 37.

[490] *Id.* at vii.

[491] *See id.* at 33.

[492] *See id.* at 35-37. The researchers adjusted the data to make sure that the comparisons were between apples and apples (cases involving comparable injuries) so that the effects of the defendant's wealth were not confounded with the seriousness of the injuries.

[493] *Id.* at vii. Government defendants paid 15% more than corporations and 50% more than individuals. *See* CHIN & PETERSON, *supra* note 486, at vii. Juries were approximately 30% "more generous to plaintiffs who sued corporations for injuries that were not extraordinarily severe" than if they sued individuals for the same injury. *Id.* With severe injuries, the "deep pocket" effect tended to be more pronounced: corporations were required to pay 4.4 times what individuals were. *See id.*

[494] *See* CHIN & PETERSON, *supra* note 486, at 58.

remain even after cases are equated for injuries. In the end, deep pockets are assessed more.[495]

As Hans has pointed out, important questions remain.[496] Why assume that the lower awards assessed against individual defendants are the correct ones and the larger ones include a surcharge? Does the residual difference represent a surcharge against deep pockets or a discount to shallow pockets? Hans suggests that the difference between awards against corporate and individual defendants in cases involving the same degree of injuries may be the result not of surcharging corporate and professional defendants, but of giving discounts to individual defendants.[497] Recall the findings of other research we have reviewed showing that in general juries undercompensate for economic losses, even against deep pocket defendants.[498] If the larger awards come closer to the actual value of the plaintiff's losses, it makes more sense to think of the lower awards against individual defendants as being still deeper discounts.[499]

Hans and Ermann have attempted to explain the observed difference that remains even after controlling for objective differences in the injuries.[500] By conducting trial simulations using cases identical but for whether the defendant was an individual or a corporation, they found evidence of the following explanation. The superior resources of deep pocket defendants implies a greater capacity to foresee and control harmful consequences. This perception leads jurors to assign greater intentionality or recklessness when a professional or corporation injures someone than when an ordinary individual does so. At the same time, the organizational character of a defendant lowers the perceived responsibility of any

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[495] If injuries and injury costs were measured more precisely, or if additional control variables were included, some additional portion of the apparent difference would no doubt disappear. For example, lawyers in higher stakes cases may do a better job of proving damages or hire an economist expert witness. *See supra* notes 458-62 and accompanying text. On the other hand, some of the difference would remain.

[496] *See* Valerie P. Hans, *The Jury's Response to Business and Corporate Wrongdoing*, LAW & CONTEMP. PROBS., Autumn 1989, at 177, 202.

[497] *See id.* at 195.

[498] *See supra* notes 234-63 and accompanying text.

[499] These discounts are inappropriate, it would seem, from the viewpoint of the law of remedies. Plaintiffs should not be further disadvantaged merely because a defendant is an individual with relatively limited resources.

[500] *See* Valerie P. Hans & M. David Ermann, *Responses to Corporate Versus Individual Wrongdoing*, 13 LAW & HUM. BEHAV. 151, 158-59 (1989).

single individual within the organization. Hans's experimental studies, in which the defendant was either "Mr. Jones" or the "Jones Corp.," found that jury verdicts were related to perceived intentionality or recklessness, but were not correlated with perceptions of financial resources.[501] These results suggest that the "deep pocket effect" might well be renamed the "perceived responsibility effect."

Such differences in perceived knowledge and control may reasonably affect liability *verdicts*, but ought not affect the size of damages. Yet, they do affect awards. Greene has suggested that jury awards reflect a fusion of liability and damages; how blameworthy the defendant is seen to be affects the size of the award.[502]

Hans and Ermann's findings can be interpreted by the fusion phenomenon: Because corporations were perceived as more blameworthy, they were assessed higher damages.

In the preceding section on liability verdicts, I noted that a large body of research suggests that juries' decisions are rational at least in the sense that they are responsive to the evidence and arguments placed before them.[503] One study makes this point clear with respect to damages. Peterson conducted further analyses of Rand's Cook County data, trying to make sense of variation in damage awards.[504] He found that "[j]ury awards are closely related to the amount of medical specials."[505] Medical expenses as predictors of total jury awards produced a multiple correlation coefficient of .51.[506] When injury severity, lost income, and case type were used to predict total awards, they did so across two decades with a multiple correlation of .51.[507]

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[501] *See id.* at 159-61.

[502] *See* Edith Greene, *On Juries and Damage Awards: The Process of Decision-making*, LAW & CONTEMP. PROBS., Autumn 1989, at 225, 227-46 (reviewing the small body of literature on damage awards). For further evidence of fusion, see Dale W. Broeder, *The University of Chicago Jury Project*, 38 NEB. L. REV. 744, 757-59 (1959) (citing jury interviews in which jurors indicated that blameworthiness affected the amount of compensatory damages awarded); Kalven, *supra* note 453, at 167 (noting that "jurors . . . may simply fuse the liability and damage issues sufficiently to shade their estimate of the damages").

[503] The evidence in this section suggests that if we are to characterize jury decisions as irrational, the ways in which that is most obviously true are that juries undercompensate for losses (probably because of poor exponential adjustment and by overlooking damage components) and fuse blameworthiness with compensation amount.

[504] *See* COMPENSATION FOR INJURIES, *supra* note 346, at iii-iv.

[505] *Id.* at 23.

[506] *See id.* at 90.

[507] *See id.* at 91 (relating that for the 1960s this figure was .49k and for the 1970s

What can we conclude from these findings? On the one hand, these jury awards were, to a considerable extent, predictable by knowing something about the evidence with which the juries were confronted, namely, the severity of the injuries and losses. This is far more sensible decision-making than many who comment on jury awards would have us believe.[508] Simply looking at medical bills and placing injuries into a few broad categories transformed Rand's Cook County data from a picture that "fueled existing concerns about 'runaway verdicts'"[509] into findings showing that "[t]he size of jury awards was strongly related to the amount of medical specials, a relationship that was clearly shown."[510]

On the other hand, if half of the variation in awards has been accounted for, half has not. No doubt the predictability of awards could be improved by identifying and including more predictor variables.[511] But those holding juries to a standard approaching perfection would soon find at least two grounds for renewing their criticisms. First, some of the additional predictor variables would turn out to be, if not irrational, at least disapproved of by the law

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it was .52). These numbers will take on considerable meaning in subsequent paragraphs. For the moment, their definition will have to suffice: These numbers represent the proportion of variance in the dependent variable (in this instance, the jury's total award) accounted for by the variables being used to try to predict it. They may be thought of as percentages. In this first example, 51% of the variance in awards was accounted for by knowing the victim's medical expenses.

[508] *See, e.g.*, Mosberg, *supra* note 53, at 873 ("[T]he amount of award should be commensurate with the damages that have been sustained. Instead, based on emotion rather than reason and unrestrained by judges who should know better, juries grant outrageous awards bearing no relation to reality."); Zuckerman, *supra* note 303, at 80 ("Personal injury awards, especially jury awards, are out of touch with reality.").

[509] COMPENSATION FOR INJURIES, *supra* note 346, at 1.

[510] *Id.* at vi.

[511] The predictive strength of the awards could be improved, partly by refining the injury categories, partly by taking into account other distinguishing facts about the cases, and partly by including other relevant information received by the judge or jury. For example, the flagrancy of the culpability may affect the size of verdicts. At a meeting of the American College of Obstetricians and Gynecologists, a director of maternal/fetal medicine at a California hospital was reported as saying: "While many physicians are sued unfairly, . . . physicians also must recognize that 'the greatest cause of malpractice is malpractice. . . . You must understand that some of the malpractice out there is so grievous, offensive, and implausible as to beggar the imagination.'" Carol Cancila, *Clean Own House to Go After Liability Woes, MDs Told*, AM. MED. NEWS, June 21, 1985, at 26, 26 (quoting statement of Barry S. Schifrin, Director of Maternal/Fetal Medicine, Huntington Memorial Hospital, Pasadena, CA). It is possible that "grievous, offensive, and implausible" torts are the cause of large tort verdicts.

(for example, attributing more responsibility to corporations and professionals than to individuals). Second, we eventually would reach a point of diminishing returns where additional predictors would add too little predictive power to warrant including them. Some unexplained and random variation in jury awards would remain.

Instead of comparing jury decisions to a standard of perfection, suppose we were to judge them against the standard of other human institutions. Earlier I discussed the reliability of juries compared with judges, doctors, and scientists and found that they more than held their own.[512] We can now add that the proportion of variation in awards that has already been explained is impressive. Evidence of injury severity has a greater effect on juror decisions than several of the most acclaimed modern medical treatments have on their objects.[513] If evidence presented to juries for their decisions may be regarded as the legal system's "treatment" for unresolved disputes among parties and rational, predictable responsiveness to that information is the measure of effectiveness, then the evidence-jury "treatment" has been phenomenally more successful than important medical breakthroughs.[514]

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[512] *See supra* notes 316-18 and accompanying text.

[513] Contemporary medical discoveries provide a basis for comparison. For example, aspirin was regarded as so successful at preventing heart attacks that research on it was discontinued and the treatment was made available to the general public. The comparable r-squared relating aspirin-taking to heart attacks was .0011. *See* Robert Rosenthal, *How Are We Doing In Soft Psychology?*, 45 AM. PSYCHOL. 775, 775-76 (1990) (calculating r-squared); *see also* Steering Committee of the Physicians' Health Study Research Group, *Preliminary Report: Findings from the Aspirin Component of the Ongoing Physicians' Health Study*, 318 NEW ENG. J. MED. 262, 263 (1988) (providing raw data for r-squared calculation). Similarly, on October 2, 1981, the National Heart, Lung, and Blood Institute discontinued research on propranolol because the drug had proved to be so successful; its r-squared was .0016. *See* Rosenthal, *supra* (calculating r-squared); *see also* β-Blocker Heart Attack Trial Research Group, *A Randomized Trial of Propranolol in Patients with Acute Myocardial Infarction*, 247 JAMA 1707, 1712 (1982) (providing raw data for r-squared calculation). A third example is cyclosporine, regarded as a major breakthrough in organ transplantation, with an r-squared relating use of the drug to organ rejection of .036 and to patient survival of .022. *See* Rosenthal, *supra* (calculating r-squared); *see also* Canadian Multicentre Transplant Study Group, *A Randomized Clinical Trial of Cyclosporine in Cadaveric Renal Transplantation*, 309 NEW ENG. J. MED. 809, 811 (1983) (providing raw data for r-squared calculation).

[514] The jury treatment ranges from being a dozen times more potent than cyclosporine to hundreds of times more potent than propranolol to thousands of times more potent than aspirin's effect in preventing heart attacks. *See supra* note 513.

When the statistical mirages have been dispersed and replaced with real data, and reasonable standards are adopted for evaluating the performance of the institutions of the civil trial and the jury, warts will still be evident. But we will know that what is needed is a dermatologist, not a neurosurgeon.

H. *Cost*

More must be said about costs—to defendants, insurers, injury victims, and society—as they relate to the behavior of the tort litigation system. Costs include, but go far beyond, payments resulting from settlements and trial awards.

1. Post-Verdict Adjustments

Settlements and trial awards are not the final stage of the litigation process. Parties unhappy with awards can request the trial judge to undertake additur and remittitur review.[515] If the additur or remittitur process leaves either party dissatisfied, they can appeal the trial results. Appeal, or the threat of appeal, often leads to further negotiations before an appellate court has a chance to uphold or modify the trial award. The outcomes of many trials are altered through agreements between the parties, usually resulting in reduction of the trial awards.[516] One major study found awards were reduced in 15% of cases and increased in 2-3%.[517] Defendants paid an average of 71% of what the juries

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[515] The prospect of additur does not exist in the federal courts. *See* Dimick v. Schiedt, 293 U.S. 474, 487-88 (1935) (holding that the Seventh Amendment prohibits federal courts from increasing jury awards (additur) but allows the courts to decrease them (remittitur)). To give an extreme example of remittitur, a jury's award of $125 million in punitive damages in a famous Pinto fire case was reduced by the court to $3.5 million. *See* Grimshaw v. Ford Motor Co., 174 Cal. Rptr. 348, 390-91 (Cal. Ct. App. 1981).

The asymmetry of post-trial adjustment combined with the increased variance in awards due to jury size reduction, *see supra* notes 463-67, produces an ironic consequence: it exaggerates still further the disproportionate effect of remittiturs. (The additional outlier awards at the high end are reduced, but more outliers at the low end remain erroneously low.) Thus, insurers and defendants have a net gain. Yet the impression of unpredictability created by that increased variation probably has frightened insurers into raising their premiums in order to reserve more and brace themselves for an "unpredictable" future.

[516] *See* MICHAEL G. SHANLEY & MARK A. PETERSON, POSTTRIAL ADJUSTMENTS TO JURY AWARDS at iii (1987).

[517] *See id.* at 27.

awarded.[518] The larger the awards, the sharper the reductions.[519]

The post-trial reduction data counsel against taking trial awards for something they are not. Although it makes sense to interpret trial verdicts as revealing what juries or judges think a particular case or type of case is worth,[520] they do not reveal what defendants and insurers actually are paying in damages. To understand the behavior of the *system*, one needs to know what the system is doing. Shanley and Peterson conclude: "[T]he system appears to work already in much the same way that the current proposals for legal change are intended to work, namely by [reducing] 'excessive' awards."[521]

2. The Cost of Litigation

A major expense of the litigation system is its transaction costs. Evaluating the system requires consideration not only of the decisions made and the dollars shifted between parties, but the costs of carrying out those decisions and how those costs compare to alternatives to the system—in short, a cost-benefit analysis. Although

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[518] *See id.* Recall that punitive damage awards were reduced more sharply. *See supra* notes 389-434 and accompanying text.

[519] *See* SHANLEY & PETERSON, *supra* note 516, at viii. Shanley and Peterson found the following data:

Trial Award (in $000's)	Amount Paid (in $000's)	Ratio of Amount Paid to Award
1-99	23	.93
100-999	314	.82
1000-10,000	2673	.68
over 10,000	27,220	.57

See id.

Interesting differences emerge from disaggregating the cases in other ways. Deep pockets pay .77 while individual defendants pay .58—despite the fact that jury awards were six times greater when deep pockets were defendants. *See id.* at x. This suggests either that judges agreed that juries were headed in the correct direction in light of the facts (by assessing larger damages against corporate defendants) but had not gone far enough in distinguishing the cases, or that judges give individual defendants even steeper discounts than juries do. Medical malpractice awards were reduced more sharply (to .67) than other personal injuries (.78). *See id.* Ultimate payouts for product liability, however, were .91, again suggesting greater agreement by judges with the juries' awards. *See id.*

[520] Although, as pointed out above, most studies have measured only the naked award and very few have made any effort to measure the *cases* and changes in the *case mix* over time, leaving us not even knowing this much. *See supra* notes 334-46 and accompanying text.

[521] SHANLEY & PETERSON, *supra* note 516, at xii.

a formal analysis is beyond the scope of this Article, it is relevant to note that one is required and that the transaction costs of the tort litigation system are by no means trivial.

In the middle of the 1980s, the typical dollar expended in auto tort litigation was distributed this way: $.52 in net compensation to the plaintiff, $.24 to plaintiff's legal fees and expenses, $.13 to defense fees and expenses, and $.13 to various other costs.[522] Put differently, it cost society $1.92 to deliver $1 of compensation to a victim of negligent injury. The non-auto tort litigation compensation dollar provided less to injury victims: $.43 in net compensation, $.20 to plaintiff's legal fees and expenses, $.18 to defendant's fees and expenses, and $.20 to other costs.[523] That is, delivering $1 in compensation cost $2.33.

Perhaps the grimmest cost picture comes from asbestos litigation. The average cost to a defendant to try an asbestos case was $125,000 (which equalled 49% of the average compensation paid).[524] The defense cost of a settled or dismissed case was $33,000 (60% of the average settlement paid).[525] Where a defendant paid nothing to a plaintiff, defense expenses were $59,000 per tried case and $10,000 per settled case.[526] For every $1 of compensation received by a plaintiff, the litigation expense for defendants was $0.95 and for plaintiffs $0.64. Delivering $1 of compensation cost $2.59.[527]

One survey of insurance companies in the early 1980s found that legal expenses, though not necessarily amounts paid to claimants, were soaring.[528] Based on both published and unpublished insurance company data, Rand researchers estimated the total cost of tort litigation in 1985 at somewhere between $29 and $36 billion.[529] Of that total, $16-19 billion, slightly more than half, was spent on transaction costs and $14-16 billion went to compensa-

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[522] *See* HENSLER ET AL., *supra* note 192, at 27. The various other costs include value of defendant's time, plaintiff's time, claims processing, and court expenditures.

[523] *See id.*

[524] *See* JAMES S. KAKALIK ET AL., VARIATION IN ASBESTOS LITIGATION COMPENSATION AND EXPENSES 74 (1984).

[525] *See id.*

[526] *See id.* at 88.

[527] *See id.* at 91.

[528] *See* PETERSON, *supra* note 227, at 1-2 (noting that 11 of 24 insurance companies surveyed reported more than a doubling of legal expenses in a five-year period ending in 1982).

[529] *See* JAMES S. KAKALIK & NICHOLAS M. PACE, COSTS AND COMPENSATION PAID IN TORT LITIGATION at vi (1986).

tion of the victims of injury.[530] The cost of insuring against these losses adds an amount about equal to the costs themselves.[531] When insurance costs are added in, the total rises to $68 billion.[532] In short, the principal beneficiaries of the tort system are insurers, followed by lawyers. The injury victims themselves take a more modest slice.[533]

3. The Cost of Accidents

A recent Rand study calculated the direct and work-loss costs resulting from non-fatal accidents in the United States to be $175.9 billion annually.[534] Of this sum, $86.4 billion is paid for medical care, and most of the rest reflects work loss in various forms.[535] About 38% of these direct costs are paid out of the pockets of the injured and their families.[536] About two-thirds of the cost of lost earnings are borne by the accident victims or their families.[537] The study found that "[w]orkers' compensation pays the hospital bill for about 50 percent of individuals injured during work time."[538]

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[530] *See id.* at 67-68. Eight to ten billion dollars went to legal fees and other defense expenses. This is an average of $5400-6600 per case. *See id.* at 67. To plaintiffs' fees and expenses went six to eight billion dollars, an average of $7300-8800 per case and approximately 30-31% of total compensation paid to plaintiffs. *See id.* at 68. Court costs consumed one-half billion dollars. *See id.* Mean compensation paid equalled $24,000-29,000 per case, including all tried, settled, and dismissed cases and including those in which payment was zero. *See id.* at 69.

[531] *See id.* at 75.

[532] *See id.* (citing ROBERT W. STURGIS, THE COST OF THE U.S. TORT SYSTEM: AN ADDRESS TO THE AMERICAN INSURANCE ASSOCIATION (1985)).

[533] Defendants also enjoy great advantages under the existing regime. The regime allows them to internalize far less than the full cost of the losses they inflict. *See supra* notes 102-32 & 224-63 and accompanying text (discussing low claiming and undercompensation, respectively).

[534] *See* COMPENSATION FOR ACCIDENTAL INJURIES, *supra* note 110, at 52. These dollars pay for "almost one-fourth of the nation's total spending for inpatient care each year" and "15 percent of the nation's ambulatory care bill each year." *Id.*

[535] *See id.* at 53.

[536] *See id.* at 53-54.

[537] *See id.* The study reports: "The income loss borne by individuals and families amounts to $51 billion annually." *Id.* at 85. Not surprisingly, given that better paying jobs are more likely to include disability benefits, the less a person earned, the larger a proportion of his or her earnings went unreimbursed. *See id.* at 84. Those earning $50,000 or more per year had to absorb 37% of the cost of their lost earnings; those earning $25-50,000 lost 65% of their earnings; and those earning under $25,000 had 80% of their losses go unreimbursed. *See id.*

[538] *Id.* at 79.

Most other direct costs are paid by first party insurance or by taxpayers through various forms of social insurance.[539]

The tort system plays a surprisingly small part in all of this. Liability payments paid the hospital costs of three percent of hospitalized patients and five percent of those receiving outpatient care.[540] The tort liability system compensated only $7.7 billion of the $175.9 billion of direct personal losses due to accidental injuries.[541]

Clearly, the tort system is not intended to compensate the costs of all accidental injuries. Many, perhaps most, of these injuries may not be the result of tortious conduct by potential defendants. But the very gap between the losses suffered and the liability system's contribution to paying these losses is contrary to much of what is popularly believed about that system.[542] These cost findings are consistent with evidence reviewed earlier that the tort system is used to resolve far fewer cases than it legitimately could.[543]

4. The Cost of Accident Avoidance

One of the greatest increases in costs associated with litigation may grow not out of lawsuits themselves, but out of irrational fears of lawsuits—irrational in that they respond not to the actual behavior of the tort litigation system but to inaccurate beliefs about that behavior.[544] The economics of tort law expects people to modify their behavior in light of the actual risks of negligently injuring someone and the costs associated with compensating for those injuries.[545] The costs associated with irrational fears of lawsuits

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[539] *See id.* at 1.

[540] *See id.* at 80.

[541] *See id.* at 101. Total liability payments for all non-fatal accidents equal $15.7 billion, but after subtracting the amounts paid for property damage, legal fees, and pain and suffering awards, what remains is $7.7 billion. *See id.* Furthermore, of the 1.4 million people who do receive compensation from a tort liability claim each year, only 40% use lawyers to assist in obtaining those payments. *See id.* at 100.

[542] One commentator expressed the view of many when he said: "The litigious nature of the American public, as much as any other factor, has created the present dilemma. A philosophy has permeated our society that no matter what happens, someone is responsible and someone must be made to pay." Mosberg, *supra* note 53, at 860.

[543] *See supra* notes 102-32 and accompanying text (discussing claiming behavior).

[544] Throughout this Article are examples of the gaps that exist between what people think the litigation system has been doing versus what the evidence indicates it actually is doing.

[545] *See* CALABRESI, *supra* note 3, at 26; POSNER, *supra* note 3, at 122-23.

include: excessive reserves by insurers,[546] defensive medicine,[547] and products not produced.[548] Can massive miscalculation be efficient?

The Minnesota Commerce Department's study of medical malpractice insurers found that 1982 was the high water mark for losses; in subsequent years losses declined.[549] In addition, mean payments were decreasing. Nevertheless, insurers "consistently and significantly over-reserved. Ending reserves have been three times higher than actual loss payments over the last five years."[550]

The American Medical Association estimated that $9 billion of health care costs were spent on defensive medicine in 1984.[551] That same year, the total cost of premiums for medical malpractice insurance coverage was $1.775 billion.[552] Doctors apparently were going to extraordinary expense to avoid lawsuits.[553] They were, if the data are to be believed, quintupling the nation's medical malpractice insurance costs. Moreover, those ordering unnecessary tests risked harm to patients and more lawsuits in a desperate effort to avoid lawsuits.

A full understanding of the behavior of the tort system requires an understanding of the responses that the system, or its apparition,

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[546] Throughout this Article I have endeavored to find explanations for both real and apparent problems with the tort litigation system that involve natural, normal, understandable, and often desirable social and technological changes—rather than mysterious or fantastic discontinuities in the behavior of people or their institutions.

I want to continue the same supposition now by assuming that insurance company over-reserving in the face of stable or declining losses is the result of their own real (even if mistaken) fears of potential lawsuits. I also urge the reader at least to suspend any suspicion that these insurers were mendaciously raising their reserves and their premiums in order to wrest excessive profits from customers whom they knew would be all too willing to blame the legal system rather than their insurers.

[547] *See* INSURANCE INFO. INST., *supra* note 361, at 59.

[548] *See, e.g.*, Mahoney & Littlejohn, *supra* note 337, at 1395 (claiming that the "slowing of innovation is directly attributable to a dramatic increase in product liability lawsuits").

[549] *See* MINN. CLAIM STUDY, *supra* note 385, at 19.

[550] *Id.*

[551] *See* INSURANCE INFO. INST., *supra* note 361, at 59. A cautionary note is in order here: These are among the softest data mentioned in this Article. The line between good medical practice and defensive medicine is a fuzzy one. It is doubtful that anyone believes that if physicians were insulated from all liability tomorrow, $20 billion would be subtracted from next year's national health care bill. *See* DANZON, *supra* note 6, at 146-49.

[552] *See* INSURANCE INFO. INST., *supra* note 361, at 34.

[553] Of course, the expense is not that of the doctors, but the patients and their health insurers. Indeed, quite apart from "defensive medicine," more tests ordered mean more physician profits.

engenders in people. Among the costs of the current tort system, and the alternatives to it, that must be taken into account are the costs, in dollars and behavior, associated with irrational or excessive reactions to the risk of suits, if that is what these examples are.

5. Compensation

From a compensation viewpoint, the problem with the tort system is not that it over-compensates or wildly compensates or imposes undue costs on liable injurers. Its principal shortcoming seems to be that it usually provides no compensation at all or, when it does, it under-compensates. So little compensation is achieved through the tort system that only as an act of hyperbole can it be said to be part of an injury compensation system. As we saw above, of the $176 billion annual direct costs for non-fatal accidental injuries, the tort system provides compensation for less than $8 billion (at the expense of an additional $7 billion or so in transaction costs).[554]

6. Deterrence

On the other hand, the tort liability system may be doing a better job as a deterrent than it usually receives credit for. Where a deterrence system directly touches only a fraction of the cases it is intended to have impact upon, it needs to find a way to make up for the reduced probability that any potential injurer will feel its effects. One obvious solution would be to multiply penalties so that the cost of doing harm discounted by the probability of being held to account for that harm still amounts to a deterrent—if you are not going to hit often, hit hard.[555] But the data strongly suggest that our tort system hits infrequently and lightly. Yet, it has nevertheless somehow succeeded in frightening a great many potential defendants, who seem to go to considerable lengths to avoid becoming actual defendants.[556] Somehow people have come to overesti-

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[554] *See supra* notes 534-41 and accompanying text.

[555] *See* POSNER, *supra* note 3, at 170 (making this point more eloquently in the context of criminal law).

[556] For example, physicians on average estimate that if they were to injure a patient negligently, the probability that they would be sued is .60; the actual probability is .02. *See* HARVARD MEDICAL PRACTICE STUDY, *supra* note 85, at 9-23. Their estimate is 30 times the actual risk. Moreover, even their inflated risk estimate reflects a belief that the tort system holds physicians accountable for many fewer than the full number of negligent injuries inflicted. Yet they still seem inordinately

mate vastly the tort system's vigilance and the magnitude of its sanctions. Perhaps the tort system achieves what deterrence it does by the unpleasantness of its operation—at least as that is experienced or imagined by defendants.[557] The tort system is a mouse with an otherworldly roar.

CONCLUSION

This Article has presented an empirically informed guided tour of the tort litigation system. A comprehensive picture, based on the best available evidence, suggests a system that behaves quite differently from what is widely assumed.

A tiny fraction of accidental deaths and injuries become claims for compensation; even known actionable injuries rarely become lawsuits.[558] In both federal and state courts, torts has not been the largest or the fastest growing area of civil litigation. The great majority of all kinds of civil suits result in negotiated settlements. On average, these settlements undercompensate the plaintiff's losses. Modest losses are fully or overcompensated, but the larger the loss suffered, the more pronounced the undercompensation. The great majority of jury verdicts reach the same result that judges would in the same cases. The degree of judge-jury agreement is all the more striking when we recognize that the clearest cases are removed from the system before trial. In the aggregate, jury awards are remarkably predictable. Over half the variation can be accounted for merely by knowing the severity of the plaintiff's injuries. Paralleling settlements, however, jury awards overcompensate small losses, undercompensate larger losses, and on average undercompensate plaintiffs. Judicial review at and after trial tends to reduce rather than increase awards, most dramatically for punitive damages.

At nearly every stage, the tort litigation system operates to diminish the likelihood that injurers will have to compensate their victims. Only a small fraction of the costs created by actionable injuries will ever be paid by the injurers. Although the tort system plays only a tiny part in the compensation of victims of accidental injury, and does so at relatively high transaction costs, it may be

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concerned with taking steps to reduce the risk of a lawsuit.

[557] The source of its effectiveness as a deterrent, if indeed it has any, may be likened to the title of a book on the criminal justice system: MALCOLM FEELEY, THE PROCESS IS THE PUNISHMENT (1979).

[558] The major exception to this is auto accident injuries.

more efficient and effective as a deterrent. At the same time that it provides such infrequent and partial compensation, it succeeds in generating huge overestimates of its potency in the minds of potential defendants.

Although the preceding sketch is faithful to the available empirical evidence, the available evidence provides a poor basis for resting any conclusions about the behavior of the tort litigation system. More than an inquiry into the findings of empirical evidence about the litigation system, this Article has been a critical evaluation of the evidence itself. Data about the civil justice system have failed to include variables of central interest, or have been unable to encompass a diverse geographic and jurisdictional range, or have been unable to cover more than a brief time period. In short, official statistics have failed to track much of the most basic information about the performance of the system, and they continue to be deficient in many respects. As a result, official judicial system data play a surprisingly small part in much of the research and policy debate about the behavior of the system. Even if the basic descriptive data were reasonably complete, no research has made much, if any, attempt to control for extraneous influences that distort the data. As we can see from existing studies, the fewer control variables employed, the more dramatic changes over time appear to be. The more control variables, the more muted the changes, to the point of disappearing.[559]

We cannot draw rigorous or even reasonable conclusions about changes in the behavior of the litigation system because the overwhelming bulk of the research lacks any but the most primitive controls, and much of it lacks even that. In short, our society has been unable to produce research that is even minimally adequate to answer our most basic questions about the behavior of the civil justice system.

The absence of empirically validated models of the behavior of the litigation system, incorporating data about both the system and the environment which produces its cases, leads to a panoply of problems. Reform efforts must guess at which problems are real and which are mythical. Being the product of guesswork, some

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[559] Medical research provides a direct analogy. The more poorly designed a piece of research is, the more dramatic the changes due to treatment appear to be. The better designed the research, the more modest, or downright disappointing, the findings are. *See* John P. Gilbert et al., *Statistics and Ethics in Surgery and Anesthesia*, 198 SCIENCE 684, 686-87 (1977).

reforms will produce effects contrary to the intentions of their makers; indeed, some already have. We will fail to anticipate future changes in litigation activity caused by changes in the law or the legal system or the social, economic, or technological environment of the litigation system. Because they will arrive unexpectedly and their causes will be poorly understood, the effects of those changes will repeatedly arrive as new "crises."

Finally, the absence of a reliable model of the behavior of the tort system leaves us in a poor position to evaluate radical reconsiderations of our system of accident compensation and deterrence. Even if we agreed on the values and goals of such a system, we have no sound basis for concluding that those goals would be more likely to be reached by abandoning the tort system in favor of a no-fault system, by finding ways to make a tort system that is more active and efficient, or by retaining the current system.

APPENDIX A:[560] ACCIDENTAL DEATH

Year	Motor Vehicles						Workplace		
	Number in 000's			Rate per 100,000 Pop			Number in 000's		
	Deaths	Perm Injury	Temp Injury	Deaths	Perm Injury	Temp Injury	Deaths	Perm Injury	Temp Injury
1955	38	110	1250	23	66	753	14	75	1800
1960	38	120	1280	21	66	708	14	85	1850
1965	49	150	1700	25	77	875	14	90	2000
1970	55	170	1850	27	83	902	14	90	2100
1975	46	150	1650	21	69	764	13	80	2100
1980	53	150	1850	23	66	812	13	80	2100
1981	51	150	1750	22	65	760	12	70	2000
1982	46	150	1550	20	65	667	11	70	1800
1983	45	150	1450	19	64	618	11	70	1800
1984	46	140	1600	19	59	675	12	70	1800
1985	46	140	1600	19	59	669	12	70	1900
1986	48	140	1700	20	58	704	11	60	1700
1987	49	150	1700	20	61	697	11	70	1700
1988	49	150	1700	20	61	691	11	60	1700
1989	47	140	1600	19	56	643	10	60	1600

[560] The data for Appendix A are compiled from the National Safety Council's annual publication ACCIDENT FACTS, *supra* note 77. Raw frequencies for the several categories were combined with U.S. population data to arrive at the rates per 100,000. *See* STATISTICAL ABSTRACT, *supra* note 94, at 7 tbl. 2.

AND INJURY IN THE U.S. SINCE 1955

Workplace			Total						
Rate per 100,000 Pop			Number in 000's			Rate per 100,000 Pop			
Deaths	Perm Injury	Temp Injury	Deaths	Perm Injury	Temp Injury	Deaths	Perm Injury	Temp Injury	Year
8	45	1085	93	340	9000	56	205	5424	1955
8	47	1024	93	360	9050	51	199	5009	1960
7	46	1029	107	400	10000	55	206	5147	1965
7	44	1024	114	400	10400	56	195	5072	1970
6	37	972	102	380	10300	47	176	4769	1975
6	35	922	105	360	9600	46	158	4215	1980
5	30	869	99	350	9000	43	152	3911	1981
5	30	774	93	350	8600	40	151	3699	1982
5	30	767	91	350	8400	39	149	3578	1983
5	30	759	92	330	8400	39	139	3544	1984
5	29	794	92	340	8700	38	142	3636	1985
5	25	704	94	330	8600	39	137	3559	1986
5	29	697	94	350	8400	39	143	3444	1987
4	24	691	96	340	8700	39	138	3535	1988
4	24	643	94	340	8600	38	137	3457	1989

APPENDIX B[561]

FEDERAL CIVIL DATA, 1974 TO PRESENT

Year	Filings Total	Total Torts	Over-payment Recovery	Social Security	Total Product Liability	Total Other Contracts	Total Nontort
1974	103530	24231	294	3585	1579	10595	79299
1975	117320	25691	681	5846	2886	12391	91629
1976	130597	25736	1087	10355	3696	12473	104861
1977	130567	26029	865	10095	4077	12628	104538
1978	138770	26375	1856	9950	4372	13484	112395
1979	154666	28901	9254	9942	6132	16468	125765
1980	168789	32539	15588	9043	7755	20098	136250
1981	180576	33767	18161	9780	9071	19535	146809
1982	206193	34218	30048	12812	8944	21499	171975
1983	241842	36484	41213	20315	9221	24439	205358
1984	261485	37522	46190	29985	10745	24756	223963
1985	273670	41593	58160	19771	13554	26849	232077
1986	254828	42326	40824	14407	13595	28840	212502
1987	239185	42977	24233	13338	15143	28273	196208
1988	239634	44961	18676	15152	17140	27725	194673
1989	233529	42090	16467	10206	14348	28415	191439
1990	217879	43759	10878	7439	19428	20398	174120

[561] The data in this table, except data for product liability, are based upon information contained in Table C-2 (in later versions accompanied by Table C-2A) of the Annual Report of the Director of the Administrative Office of the United States Courts. Product Liability data are compiled in a separate section of the Annual Report. *See* 1990 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 84, 139-40; 1989 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 116, 176-79; 1988 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 180-83; 1987 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 114; 1986 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 175-77; 1985 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 154, 280-81; 1984 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 148, 253-55; 1983 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 130, 245-47; 1982 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 106, 215-17; 1981 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 219, 366-68; 1980 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 236, 373-75; 1979 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 230, 361-63; 1977 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 212, 317-19; 1976 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 194-95, 293-95; 1975 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 346-48; 1974 ADMINISTRATIVE OFF. U.S. CTS. ANN. REP. 389-90.