AN EXPLORATION OF "NONECONOMIC" DAMAGES IN CIVIL JURY AWARDS

HERBERT M. KRITZER,* GUANGYA LIU** & NEIL VIDMAR***

TABLE OF CONTENTS

* Marvin J. Sonosky Chair of Law and Public Policy, University of Minnesota Law School; Professor *emeritus* of Political Science and Law, University of Wisconsin-Madison. B.A. Haverford College, Ph.D. (Political Science) University of North Carolina at Chapel Hill.

** Lecturing Fellow, Duke Law School. B.A. Nankai University, Ph.D. (Sociology) North Carolina State University.

*** Russell M. Robinson II Professor of Law and Professor of Psychology, Duke University. A.B. MacMurray College, Ph.D. (Psychology) University of Illinois.

The authors would like to thank Nick Pace of the RAND Corporation for making available nonarchived data from RAND's jury verdict studies and Brent Kabler of the Missouri Department of Insurance for making available data on closed medical malpractice claims from Missouri. We would also like to acknowledge Vicki Knox of the Texas Department of Insurance for her assistance in clarifying some of the coding used in the Texas Closed Claim data. John Kirkton of the Law Bulletin Publishing Company generously made available information from the Cook County Jury Verdict Reporter. Finally, we would like to thank the University of Wisconsin Graduate School and the Wisconsin School of Business at the University of Wisconsin-Madison for financial support to obtain the Insurance Research Council closed claim data.

INTRODUCTION

Despite controversy about its role in awarding damages in cases involving punitive damages and medical malpractice, the American civil jury remains a common institution for resolving tort claims and other types of disputes in all fifty states and in federal courts.[1] Not surprisingly, a substantial empirical literature consisting of archival studies, jury simulation experiments, and, in one important instance, records of the actual deliberations of Arizona civil juries, has attempted to learn about how civil juries perform the tasks assigned to them. In this Article, we address a relatively understudied aspect of personal injury awards by civil juries, namely compensatory awards. Specifically, we explore the relationship between so-called "noneconomic" components of compensatory awards and their economic components, a subject that Marshall Shapo among others has discussed as one of the most controversial subjects in tort law.[2] Although previous research, partially summarized *infra*, has explored the relationships between economic and noneconomic components of jury awards, it has been limited in both scope and empirical evidence.[3] Further exploration of this relationship seems appropriate to the theme of the present conference which seeks to place the American civil jury in its political context.[4]

1. The right to a jury trial in common law areas such as tort is guaranteed in federal courts by the Seventh Amendment. U.S. CONST. amend. VII. While the Seventh Amendment has not to date been applied to the states, "the great majority of state constitutions" provide similar guarantees. Eric J. Hamilton, *Federalism and the State Civil Jury Rights*, 65 STAN. L. REV. 851, 852 (2013).

2. MARSHALL S. SHAPO, AN INJURY LAW CONSTITUTION 80-84 (2012).

3. *See infra* Part I.

4. *See generally* Jason M. Solomon, *The Political Puzzle of the Civil Jury*, 61 EMORY L.J. 1331 (2012).

I. PRIOR RESEARCH AND OUR FOCUS ON "NONECONOMIC" DAMAGES

A. The Challenge of Noneconomic Damages

Tort law provides monetary compensation for losses in personal injury cases that include not only concrete, tangible losses such as medical bills, property loss, and past and future lost income, but also for losses that are clearly tangible but ineffable in monetary terms. These include pain and suffering, loss of society, emotional distress, loss of consortium, disfigurement, loss of child-bearing capacity, loss of parental guidance, and loss of enjoyment of life, as well as other categories of loss. Along with the issue of punitive damages,[5] these latter components of damage awards, often summarized as "noneconomic" awards, or simply—and incorrectly—labeled as "pain and suffering," are among the most contentious issues related to the American civil jury. They play a significant role in attempts to limit awards in medical malpractice cases,[6] are a central target of so-called "tort reform" efforts,[7] and are often based on fallacious claims and distortions.[8] Not surprisingly, they are the subject of frequent legal commentary about the goals of tort law.[9]

---

5. The issue of punitive damages, which is not the focus of this Article, has been the subject of a substantial doctrinal debate and commentary, Supreme Court and state court decisions, and a sizeable empirical literature. *See, e.g.*, Sheila B. Scheuerman, Symposium, *Punitive Damages, Due Process, and Deterrence: The Debate After* Philip Morris v. Williams, 2 CHARLESTON L. REV. i (2008).

6. *See, e.g.*, Neil Vidmar & Kara MacKillop, *"Judicial Hellholes:" Medical Malpractice Claims, Verdicts and the "Doctor Exodus" in Illinois*, 59 VAND. L. REV. 1309 (2006); Neil Vidmar, *Medical Malpractice Lawsuits: An Essay on Patient Interests, the Contingency Fee System, Juries and Social Policy*, 38 LOY. L.A. L. REV. 1217 (2005).

7. *See, e.g.*, WILLIAM HALTOM & MICHAEL MCCANN, DISTORTING THE LAW: REFORM POLITICS, MASS MEDIA, AND THE LITIGATION CRISIS 96 (2004); LAWRENCE J. MCQUILLAN ET AL., PAC. RESEARCH INST., JACKPOT JUSTICE: THE TRUE COST OF AMERICA'S TORT SYSTEM (2007), *available at* http://www.legalreforminthenews.com/2007PDFS/PRI_2007JackpotJus ticeFinal.pdf.

8. *See* Tom Baker et al., *Jackpot Justice and the American Tort System: Thinking Beyond Junk Science* (July 2008), http://ssrn.com/abstract=1152306.

9. *See, e.g.*, SHAPO, *supra* note 2, at 80-84; Joseph King, Jr., *Pain and Suffering, Noneconomic Damages, and the Goals of Tort Law*, 57 SMU L. REV. 163 (2004).

A sizeable body of empirical literature bearing on jury damage awards utilizes various research approaches, including systematic interviews with jurors following their verdicts,[10] analyses of actual jury deliberations,[11] simulation experiments with varying factors that might influence the verdict process,[12] and archival studies that draw upon verdict reports to compare the components of actual jury awards across an array of cases.[13]

In this Article, we utilize archival data from multiple sources to attempt to shed more light on the noneconomic components of civil jury awards in personal injury cases. Pursuing this topic by systematically utilizing archival data is important for two reasons. The first reason lies in the nature of noneconomic damages. As many commentators have pointed out, by their very nature noneconomic damages are conceptually a contradiction in terms: they provide monetary compensation for an injury that is intangible in monetary terms.[14] A common claim is that juries do not have the competence to assess these damages because jurors are too often swayed by emotions and in particular do not have the perspective of comparable cases, thus, injecting randomness and unfairness into the tort system.[15]

---

10. *See, e.g.*, VALERIE P. HANS, BUSINESS ON TRIAL: THE CIVIL JURY AND CORPORATE RESPONSIBILITY 17 (2000); NEIL VIDMAR, MEDICAL MALPRACTICE AND THE AMERICAN JURY: CONFRONTING THE MYTHS ABOUT JURY INCOMPETENCE, DEEP POCKETS AND OUTRAGEOUS DAMAGE AWARDS 240 (1995).

11. *See* NEIL VIDMAR & VALERIE P. HANS, AMERICAN JURIES: THE VERDICT 267-79 (2007); Neil Vidmar, *Civil Juries in Ecological Context: Methodological Implications for Research*, *in* CIVIL JURIES AND CIVIL JUSTICE: PSYCHOLOGICAL AND LEGAL PERSPECTIVES 35 (Brian H. Bornstein et al. eds., 2008).

12. See CIVIL JURIES AND CIVIL JUSTICE: PSYCHOLOGICAL AND LEGAL PERSPECTIVES, *supra* note 11, at 23-195, for a review of much of this literature plus other approaches to understanding damage awards.

13. *See, e.g.*, STEPHEN DANIELS & JOANNE MARTIN, CIVIL JURIES AND THE POLITICS OF REFORM (1995); Barry L. Anderson et al., *Report on Awards for Noneconomic Loss*, *in* FLA. MED. ASS'N, MEDICAL MALPRACTICE POLICY GUIDEBOOK 132, 132-48 (Henry G. Manne ed., 1985); MARK A. PETERSON, RAND CORP., COMPENSATION OF INJURIES: CIVIL JURY VERDICTS IN COOK COUNTY (1984), *available at* http://www.rand.org/content/dam/rand/pubs/reports/2007/R3011.pdf; W. KIP VISCUSI, REFORMING PRODUCTS LIABILITY (1991); Randall R. Bovbjerg et al., *Valuing Life and Limb in Tort: Scheduling Pain and Suffering Awards,* 83 NW. U. L. REV. 908 (1989); Neil Vidmar et al., *Jury Awards for Medical Malpractice and Post-Verdict Adjustments of Those Awards*, 48 DEPAUL L. REV. 265 (1998).

14. *See, e.g.*, VIDMAR & HANS, *supra* note 11, at 295-98.

15. For summaries of the various critiques of the civil jury, see DANIELS & MARTIN, *supra* note 13, at 4-26; Peter H. Schuck, *Mapping the Debate on Jury Reform*, *in* VERDICT: ASSESSING

B. The Challenge of Assessing the Appropriate Level of Noneconomic Damages

Critics claim that the noneconomic portion of awards is often much greater than the actual economic loss, suggesting that emotion rather than reason influences juries.[16] Yet, consider the following case of Lillian Walters, a thirty-two-year-old stay-at-home mother of four minor children.[17]

In December 1979, Mrs. Walters's family physician discovered a lump on her neck, and after conducting some tests referred her to a surgeon.[18] The surgeon advised that Mrs. Walters have a portion of her thyroid gland removed due to its diseased condition.[19] The suggested surgery was relatively low risk and normally would result in a small scar.[20] A day after the surgery, while Mrs. Walters was still in the hospital, her condition deteriorated. Her head ballooned in size, she became blind, and she suffered severe respiratory distress.[21] Shortly after she was moved into intensive care, the pathology department advised the surgeon that a piece of esophagus tissue was attached to the thyroid specimen.[22] It was determined that the area of the surgery was now badly infected,[23] and Mrs. Walters was taken back to surgery where the surgeon reopened the wound, discovered a significant hole in the esophagus, determined that repair was not possible, and sewed the esophagus closed.[24] Initially Mrs. Walters could only be fed by a tube inserted into her stomach through the abdomen; she did regain her vision, and after numerous hospitalizations and surgeries, Mrs. Walters was left with

---

THE CIVIL JURY SYSTEM 306, 306-19 (Robert E. Litan ed., 1993). On the specific point of the lack of perspective of comparable cases, see Oscar G. Chase, *Helping Jurors Determine Pain and Suffering Awards*, 23 HOFSTRA L. REV. 763 (1995).

16. *See* PETER A. BELL & JEFFREY O'CONNELL, ACCIDENTAL JUSTICE: THE DILEMMAS OF TORT LAW 136 (1997) ("[J]uries are often overcome with sympathy when faced with someone who has been hurt.").

17. Walters v. Hitchcock, 697 P.2d 847, 848 (Kan. 1985).

18. *Id.*

19. *Id.*

20. *Id.*

21. *Id.* at 849.

22. *Id.*

23. *Id.*

24. *Id.*

a replacement esophagus fashioned from a portion of colon.[25] Although she was then able to consume food via her mouth, the replacement esophagus did not function like an actual esophagus. Mrs. Walters had great difficulty both swallowing and keeping food in her stomach.[26] Eating was painful, and she could not lie flat because food would come back up through the replacement esophagus.[27] Her condition was embarrassing and distasteful to people around her and made living a normal life impossible.[28] Her life expectancy was more than forty years, but no further medical treatment would improve her situation.[29] Because she did not work outside the home,[30] economic damages consisted entirely of past medical expenses, and those expenses totaled approximately $59,000.[31] What would be an appropriate amount for noneconomic damages in this case? Walters's lawyer asked for $4 million in total damages,[32] and the jury in the case awarded $2 million,[33] which meant that the noneconomic damages were about thirty-three times the economic damages. Was this excessive in this case, where the plaintiff experienced a severe, life-changing event with tangible consequences that she had to endure for the rest of her life? Was the compensation award unreasonable?[34]

The *Walters* case partly reveals some of the conceptual problems that exist in thinking about noneconomic damages. Although often labeled by critics as merely pain and suffering, should her injury be

25. *Id.*
26. *Id.* at 852.
27. *Id.*
28. *Id.*
29. *Id.*
30. *Id.* at 848.
31. *Id.* at 857.
32. *Id.* at 847, 849.
33. *Id.* at 848.
34. Critics could raise various issues about this case. For example, given that the award was for a lifetime of suffering, should it in some way be reduced to present value, and if so, what discount rate should be used? At the time of the state supreme court decision that upheld the award against dissent, the interest rate was about 10 percent. *Prime Interest Rate History*, FEDPRIMERATE.COM, http://www.fedprimerate.com/wall_street_journal_prime_rate_history.htm#current (last visited Jan. 29, 2014). At the time this Article was written, the interest rate on a five-year certificate of deposit was around 1 percent. *CD Rates: National High Yield*, BANKRATE, http://www.bankrate.com/funnel/cd-investments/cd-investment-results.aspx?prods=19 (last visited Jan. 29, 2014). The interest rate on a simple savings account is a whopping 0.03%—that is, three hundredths of one percent.

labeled so simply? In fact, many state legislatures have defined additional elements of damages for which there is no clear dollar value, but the jury or judge translates the injury consequences into monetary terms. A sample of medical malpractice verdicts from the *Cook County Jury Verdict Reporter* helps to illustrate these issues.

Araujo v. Leong involved an injury during birth causing hypoxic encephalopathy to deep structures in the brain and resulting in severe cerebral palsy and quadriplegia.[35] The jury award was $17,070,000, which consisted of $3 million in past and future medical expenses, $10 million for caretaking expenses, $570,000 for other economic losses, $1 million for loss of a normal life, $2 million for pain and suffering, and $500,000 for disfigurement.[36] Thus in this case the noneconomic component of the award amounted to 8.8% of the total.

Estate of Petre v. Kucich involved a patient who suffered a serious staph infection.[37] The jury award was $814,444, which consisted of $350,000 for loss of a normal life, $200,000 for pain and suffering, $50,000 for disfigurement, $175,000 for emotional distress, and $39,444 for medical expenses.[38] Thus in this case the noneconomic component amounted to approximately 95% of the total.

Estate of Pettway v. Advocate Trinity Hospital involved a two-year-old male child who suffered a seizure and was rushed to the nearest hospital.[39] A decision was made to transfer him to the University of Chicago Hospital, but first a CT scan was needed to rule out bleeding in the brain.[40] However, there were no records of monitoring the child or recording his vital signs. The child died; he was survived by his parents and five siblings. The breakdown of the $3,662,221 verdict was as follows: $7813 for medical expenses, $4408 for funeral expenses, and $3,650,000 for loss of society.[41] The

35. West's Jury Verdicts—Illinois Reports: Jury Tells Hospital to Pay $17M for Minor's Brain Damage, 2005 WL 4135362 (Ill. Cir. Ct.).

36. Araujo v. Leong, No. 02L-4474, Cook Cnty. Jury Verdict Rptr. (Ill. Cir. Ct. July 31, 2002).

37. No. 02L-14506, Cook Cnty. Jury Verdict Rptr. (Ill. Cir. Ct. Dec. 6, 2005).

38. *Id.*

39. No. 07L-8318, Cook Cnty. Jury Verdict Rptr. (Ill. Cir. Ct. Nov. 26, 2010).

40. *Id.*

41. *Id.*

breakdown of the loss of society component was as follows: $1,500,000 each for the mother and father, $250,000 for one sibling, and $100,000 each for four other siblings.[42]

In *Hopper v. Lopez*, a fifty-seven-year-old male suffered a seizure and was taken to an emergency room.[43] Doctors ordered an MRI to rule out infection as the cause of the seizure.[44] The radiologist who interpreted the MRI failed to report severe sinusitis and an extension of the infection into the left side of the brain.[45] Ten neurologists and an internist relied upon the radiologist's report.[46] The hospital released Mr. Hopper.[47] Two weeks later, however, he had a new set of seizures because the infection had expanded throughout the entire left side of his brain, and five surgeries were required to stabilize him.[48] Mr. Hopper suffered severe, permanent cognitive deficits, which affected every part of his life.[49] The $2,626,000 verdict was composed of $626,000 for past and future medical expenses, $1 million for past and future loss of a normal life, $250,000 for past pain and suffering, and $750,000 to his wife for loss of consortium.[50]

Rodriguez v. Friedman resulted in a $3,270,000 verdict for a brachial plexus birth injury.[51] The child had a shorter, smaller right arm and motion deficits. He underwent three surgeries and several years of physical therapy, and he was recommended for a future surgery.[52] The jury awarded $225,000 for past and future medical expenses, $200,000 for educational expenses, $50,000 for loss of wages, $1,677,000 for past and future disability, $363,350 for disfigurement, and $754,650 for past and future pain and suffering.[53]

---

42. *Id.*
43. Hopper v. Lopez, No. 05L-10747, Cook Cnty. Jury Verdict Rptr. (Ill. Cir. Ct. May 20, 2010).
44. *Id.*
45. *Id.*
46. *Id.*
47. *Id.*
48. *Id.*
49. *Id.*
50. *Id.*
51. No. 05L-14640, Cook Cnty. Jury Verdict Rptr. (Ill. Cir. Ct. Dec. 3, 2010).
52. *Id.*
53. *Id.*

The *Walters* case and the selected other examples draw attention to two important issues. First, the noneconomic aspects of plaintiffs' injuries should not be lumped into a single category called "pain and suffering." Illinois and other state legislatures have delineated a number of categories of damages that, like pain and suffering, cannot be translated directly into a monetary sum.[54] Rather, compensation for these other categories of injury requires human judgment to convert the injury into a monetary sum, typically determined by a jury, although sometimes by a judge or arbitration board.[55]

Second, despite serious or even grievous injury, the plaintiff may have no economic losses or very small economic losses in comparison to noneconomic losses, as the *Walters* and *Araujo* cases above help to illustrate.[56] And, of course, the important substantive and methodological consequence of this observation is that using economic loss as the denominator for assessing noneconomic losses can be very misleading because economic loss does not always capture the severity of the injury in terms of the noneconomic consequences of that injury. Still, one would expect that in the aggregate there would be a relationship between economic and noneconomic injuries and the consequent total amount of the damage award. The core question we examine next is the nature of the relationship between economic damages and noneconomic compensatory damages as determined by juries.

C. Extant Empirical Research on Noneconomic Damages

The second reason for our focus is that the empirical literature bearing on what juries actually do in regard to these noneconomic claims is surprisingly sparse.

---

54. *See, e.g.*, 740 ILL. COMP. STAT. 58/10 (West 2013); MICH. COMP. LAWS § 600.1483(3) (2013); OHIO REV. CODE ANN. § 2323.43(H)(3) (West 2013).

55. Although English common law developed the concept of juries deciding noneconomic damages, such damages in England today are decided by guideline formulas determined by a Judicial Studies Board and are assessed on a case-by-case basis by judicially trained people. *See* JUDICIAL STUDIES BD., GUIDELINES FOR THE ASSESSMENT OF GENERAL DAMAGES IN PERSONAL INJURY CASES ix (Burnett et al. eds., 11th ed. 2012).

56. *See supra* text accompanying notes 18-36.

Jeffrey O'Connell and Rita Simon looked at payments for pain and suffering using a sample of claims that a single insurance company paid to Illinois residents in 1966.[57] They limited their study to claims involving a payment of at least $100, including property loss, economic damages, and noneconomic damages.[58] Their data were derived from a combination of insurance records and interviews with 391 claimants.[59] The authors computed the ratio of payment to loss—the "recovery ratio"—for cases that were litigated (only 17 such cases were in the sample), unlitigated cases in which an attorney represented the claimant (77 cases), and cases with no representation (297 cases);[60] the respective recovery ratios for the three groups were 5.3:1, 2.1:1, and 1.5:1.[61]

In an early study of jury verdicts, Mark Peterson examined almost 9000 cases from the 1960s and 1970s compiled in the *Cook County Jury Verdict Reporter*.[62] Among his findings, verdicts involving high medical expenses and lost income were approximately 4.5 times larger than verdicts for plaintiffs having lesser injuries.[63] Plaintiffs with medical malpractice, product liability, and work injury claims obtained two to four times more than plaintiffs with other types of personal injury claims.[64] However, Peterson was only able to look at total compensatory damages because the data he employed did not separate out various types of compensatory damages.[65]

Ostrom and his coauthors examined data from the National Center for State Courts's study of forty-five urban trial courts during 1992.[66] Those researchers found a large discrepancy between the mean and median awards—with the mean being greater than the median[67]—indicating that very large awards had skewed the

57. JEFFREY O'CONNELL & RITA JAMES SIMON, PAYMENT FOR PAIN & SUFFERING 14 (1972).
58. *Id.* at 15.
59. *Id.* at 14-16.
60. *Id.* at 15-16.
61. *Id.* at 16.
62. PETERSON, *supra* note 13.
63. *Id.* at 28.
64. *Id.* at 36.
65. *Id.* at vi.
66. Brian Ostrom et al., *A Step Above Anecdote: A Profile of the Civil Jury in the 1990s*, 79 JUDICATURE 233, 233 n.1 (1996).
67. *Id.* at 238.

distribution. Medical malpractice cases tended to have much higher awards, on average, than other types of cases.[68] Again, the researchers did not separate economic and noneconomic components of the damages.

Danzon's and Lillard's study of a sample of medical malpractice cases from liability insurers' files closed in 1974 and 1976 found that approximately 7% of claims went to trial and plaintiffs prevailed 28% of the time.[69] Comparing the awards with estimates of economic losses, injury severity, and the plaintiff's age, Danzon and Lillard found that total jury awards for compensatory damages were related to the magnitude of the plaintiff's losses.[70] Those authors assumed that the difference between the insurers' measure of economic loss and the jury award constituted the jury's award for noneconomic damages.[71]

Bovbjerg and his coauthors analyzed a sample of 898 personal injury cases that went to a jury.[72] The median award in 1987 was $82,000, but the mean award was $490,000.[73] Those authors also assumed that the difference between economic loss and total award constituted the compensation for noneconomic damages.[74] Their study also coded the seriousness of the injury according to the National Association of Insurance Commissioner's (NAIC) nine-point scale of injury severity.[75] Awards increased with the severity of injury, except when the outcome was death in which case the award was typically lower.[76] Severity of physical injury accounted for about two-fifths of the variation and other factors accounted for one-fifth.[77] The authors speculated that jury unreliability may explain most of the remaining variability.[78]

---

68. *See id.*

69. Patricia Munch Danzon & Lee A. Lillard, *Settlement Out of Court: The Disposition of Medical Malpractice Claims*, 12 J. LEGAL STUD. 345, 347, 354-55 (1983).

70. *See id.* at 346-47.

71. *Id.* at 358.

72. Bovbjerg et al., *supra* note 13, at 919-24, 936-37.

73. *Id.* at 922.

74. *Id.* at 913 n.31.

75. See *id.* at 921 for the specifics of the NAIC scale, which ranges from 1 (emotional only) to 9 (death).

76. *Id.* at 921-23.

77. *Id.* at 923.

78. *Id.* at 924 n.85.

Daniels and Martin compared medical malpractice and product liability awards in a large sample of cases reported in verdict reporters from venues around the United States.[79] They also found that awards were related to severity of injury.[80] They did not look explicitly at the awards for noneconomic damages because virtually none of the verdict reporters that constituted their sources reported that information.[81]

Viscusi compared payments in a sample of product liability cases, most of which were settled rather than tried.[82] He concluded that payments were related to severity of injury.[83] However, for several reasons, Viscusi's analysis tells us little about jury behavior. First, he did not separate out results for cases in which juries awarded damages to the plaintiff (only 1.5% of the filed claims in his dataset—roughly 150 cases—resulted in a court verdict for the plaintiff).[84] Second, it appears that his analysis focused on payments, which means that even for the cases where there was a plaintiff's verdict, the actual payment may have reflected a remittitur or a post-verdict settlement rather than the amount set by the jury.[85] Finally, Viscusi had to assume that the payment for pain and suffering was the difference between the amount paid and the insurer's estimate of financial loss.[86]

Taragin and his coauthors analyzed a sample of cases taken from the New Jersey Medical Inter-Insurance Exchange.[87] Those investigators were mostly interested in estimates of defendant

---

79. DANIELS & MARTIN, *supra* note 13, at 92-198.

80. *Id.* at 127, 175.

81. Only one reporter that Daniels and Martin used had specific information on both economic and noneconomic damages. The data from that reporter indicated that the award for noneconomic damages was, on average, slightly more than the award for economic damages. *See* Herbert M. Kritzer, *Contingent-Fee Lawyers and Their Clients: Settlement Expectations, Settlement Realities, and Issues of Control in the Lawyer-Client Relationship*, 23 LAW & SOC. INQUIRY 795, 817 n.23 (1998).

82. W. Kip Viscusi, *Pain and Suffering in Product Liability Cases: Systematic Compensation or Capricious Awards?*, 8 INT'L REV. L. & ECON. 203 (1988).

83. *Id.* at 217.

84. *Id.* at 205. Presumably the vast majority of these roughly 150 cases involved jury awards.

85. *Id.*

86. *Id.*

87. Mark I. Taragin et al., *The Influence of Standard of Care and Severity of Injury on the Resolution of Medical Malpractice Claims*, 117 ANNALS INTERNAL MED. 780, 780 (1992).

responsibility,[88] but they did find a relationship between rating of injury severity and amount of total payment.[89] However, their research did report separate elements of the payment data.[90]

Sloan and his coauthors found that in a sample of medical malpractice cases levels of injury and economic losses varied substantially from patient to patient, even among those with roughly comparable injuries.[91] While such variability should surprise no one who thinks about such factors as age and economic differences between plaintiffs, this explanation frequently has been ignored.

Finley examined a sample of California medical malpractice jury verdicts and the potential effects of California's MICRA cap on pain and suffering on plaintiffs who were children, women, elderly persons, and members of minority groups.[92] Finley argued that these were plaintiffs most likely to have relatively low economic losses but major claims for noneconomic damages.[93] Her conclusion was that caps unfairly disadvantaged these types of plaintiffs.[94]

Vidmar, Gross, and Rose obtained a sample of jury verdicts in medical malpractice cases from jurisdictions within three different states: New York, Florida, and California.[95] Those authors classified the cases according to injury seriousness. Consistent with previous research, the total awards were positively related to the seriousness of the physical injury suffered by the plaintiff but tended to drop in cases involving death of the patient.[96] However, similar to previous studies, those authors found that verdict reporters seldom listed the specific elements of the general damage award, instead often lumped all noneconomic awards as pain and suffering.[97] Nevertheless, there were exceptions, namely reporting awards for such losses

88. *Id.* at 780-81.

89. *Id.* at 781-83.

90. *Id.* at 781.

91. Frank A. Sloan & Stephen van Wert, *Cost of Injuries*, *in* SUING FOR MEDICAL MALPRACTICE 123, 139-40 (Frank A. Sloan et al. eds., 1993).

92. Lucinda M. Finley, *The Hidden Victims of Tort Reform: Women, Children and the Elderly*, 53 EMORY L.J. 1263, 1282-84 (2004).

93. *Id.* at 1313.

94. *Id.*

95. Vidmar et al., *supra* note 13, at 266.

96. *Id.* at 284-86.

97. *Id.* at 270, 296.

as loss of companionship, loss of consortium, emotional distress, disfigurement, mental anguish, loss of enjoyment of life, and human damages.[98]

One of the few studies that looked specifically at noneconomic awards was Vidmar and MacKillop's study of a sample of medical malpractice cases from Cook and DuPage counties, in Illinois, as well as two downstate counties covering the years 2001 through 2004.[99] Their article addressed the potential effect of a cap on pain and suffering during that time period.[100] The findings clearly contradicted the claims that pain and suffering constituted 90% of all malpractice verdicts.[101] For the year of 2001, there were thirty medical malpractice awards in Cook and DuPage counties.[102] While eight cases involved pain and suffering awards that equaled or exceeded $1 million,[103] in at least five other cases there was no pain and suffering award.[104] And the pain and suffering component exceeded the economic losses in only four cases.[105] One calculation suggested that, on average, pain and suffering constituted only 15% of the award.[106]

This summary of the extant empirical literature on compensatory damage awards indicates that empirical evidence is sparse, especially when it comes to the noneconomic components of those awards. As Vidmar observed, data in verdict reports often have substantial weaknesses.[107] Much of the difficulty lies in the absence of data, especially information on the precise nature of the injury

98. *Id.* at 296.

99. Vidmar & MacKillop, *supra* note 6, at 1320-32.

100. *Id.* at 1313.

101. *Id.* at 1332-35.

102. *Id.* at 1333.

103. *Id.* at 1333-34.

104. *Id.*

105. *Id.* In several cases, however, there were awards for disfigurement or other components that Illinois statutes defined as economic losses. *See id.* at 1334.

106. Using a set of data on jury verdicts in Wisconsin in the mid-1980s, Kritzer notes that the "best estimate of the ratio [of noneconomic damages to economic damages] for [that] dataset was about 1." *See* Kritzer, *supra* note 81, at 817 n.23.

107. *See generally* Neil Vidmar, *Pap and Circumstance: What Jury Verdict Statistics Can Tell Us About Jury Behavior and the Tort System*, 28 SUFFOLK U. L. REV. 1205, 1233 (1994) ("[M]any of the conclusions drawn from [jury verdict] studies have no scientific validity. The methodological limitations of the databases and errors in conceptualizing the issues do not allow such conclusions.").

and breakdowns of awards into economic and noneconomic components.[108] Moreover, even when the data sources do separate economic from noneconomic components, they rarely delineate the particular elements of noneconomic awards.[109] Nevertheless, with appropriate qualifications, archival data can provide an important starting point to our understanding of what juries actually do.

In this Article, as described immediately below, we draw upon various sources to estimate the relative percentages of jury damage awards across time and across case types. Our goal is to increase discussion about what civil juries do in awarding damages. Hopefully, the findings will provoke discussion about the causes of these outcomes and their fairness—or lack of it—and lead to insights about the role of civil juries in the American democratic process.

II. DATA SOURCES AND ANALYTIC APPROACH

A. Data

As noted in the Introduction, scholars have conducted fairly extensive analyses of punitive damage awards.[110] This has been facilitated by the fact that when there is a request for punitive damages, the jury is asked to decide whether such damages should be awarded and, if so, the specific award.[111] As suggested by our brief review in the previous section, the challenge in looking at noneconomic damage awards is that in many courts juries are asked to return a general verdict in which only a single figure is given covering all compensatory damages.[112] Specific figures for categories of compensatory damages exist only when a jury has been presented with a special verdict form with those categories specified.[113] There are three notable situations in which a special verdict is used. The first is if there is a cap on one or more categories of compensatory

108. *See id.* at 1229.
109. *See id.* at 1228-29.
110. *See supra* note 5.
111. 22 AM. JUR. 2D *Damages* § 788 (2013).
112. *See* Vidmar, *supra* note 107, at 1229.
113. Edith Greene & Brian Bornstein, *Precious Little Guidance: Jury Instruction on Damage Awards*, 6 PSYCHOL. PUB. POL'Y & L. 743, 759-61 (2000).

damages, such as in medical malpractice cases in some states.[114] Normally, juries are not explicitly told of such caps, and the judge will reduce any amount above the cap to no more than the cap.[115] The second situation arises when there is a local practice of using a special verdict form for damages in personal injury cases.[116] The final situation occurs when one side in a case specifically asks that a special verdict form be used—perhaps when the defense is concerned that an award will be excessive—and believes that having a breakdown into categories will facilitate a request for a remittitur.[117]

We identified three sources of data compiled directly from jury verdicts which contain useful information on both economic and noneconomic damages.[118] The first source is a set of original data compiled by the authors using the *Cook County Jury Verdict Reporter*. We obtained copies of verdict reports for auto accident, medical and dental malpractice, and premises liability cases for the years 2005 and 2010.[119] From these reports we coded the amounts for each detailed category of damages listed in the report. We also coded the gender of the plaintiff, the age of the plaintiff, and the severity of the claimed injury using the NAIC injury scale.[120] Coding was conducted by a staff assistant and checked by one of the authors. In cases where multiple plaintiffs suffered personal injuries, we treated each plaintiff as a separate case for purposes of

114. 1 FED. JURY PRAC. & INSTR. § 8.9 (2013).

115. Greene & Bornstein, *supra* note 113, at 762.

116. 1 FED. JURY PRAC. & INSTR. § 8.9.

117. *Id.*

118. Note that for the BJS data and the other four sets of data that we use, we have no way of knowing whether the presence of a nonzero value for either economic or noneconomic damages, but not both, is indicative of all of the damages being allocated by a jury to a single category or of an incomplete record. Hence, we did not include in our analysis cases with a nonzero value for only one category of compensatory damages, but not both.

119. The *Cook County Jury Verdict Reporter* has several other categories of personal injury cases that we have not included. Those categories include FELA/work injuries, common carriers, street hazards, assault/dram shop, animal injury, and product liability. Note that across the two years only six product liability cases involved personal injuries; most of the omitted cases were specialized categories of road/traffic accidents.

120. If the plaintiff claimed multiple injuries, we coded the most severe.

analysis, which gave us a total of 262 observations.[121] The amounts from the 2005 verdicts were adjusted to 2010 dollars.

Not all of the case reports had full breakdowns of damages; for some of those cases we inferred the breakdown between economic and noneconomic damages in one of two ways. For cases that showed specific breakdowns for categories of economic damages or categories of noneconomic damages, but not for both, and for which the total of the breakdown reported was less than the overall verdict, we assumed that the difference between the total and the verdict was the other type of damages. For example, if the total verdict was $20,000 and the report showed that $8000 was for past medical expenses, and $3000 was for lost income, we assumed that $9000 was for noneconomic damages. For cases that provided no breakdown at all but presented the amounts the plaintiff claimed for medical expenses and/or lost income, and the sum of those amounts was less than the verdict, we assumed that the difference between the verdict and the claimed economic damages was the noneconomic damages component. Thus, if the report showed the verdict as $20,000 and the plaintiff claimed $8500 in economic damages, we assumed that the remaining $11,500 awarded was for noneconomic damages. This provided us with 205 cases for analysis. Finally, we relied on the gross jury awards before any adjustments for comparative negligence.

The second source is data on civil jury and bench trials collected by the Bureau of Justice Statistics (BJS) and the National Center for State Courts (NCSC) as a part of the Civil Justice Survey of State Courts (CJSSC) involving a sample of counties around the United States for the fiscal year 2005.[122] BJS and NCSC collected data from samples of the seventy-five largest counties in 1992, 1996, 2001, and 2005;[123] in 2005, BJS and NCSC extended the study to

121. For the very small number of derivative claims (e.g., loss of consortium), we combined the award with the amounts awarded for the primary claim. We had 177 observations from auto accidents, 66 from medical and dental malpractice, and 19 from premises liability.

122. THOMAS H. COHEN, BUREAU OF JUSTICE STATISTICS, TORT BENCH AND JURY TRIALS IN STATE COURTS, 2005 (2009), *available at* http://www.bjs.gov/content/pub/pdf/tbjtsc05.pdf; LYNN LANGTON & THOMAS H. COHEN, BUREAU OF JUSTICE STATISTICS, CIVIL BENCH AND JURY TRIALS IN STATE COURTS, 2005 (2008), *available at* http://www.bjs.gov/content/pub/pdf/cbjtsc05.pdf; Thomas H. Cohen, *General Civil Jury Trial Litigation in State and Federal Courts: A Statistical Portrait*, 5 J. EMPIRICAL LEGAL STUD. 593 (2008).

123. LANGTON & COHEN, *supra* note 122, at 1, 15-17.

include a sample of nonurban counties.[124] Only the 2005 dataset includes information on both economic and noneconomic damages, and hence, we employ only that dataset in our analysis (henceforth "BJS dataset").

The third source is from the RAND Institute of Civil Justice jury studies project.[125] RAND collected data from local jury verdict reporters in a series of waves.[126] RAND archived the earlier sets of data covering the period 1960-1984 with the Inter-university Consortium for Political and Social Research.[127] Unfortunately, those data do not include separate information on economic and noneconomic damages. In a later collection, covering the period 1995-1999, RAND did ask its coders to capture separate information on economic and noneconomic damages when that information was available.[128] The data come from selected counties in six states: California (forty-six counties), Illinois (Cook County only), Texas

124. *See id.* at 1. For reports of the 1992, 1996, and 2001 studies, see THOMAS H. COHEN, BUREAU OF JUSTICE STATISTICS, MEDICAL MALPRACTICE TRIALS AND VERDICTS IN LARGE COUNTIES, 2001 (2004), *available at* http://www.bjs.gov/content/pub/pdf/mmtvlc01.pdf; THOMAS H. COHEN, BUREAU OF JUSTICE STATISTICS, TORT TRIALS AND VERDICTS IN LARGE COUNTIES, 2001 (2004), *available at* http://www.bjs.gov/content/pub/pdf/ttvlc01.pdf; MARIKA F. X. LITRAS ET AL., BUREAU OF JUSTICE STATISTICS, TORT TRIALS AND VERDICTS IN LARGE COUNTIES, 1996 (2000), *available at* http://www.bjs.gov/content/pub/pdf/ttvlc96.pdf; STEPHEN K. SMITH ET AL., BUREAU OF JUSTICE STATISTICS, TORT CASES IN LARGE COUNTIES (1995), *available at* http://www.bjs.gov/content/pub/pdf/TCILC.PDF.

125. *See* STEPHEN J. CARROLL, RAND CORP., JURY AWARDS AND PREJUDGMENT INTEREST IN TORT CASES (1983), *available at* http://www.rand.org/content/dam/rand/pubs/notes/2009/N1994.pdf; AUDREY CHIN & MARK A. PETERSON, RAND CORP., DEEP POCKETS, EMPTY POCKETS: WHO WINS IN COOK COUNTY JURY TRIALS (1985), *available at* http://www.rand.org/content/dam/rand/pubs/reports/2007/R3249.pdf; ERIK K. MOLLER, RAND CORP., EXPLAINING VARIATION IN PERSONAL INJURY JURY AWARDS (1997), *available at* http://www.rand.org/content/dam/rand/pubs/rgs_dissertations/2006/RGSD134.pdf; ERIK K. MOLLER, RAND CORP., TRENDS IN CIVIL JURY VERDICTS SINCE 1985 (1996) [hereinafter MOLLER, TRENDS], *available at* http://www.rand.org/content/dam/rand/pubs/monograph_reports/2007/MR694.pdf; MARK A. PETERSON, RAND CORP., CIVIL JURIES IN THE 1980S: TRENDS IN JURY TRIALS AND VERDICTS IN CALIFORNIA AND COOK COUNTY, ILLINOIS (1983), *available at* http://www.rand.org/content/dam/rand/pubs/reports/2007/R3466.pdf; PETERSON, *supra* note 13; MICHAEL G. SHANLEY & MARK A. PETERSON, RAND CORP., COMPARATIVE JUSTICE: CIVIL JURY VERDICTS IN SAN FRANCISCO AND COOK COUNTIES, 1959-1980 (1983), *available at* http://www.rand.org/content/dam/rand/pubs/report2006/R3006.pdf; Seth Seabury et al., *Forty Years of Civil Jury Verdicts*, 1 J. EMPIRICAL LEGAL STUD. 1 (2004).

126. *See e.g.*, SHANLEY & PETERSON, *supra* note 125, at viii.

127. *Jury Verdicts Database for Cook County, Illinois, and All Counties in California 1960-1984 (ICPSR 6232)*, INTER-UNIVERSITY CONSORTIUM FOR POLITICAL AND SOCIAL RESEARCH, http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/6232?q=6232 (last visited Feb. 19, 2014).

128. *See, e.g.*, MOLLER, TRENDS, *supra* note 125, at 64.

(Harris County only), Missouri (St. Louis City and County, Jefferson County, and St. Charles County), New York (fifty-three counties), and Washington (King County only).[129] RAND has not archived the later dataset, and that information has been largely unanalyzed.[130] However, RAND generously provided us access to this dataset. Included are 2301 personal injury cases from selected counties in six different states resulting in plaintiff's verdicts that include information on both economic and noneconomic damages.[131]

In addition to the three sources compiled directly from reports of jury verdicts, we have also identified three other sets of data derived from insurance company files dealing with tried cases that provide some information on noneconomic damages. Because each of these datasets has a major limitation, however, we view our analyses of these latter sources as supplemental and thus, only report the results in the Appendix, accompanied by our analyses.

B. Analytic Approach

We modeled the core analysis that follows after the recent analyses of the relationship between punitive and compensatory damages reported by Eisenberg and his colleagues.[132]

Specifically, consistent with Eisenberg, we looked at the relationship between economic and noneconomic damages graphically by fitting a simple linear regression line. In order to deal with

---

129. *See e.g.*, Seabury et al., *supra* note 125, at 5.

130. We identified one exception: a report that examined the impact of the cap on noneconomic damages in California medical malpractice cases. *See* NICHOLAS M. PACE ET AL., RAND CORP., CAPPING NON-ECONOMIC AWARDS IN MEDICAL MALPRACTICE TRIALS: CALIFORNIA JURY VERDICTS UNDER MICRA (2004), *available at* http://www.rand.org/content/dam/rand/pubs/monographs/2004/RAND_MG234.pdf.

131. To avoid investing excessive funds in coding auto accident cases, RAND took a 25% sample of those cases in most counties. To adjust for this sampling design, we included in our analysis weights provided with the RAND data in our analysis.

132. *See* Theodore Eisenberg & Michael Heise, *Judge-Jury Difference in Punitive Damages Awards: Who Listens to the Supreme Court?* 8 J. EMPIRICAL LEGAL STUD. 325 (2011); Theodore Eisenberg et al., *Juries, Judges, and Punitive Damages: Empirical Analyses Using the Civil Justice Survey of State Courts 1992, 1996, and 2001 Data*, 3 J. EMPIRICAL LEGAL STUD. 263 (2006), [hereinafter, Eisenberg et al., *Juries, Judges, and Punitive Damages*]; Theodore Eisenberg et al., *Variability in Punitive Damages: Empirically Assessing* Exxon Shipping Co. v. Baker, 166 J. INSTITUTIONAL & THEORETICAL ECON. 5 (2010) [hereinafter Eisenberg et al., *Variability in Punitive Damages*].

the extreme ranges involved and the relative infrequency of very large amounts, we transformed the amounts of damages to logarithms.[133] We also looked at the ratio of noneconomic to economic damages conditional on the amount of economic damages; many of our tables are modeled after Table 1, which appeared in one of Eisenberg's recent articles[134] and which uses data from BJS and NCSC studies for 1992, 1996, and 2001.[135]

III. RESULTS

A. Cook County Data

One feature of the Cook County data is that most reports provide detailed breakdowns of the damage awards, both for economic damages and noneconomic damages. Table 2 shows the breakdown; we have limited the information shown in Table 2 to the 200 cases where the breakdown was complete and the sum of the various categories of damages equaled the amount shown for the total verdict. The table shows both the breakdown for all of the cases in

133. We used the base 10 logarithm rather than the natural logarithm because it simplifies the scaling of the graphs that we present; neither the graphs nor the regressions would change appreciably if we were to use the natural logarithm.

134. *See* Eisenberg et al., *Variability in Punitive Damages*, *supra* note 132, at 18.

135. What we show as Table 1 was produced by Eisenberg and his colleagues in response to the Supreme Court's use of one of their earlier reports in its decision concerning punitive damages, *Exxon Shipping Co. v. Baker*, 554 U.S. 471 (2008). Eisenberg and his colleagues' earlier article reported the mean, median, and standard deviation of the punitive to compensatory damages ratio in jury trials as 2.90, 0.62, and 13.81, respectively. Eisenberg et al., *Juries, Judges, and Punitive Damages*, *supra* note 132, at 269. The Supreme Court found the standard deviation troublesome. *See* 554 U.S. at 499-500. In response to the Supreme Court's use of their analysis, Eisenberg and his colleagues published the article containing our Table 1 to show that the high standard deviation was largely an artifact of cases resulting in small compensatory awards. *See* Eisenberg et al., *Variability in Punitive Damages*, *supra* note 132, at 18. One minor difference between the original table and what we show is that we list the lowest category of compensatory awards as starting at $1 rather than $0. When asked if the labeling in the article was incorrect, Eisenberg responded, "You must be right. We probably excluded zero compensatory cases." E-mail from Theodore Eisenberg, Professor of Law, Cornell Univ. Law Sch., to Herbert Kritzer (Nov. 20, 2010) (on file with first author).

Table 1: Ratio of Punitive to Compensatory Damages as Reported by Eisenberg et al.

Compensatory Award Range	Median punitive-compensatory ratio	Mean punitive-compensatory ratio	Punitive-compensatory ratio standard deviation	Number of cases in award range
All	0.62	2.90	13.81	438
$1 to 999	24.69	101.47	175.44	11
$1k to 9.999	1.00	9.64	39.37	43
$10k to 99,999	0.56	1.68	3.58	162
$100k to 999,999	0.55	1.62	3.32	151
$1m to 9,999,999	0.42	1.46	3.71	57
$10m to <$100m	0.57	1.12	1.31	13
$100m or more	2.41	2.41	–	1

Source: Theodore Eisenberg et al., *Variability in Punitive Damages: An Empirical Assessment of the U.S. Supreme Court's Decision in* Exxon Shipping Co. v. Baker, 166 J. INSTITUTIONAL & THEORETICAL ECON. 5, 18 (2010).

the sample and for the three separate categories of auto accidents, medical and dental malpractice (henceforth "medical malpractice"), and premises liability cases.

The table shows six types of expenses that fall under economic damages, including dental expenses, education expenses, funeral expenses, medical expenses, lost income/time/wages, and miscellaneous. It also shows eight types of expenses that fall under noneconomic damages, including disability, disfigurement, emotional distress, loss of consortium, lost normal life, loss of society, pain and suffering, and miscellaneous. Overall, economic damages made up 43% of overall awards, and noneconomic damages constituted 57% of total awards. However, the proportion of economic and noneconomic damages differed across type of cases. For auto cases, the awards were split evenly between economic and noneconomic damages. In comparison, the ratios of economic to noneconomic damages were 1:3 for medical cases and 2:3 for premises liability cases.

Table 2: Descriptive Statistics of Economic and Noneconomic Damages (N=200)

	All Cases			Auto Accidents			Medical Malpractice			Premises Liability		
	#	% of cases	Mean %*	#	% of cases	Mean %*	#	% of cases	Mean %*	#	% of cases	Mean %*
Economic Damages												
Dental Expenses	1	1%	0%	0	0%	0%	1	2%	1%	0	0%	0%
Education Expenses	1	1%	0%	0	0%	0%	1	2%	0%	0	0%	0%
Funeral Expenses	7	4%	0%	0	0%	0%	7	13%	0%	0	0%	0%
Medical Expenses	173	87%	36%	124	96%	44%	39	72%	21%	14	82%	26%
Lost Income	64	32%	5%	43	33%	5%	12	22%	2%	9	53%	12%
Miscellaneous	9	5%	1%	5	4%	1%	3	6%	3%	1	6%	1%
All Economic Damages	183	92%	43%	124	96%	50%	44	81%	26%	15	88%	39%
Non-Economic Damages												
Disability	29	15%	4%	15	12%	4%	8	15%	3%	6	35%	7%
Disfigurement	39	20%	3%	13	10%	1%	23	43%	5%	3	18%	3%
Emotional Distress	7	4%	1%	2	2%	1%	5	9%	3%	0	0%	0%
Loss of Consortium	3	2%	1%	0	0%	0%	3	6%	2%	0	0%	0%
Lost Normal Life	95	48%	12%	59	46%	11%	27	50%	14%	9	53%	13%
Loss of Society	14	7%	5%	1	1%	1%	13	24%	15%	0	0%	0%
Pain & Suffering	167	84%	32%	110	85%	32%	42	78%	31%	15	88%	38%
Miscellaneous	6	3%	1%	3	2%	1%	3	6%	1%	0	0%	0%
All Non-Economic Damages	181	91%	57%	114	88%	50%	51	94%	74%	16	94%	61%
n		200			129			54			17	

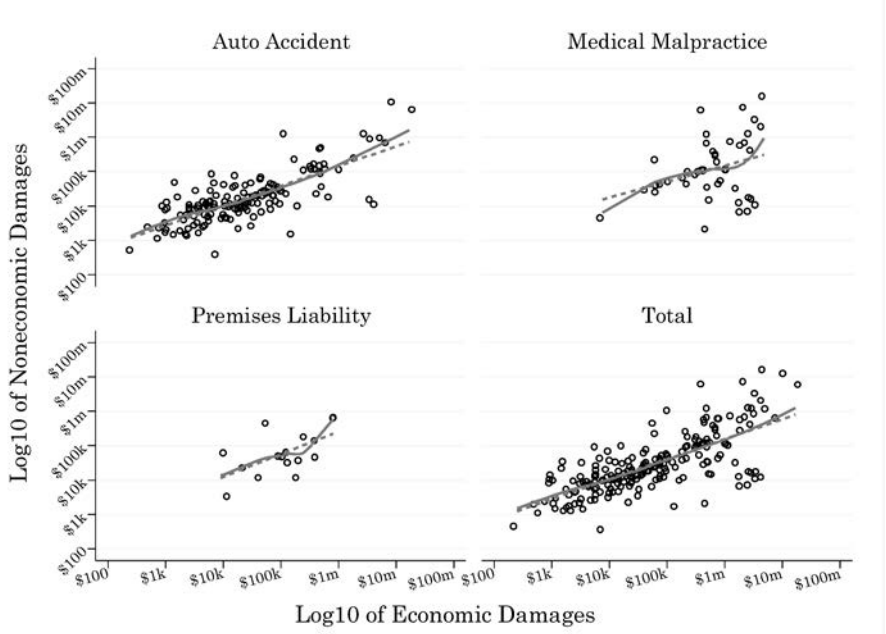
*Mean percentage of one particular type of damage amount out of total award.

As one would expect, medical expenses seem to dominate economic damages in that the majority of cases reported medical expenses. About 96% of auto cases (124 out of 129), 72% of medical malpractice cases (39 out of 54), and 82% of premises liability cases (14 out of 17) listed medical expenses. In terms of dollar values, medical expenses accounted for 44% of total damage awards for auto cases, 21% for medical malpractice cases, and 26% for premises liability cases. The second most frequent type of economic damages was lost income, both past and future: 33% of auto cases, 22% of medical malpractice cases, and 53% of premises liability cases reported lost income. In terms of dollar values, lost income tended to be a small part of the overall award, making up on average 5% of total damage awards for auto cases, 2% for medical malpractice cases, and 12% for premises liability cases. The remaining four types of economic damages were minimal for all cases.

Pain and suffering dominated noneconomic damages, and the majority of cases reported such damages. About 85% of auto cases (110 out of 129), 75% of medical malpractice cases (42 out of 54), and 88% of premises liability cases (15 out of 17) listed pain and suffering damages. In terms of dollar values, pain and suffering accounted for 32% of total damage awards for auto cases, 31% for medical malpractice cases, and 38% for premises liability cases. The other category of noneconomic damages that was fairly common was loss of normal life: 46% of auto cases, 50% of medical malpractice cases, and 53% of premises liability cases include awards for loss of normal life as noneconomic damages. In terms of dollar values, lost normal life accounted for 11% of total damage awards for auto cases, 14% for medical malpractice cases, and 13% for premises liability cases. In addition, a substantial number of cases listed disfigurement and disability, and the pattern was consistent across types of cases. Loss of society seems to only have mattered for medical malpractice. For example, 24% of those cases listed loss of society as noneconomic damages, and the award amount of loss of society made up 15% of total damage awards. In comparison, loss of society was minimal for both auto and premises liability cases.

Turning now to the relationship between economic and noneconomic damages in the Cook County dataset, we looked at all cases together and then split the cases into auto accidents, medical

Figure 1: Cook County, Illinois, 2005 & 2010



malpractice, and premises liability. Figure 1 shows the plots for the 206 cases for which we had information on both economic and noneconomic damages,[136] and both were nonzero; the figure shows the plot for all cases and for the three separate categories. Each plot shows two lines. The broken line is a least squares linear regression line. We fitted the solid line using Stata's locally weighted scatterplot smoothing procedure (LOWESS, also known as LOESS). Essentially, LOWESS fits a series of short lines using overlapping subsets of the data, which can illustrate nonlinearities without requiring the specification of a particular functional form. If the LOWESS and linear regression lines are very close, it is a good indicator that the relationship is linear. Figure 1 shows a strong linear relationship for all of the cases taken together and for auto

136. For 18 cases we were unable to distinguish between economic and noneconomic damages. For 21 cases economic damages appear to be zero, and for 17 cases noneconomic damages appear to be zero; those cases were omitted because the logarithm of zero is undefined.

Table 3: Regression Results for Cook County Data

	b	se{b}	Pr(b=0)	n	r^2
All cases	0.913	0.060	<.001	206	0.5312
Auto	1.008	0.072	<.001	145	0.5810
Medical malpractice	0.227	0.101	0.030	45	0.1051
Premises	0.558	0.195	0.013	16	0.3682

cases. The fits for the medical malpractice and premises liability cases appear to deviate from linearity, with the medical malpractice cases not following a clear pattern. This may reflect the relatively small number of cases, particularly the small number of premises liability cases (sixteen). Table 3 summarizes the regressions represented by the broken lines in Figure 1. Not surprisingly, the regression fit for medical malpractice was very weak; the fit for premises liability was better, but not as good as for the auto accident cases.

Because we have an indicator of the severity of the injury in the form of the NAIC codes for the Illinois data, we can assess whether using the additional information helps to predict the noneconomic damage award. We also have the gender of the plaintiff and, for most of the observations, the plaintiff's age. Preliminary analysis showed that there were no statistically significant differences between auto accident and premises liability cases, and hence we collapsed those two categories for purposes of the extended analysis.

Table 4 shows a set of four models that employ various combinations of variables. Model 1 in Table 4 includes the predictors including the logarithm of the economic damages, the injury severity measure, the interaction of economic damages and injury severity (that is, an indicator of whether the influence of one of these variables depends on the other), a dummy variable for medical malpractice cases, a dummy variable for gender, the plaintiff's age, and the square of the plaintiff's age.[137] The fit of the model is quite good; it accounts for 69% of the variation in the logarithm of noneconomic damages, a substantial increase over the 53% ex-

137. Including the square of the plaintiff's age allows the relationship between age and noneconomic damages to be nonlinear. In Table 4 the effect of the square of age has been multiplied by 1000 in order to show nonzero digits.

plained by economic damages alone.[138] All of the predictors were statistically significant except for age and gender.

The negative interaction term indicates that as economic damages increased, the impact of severity decreased (or alternatively, as severity increased, the impact of economic damages decreased). The coefficient for medical malpractice indicates that, with other factors held constant, noneconomic damage awards were higher in medical malpractice cases. However, as indicated in Model 2, which adds an interaction between medical malpractice and economic damages, noneconomic damages increased with economic damages less slowly in medical malpractice cases; in fact, combining the economic damages coefficient and the interaction with medical malpractice for Model 2, the effect of economic damages in medical malpractice cases was about half of what it was in auto and premises liability cases. In this model, the interaction between injury severity and economic damages is no longer statistically significant, and the two demographic variables remain nonsignificant.

Models 3 and 4 modify how severity is handled by treating death cases differently. In these models, a modified injury severity index codes death as zero with a separate dummy variable to indicate death; in addition, the model includes an interaction term between the death dummy variable and economic damages. With these changes, the modified injury severity index in Model 3 does not achieve statistical significance while the death indicator is strongly significant; neither of the interaction terms involving the injury and economic damages is statistically significant, nor are the demographic variables.

Model 4 drops gender and age, which had shown no evidence of having an influence on noneconomic damages; this adds a small number of additional cases to the analysis. This model explains 73% of the variation in noneconomic damages, and all predictors except for the interaction between economic damages and the modified injury severity index achieve statistical significance at the .05 (one-tailed) level or better.

---

138. These percentages are simply the r^2 or R^2 multiplied by 100; for the simple regression, the r^2 is from Table 3.

Table 4: Multiple Regression Results for Cook County Verdicts

Predictor variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**
log10(Economic Damages)	**1.001 (0.140)**	**0.933 (0.137)**	**0.753 (0.147)**	**0.790 (0.139)**
Severity (including death)	**0.611**	**0.366 (0.129)**		
Severity (excluding death)			0.238 (0.154)	**0.249 (0.147)**
Severity X log10(Economic Damages)	**-0.092 (0.024)**	-0.045 (0.027)		
Severity w/o Death X log10(Economic Damages)			-0.011 (0.031)	-0.013 (0.029)
Death (1=fatality, 0=no fatality)			**4.346 (1.227)**	**5.050 (1.204)**
Death X log10(Economic Damages)			**-0.634 (0.258)**	**-0.772 (0.254)**
Medical Malpractice (1=Medical Malpractice)	**0.335 (0.117)**	**2.778 (0.716)**	**2.644 (0.704)**	**2.474 (0.698)**
Medical Malpractice X log10(Economic Damages)		**-0.493 (0.142)**	**-0.461 (0.140)**	**-0.423 (0.138)**
Gender (1=male, 0=female)	0.014 (0.082)	-0.011 (0.080)	-0.003 (0.079)	
Age	-0.008 (0.008)	-0.014 (0.008)	-0.011 (0.009)	
Age^2 (*1000)	0.049 (.099)	0.108 (0.097)	0.091 (0.091)	
Constant	-0.240	0.299	0.879	0.413
R^2	0.6940	0.7123	0.7260	0.7318
n	197	197	197	205

Standard errors of coefficients shown in parentheses. Bold indicates coefficients that are statistically significant at the .05 (one-tailed) level or better.

Table 5 shows the ratio of noneconomic to economic damages broken down by level of economic damages and type of case. Unlike in Table 1, which showed a similar type of breakdown for the ratio of punitive damages to compensatory damages, we do not observe a consistently declining ratio as the amount of economic damages increased. As Table 5 shows, this was true for auto accident cases but not for medical malpractice cases and premises liability cases, both of which did show a declining ratio. Exactly why this was not true for auto cases is not clear, but we speculate that it has something to do with the auto accident cases that actually get to

trial in Cook County. Specifically, it may be that the larger auto cases that were tried involved particular issues with regard to noneconomic damages, while the smaller cases may have involved issues related to liability or preexisting conditions. As we will show in later sections of this Article, we saw somewhat similar patterns with regard to auto accidents in some of the other datasets we examined.

B. Bureau of Justice Statistics Data

For the BJS dataset, we again looked at all cases together and then split the cases into three categories: auto accidents, medical malpractice, and other personal injury. Figure 2 shows the plots for all cases and for the three separate categories. Figure 2 shows strong linear relationships for all of the cases taken together and for both auto and other personal injuries; however, the fit for the medical malpractice cases is less clear.

Table 6 summarizes the regression results for the broken lines shown in Figure 2.[139] Note the last column in the table, which displays the percentage of plaintiff's verdicts for which nonzero values were reported for both economic and noneconomic damages, and hence, are included in the analysis. Both auto accident cases and the other personal injury cases produced good fits with positive regression coefficients, indicating that noneconomic damages increased in a linear fashion as economic damages increased. The exception is the small subset of medical malpractice cases, which also demonstrated a low r^2 in the Cook County data discussed above. One difference is that these data include states that have imposed caps on noneconomic damages in medical malpractice cases,[140] and it may be that the weak relationship in such cases reflects in part the presence of caps in some states. Hence, the table also shows separate regressions for those cases in which a cap did and did not

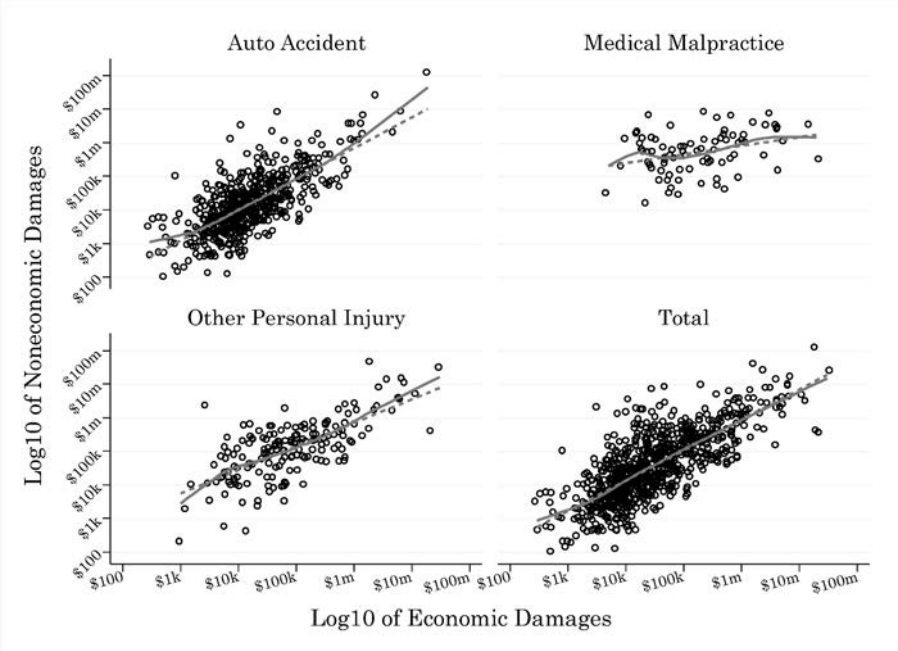
139. We note that Eisenberg and Heise's analyses show a strong relationship between compensatory and punitive damages. For the 2005 BJS dataset used here, they report an r^2 of .589 and a slope coefficient of .857, virtually identical to what we show for all cases in Table 2 above. *See* Eisenberg & Heise, *supra* note 132, at 335-36.

140. *See* AM. MED. ASS'N, CAPS ON DAMAGES (2011), *available at* http://www.ama-assn.org/resources/doc/arc/caps-on-damages-jan-2012.pdf (last visited Feb. 19, 2014) (relating information on damage caps in medical malpractice cases).

Table 5: Ratio of Noneconomic to Economic Compensatory Damages from Cook County Dataset

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
			All Cases			
$1 to 9,999	1.24	18.32	67.12	0.55	2.71	61
$10k to 99,999	1.97	17.10	55.28	0.67	4.42	97
$100k to 999,999	3.00	3.58	3.00	1.51	4.29	37
$1m or more	0.76	1.18	1.10	0.26	2.53	11
All	1.89	14.18	52.82	0.67	3.56	206
			Auto Accident Cases			
$1 to 9,999	1.20	3.76	12.12	0.51	2.47	56
$10k to 99,999	1.55	10.68	48.04	0.49	2.61	68
$100k to 999,999	3.51	4.19	3.27	2.02	4.63	17
$1m or more	1.65	1.55	1.32	0.43	2.66	4
All	1.52	6.99	33.81	0.56	2.90	145
			Medical Malpractice Cases			
$1 to 9,999	260.55	226.02	160.76	122.53	329.51	4
$10k to 99,999	5.54	46.78	80.74	2.22	40.91	19
$100k to 999,999	3.19	3.66	2.89	1.86	4.28	15
$1m or more	0.37	0.96	1.00	0.26	2.15	7
All	3.19	41.21	91.04	1.86	15.70	45
			Premises Liability Cases			
$1k to 9,999	3.29	3.29	.	3.29	3.29	1
$10k to 99,999	2.68	4.34	5.15	1.88	4.69	10
$100k to 999,999	1.23	1.30	0.83	1.19	1.51	5
All	1.94	3.33	4.26	1.21	3.48	16

Figure 2: Bureau of Justice Statistics, 2005 Data



apply; the number of cases is quite small, but it is clear that there is little difference between the two subsets of cases.[141]

Table 7 reports the statistics concerning the noneconomic to economic damage ratios for all of the cases and for the three subsets of cases broken down by the amount of economic damages. Here, we use the same categories used by Eisenberg and his coauthors in their analysis of the punitive to compensatory damage ratios in the BJS dataset.[142] The best summary figures to look at are the medians because a small number of extreme values can substantially inflate the means. Overall, there was a fairly consistent pattern in the median ratios of the noneconomic to economic damages: the medians declined as the amount of economic damages increased.

141. We found no evidence of a difference between the two subsets of cases when we included an interaction term in the model with all medical malpractice cases; the presence or absence of a cap had no impact on the relationship between economic and noneconomic damages.

142. Eisenberg et al., *Variability in Punitive Damages*, *supra* note 132, at 18.

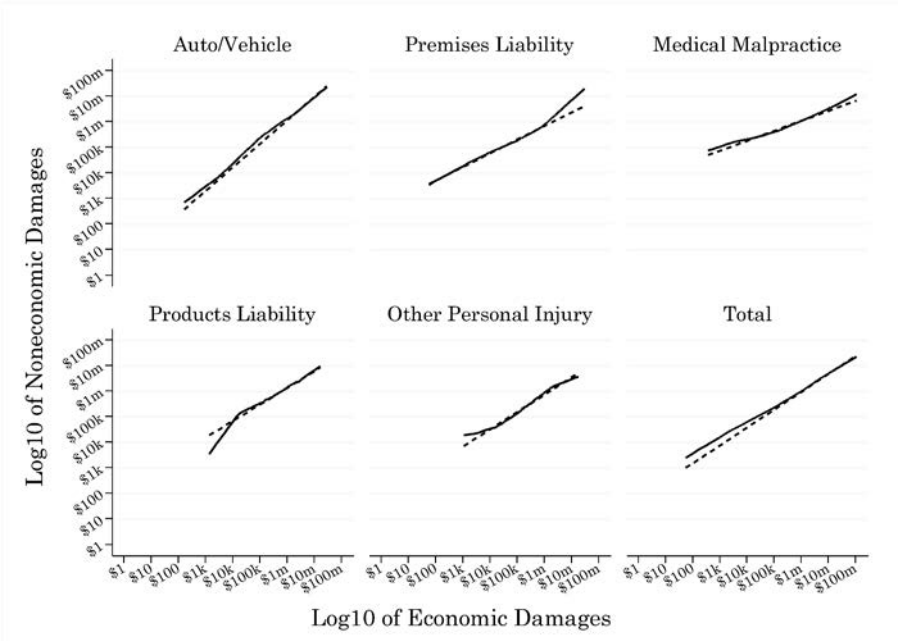
Table 6: Regression Results for BJS Data

	b	se{b}	Pr(b=0)	n	r^2	% of plaintiff's verdicts included
All cases	0.904	0.028	<.001	780	0.5666	36.3%
Auto accidents	0.918	0.038	<.001	532	0.5220	34.6%
Medical malpractice	0.258	0.083	0.003	81	0.1085	41.8%
with damage cap	0.153	0.135	0.266	30	0.2659	43.5%
without damage cap	0.333	0.110	0.004	51	0.1582	40.8%
Other Personal Injury	0.701	0.056	<.001	167	0.4854	40.0%

The one exception is the highest economic damage category for auto accident cases; however, it should be noted that there are only eight observations in this category.

Looking at the cases overall, the median was just over 1 (1.19), indicating that in the median case the amount of noneconomic damages was about 20% more than the economic damages. This is consistent with the overall regression shown in Table 6, which showed the overall regression coefficient as close to 1 (.904). One noteworthy difference between what Table 7 shows and what the ratio between punitive and compensatory damages in Table 1 shows is that the standard deviation in the noneconomic to economic damage ratio tended to stay high—up to $100,000 in compensatory damages—while the standard deviation in the punitive to compensatory ratio dropped when the compensatory damages reached $10,000. However, this result is likely generated by a very small number of cases. We say this because an alternate measure of variation, the Interquartile Range (IQR) which is the difference between the first and third quartiles (both of which are shown in Table 3), does drop sharply by the time economic damages reach $10,000 when we look at all cases together or at auto accident cases; the IQR does not drop until economic damages reach $100,000 for medical malpractice and other personal injury cases.

Figure 3: RAND Jury Study, All Cases 1995-1999



C. RAND Jury Verdict Study Data

The number of cases and the coding detail for the RAND data allowed us to split those data into five categories: auto (including common carrier), premises liability, medical malpractice, product liability,[143] and other personal injuries. Figure 3 shows the relationship between noneconomic and economic damages (both logged); in this figure we omit the points because they obscure the lines. As with the previous figures, the solid line is fit using the LOWESS procedure and the broken line is the simple regression line. A clear pattern of linear increase appears for all of the case subsets, although the LOWESS lines suggest some deviations for premises

143. In the BJS dataset, there was a specific code for asbestos-related cases, which we excluded from our analysis; we are not able to exclude asbestos cases from the RAND dataset, which means that some of the product liability cases may be asbestos-related cases.

Table 7: Ratio of Noneconomic Compensatory Damages from the Bureau of Justice Statistics (BJS) Datasets

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
			All Cases			
$1 to 999	3.62	13.15	30.11	1.13	10.34	15
$1k to 9,999	1.21	8.62	59.08	0.52	2.85	242
$10k to 99,999	1.21	6.69	23.94	0.44	3.35	343
$100k to 999,999	1.07	2.02	3.82	0.32	2.23	142
$1m or more	1.00	2.30	4.67	0.40	2.38	38
All	1.19	6.35	36.85	0.46	2.91	780
			Auto Accident Cases			
$1 to 999	3.62	13.15	30.11	1.13	10.34	15
$1k to 9,999	1.11	4.92	27.17	0.46	2.39	211
$10k to 99,999	0.92	2.99	11.66	0.38	1.90	240
$100k to 999,999	0.83	1.54	2.01	0.22	1.78	58
$1m or more	2.64	3.76	3.52	1.23	5.84	8
All	1.04	3.90	19.53	0.40	2.02	532
			Medical Malpractice Cases			
$1k to 9,999	17.47	17.47	14.50	7.21	27.73	2
$10k to 99,999	8.54	34.71	62.31	2.22	36.21	34
$100k to 999,999	2.05	4.00	7.16	0.79	4.13	32
$1m or more	0.62	0.87	0.86	0.26	1.04	13
All	2.75	16.72	43.21	0.95	8.52	81
			Other Personal Injury Cases			
$1k to 9,999	2.91	34.96	153.86	1.34	8.71	29
$10k to 99,999	2.55	5.72	8.92	0.70	6.81	69
$100k to 999,999	1.00	1.35	1.27	0.41	1.84	52
$1m or more	0.84	2.71	6.44	0.45	1.82	17
All	1.65	9.13	64.61	0.56	3.92	167

Table 8: Regression Results for RAND Data

	b	se{b}	Pr(b=0)	n	r^2	% of plaintiff's verdicts included
All cases	0.702	0.016	<.001	2170	0.4770	42.6%
Auto accidents	0.919	0.037	<.001	437	0.5842	29.8%
Premises liability	0.548	0.022	<.001	1016	0.3830	48.5%
Medical malpractice	0.391	0.026	<.001	455	0.3336	47.4%
California	0.285	0.045	<.001	155	0.2101	57.0%
Other states	0.434	0.031	<.001	300	0.4036	43.6%
Products liability	0.648	0.062	<.001	136	0.4467	49.6%
Other Personal Injury	0.676	0.060	<.001	126	0.0503	40.3%

liability cases and products liability cases. Table 8 shows the regression results for the various subsets. The strongest relationship, both in terms of the r^2 and the slope, is for auto accident cases, although it is also the type of case for which the proportion of cases with information on both economic and noneconomic damages was the lowest.

Interestingly, both the r^2 and the slope for auto cases in the RAND data are very similar to what we reported above for the Cook County and the BJS datasets. As with the prior two datasets, the r^2s and slopes drop off for the other types of cases. We also grouped the cases other than auto and medical malpractice, and reran the regression to provide a comparison to the "Other Personal Injury" category in the BJS data. The slope and r^2s were .570 and .4039, respectively, which are only slightly lower than the comparable figures from our analysis of the BJS data.

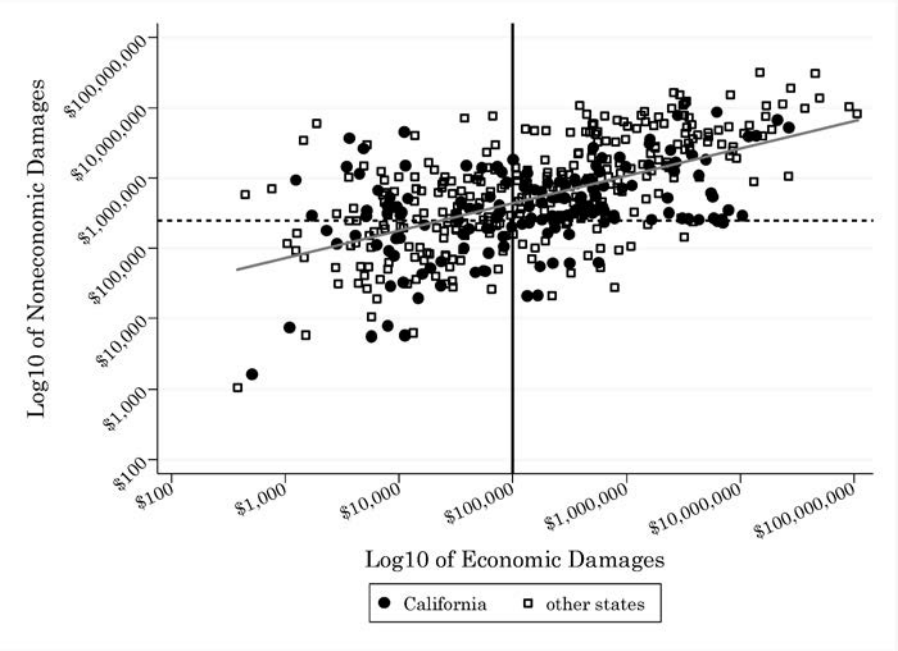
One question about the results for the medical malpractice cases is what difference California's limits on noneconomic damages in medical malpractice cases make.[144] Table 8 shows separate results for the California medical malpractice cases and medical malpractice from other states; clearly, the relationship between economic

144. *See* CAL. CIV. CODE § 3333.2 (Deering 1975), *available at* http://www.leginfo.ca.gov/.html/civ_table_of_contents.html (part of the Medical Injury Compensation Reform Act (MICRA)). See PACE ET AL., *supra* note 130, for an analysis of the California medical malpractice cases in the RAND data.

Table 9: Ratio of Noneconomic to Economic Compensatory Damages from RAND Dataset (*other than* Medical Malpractice Cases)

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
			All Cases			
$1 to 999	8.00	126.29	380.86	4.36	14.29	19
$1k to 9,999	3.53	52.95	237.98	0.86	24.06	304
$10k to 49,999	2.63	11.17	29.54	0.90	8.36	523
$50k to 99,999	2.67	6.47	10.96	0.94	7.00	217
$100k to 999,999	1.30	2.97	6.95	0.52	2.92	774
$1m or more	0.78	1.39	1.74	0.34	1.73	333
All	1.72	15.34	109.71	0.64	5.38	2,170
			Auto Accident Cases			
$1 to 999	8.00	7.19	4.80	5.29	8.33	6
$1k to 9,999	1.03	23.98	159.40	0.32	4.72	71
$10k to 49,999	1.34	6.02	17.77	0.52	3.85	95
$50k to 99,999	1.46	4.97	7.91	0.80	5.17	36
$100k to 999,999	1.50	3.90	10.23	0.57	3.27	147
$1m or more	1.00	2.00	2.60	0.43	2.63	82
All	1.34	9.17	77.28	0.50	3.85	437
			Premises Liability Cases			
$1 to 999	20.00	217.07	547.11	4.36	31.25	9
$1k to 9,999	11.55	43.29	130.42	2.29	42.07	148
$10k to 49,999	3.92	11.80	22.43	1.63	10.32	297
$50k to 99,999	2.78	5.64	9.72	1.15	6.25	111
$100k to 999,999	1.02	1.87	4.46	0.43	2.15	352
$1m or more	0.84	1.19	1.12	0.41	1.66	99
All	2.08	13.06	74.51	0.71	5.68	1,016
			Products Cases			
$1k to 9,999	19.00	15.51	14.86	1.50	21.14	5
$10k to 49,999	7.32	18.29	34.50	3.08	13.33	22
$50k to 99,999	6.95	8.99	7.97	3.44	14.37	12
$100k to 999,999	2.07	3.46	4.45	0.72	4.14	70
$1m or more	1.18	1.30	0.83	0.74	1.83	27
All	2.10	6.30	15.45	0.90	6.25	136
			Other Personal Injury Cases			
$1k to 9,999	5.93	43.52	127.30	1.56	17.14	15
$10k to 49,999	1.42	4.75	8.18	0.83	4.76	28
$50k to 99,999	1.37	6.39	9.82	0.47	9.35	16
$100k to 999,999	1.06	2.27	3.07	0.31	3.06	47
$1m or more	0.59	1.05	1.18	0.28	1.13	20
All	1.12	8.06	44.93	0.48	4.00	126

Figure 4: RAND Medical Malpractice Cases



and noneconomic damages in medical malpractice cases was weaker in California than in the other states in the study.[145]

Table 9 shows the noneconomic to economic damage ratios for all case types except for medical malpractice, which appear in Table 10. Table 9 shows that the median and mean ratios tended to decline sharply as the amount of economic damages increased; similarly, the amount of variation in the ratios, as measured either by the standard deviation or the interquartile range, tended to decrease. This was also true in medical malpractice cases, as Table 10 shows. Table 10 also provides further evidence on the impact of the cap on noneconomic damages in California.[146] California's ratios were

145. Fitting a regression model for medical malpractice cases that includes an interaction term shows that the difference is statistically significant (t=2.74, two-tailed p=.006).

146. In Table 6 we omit from the lower two panels the small number of cases in which economic damages were between $1 and $999 (one case for California and four cases for the other states); these cases are included in the statistics in the rows labeled "All."

Table 10: Ratio of Noneconomic to Economic Compensatory Damages from RAND Dataset (Medical Malpractice Cases)

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
			All Medical Malpractice Cases			
$1 to 999	509.91	547.34	631.39	3.12	1091.55	4
$1k to 9,999	41.77	187.86	509.50	11.86	90.53	65
$10k to 49,999	9.32	29.35	64.85	3.00	29.58	81
$50k to 99,999	4.61	11.41	18.05	2.73	15.11	42
$100k to 999,999	1.85	3.71	5.38	0.84	4.14	158
$1m or more	0.62	1.18	1.51	0.24	1.36	105
All	2.88	39.49	215.20	0.84	10.58	455
			California Medical Malpractice Cases			
$1k to 9,999	47.63	163.28	274.90	11.86	158.23	23
$10k to 49,999	8.59	36.08	92.12	2.80	29.80	24
$50k to 99,999	4.36	7.03	7.09	1.60	10.11	16
$100k to 999,999	1.25	1.93	2.51	0.75	2.24	61
$1m or more	0.23	0.52	0.72	0.07	0.62	30
All	1.85	31.43	123.56	0.64	8.18	155
			Medical Malpractice Cases from the Other States			
$1k to 9,999	41.72	201.32	603.44	10.00	90.53	42
$10k to 49,999	9.79	26.52	49.96	3.68	29.58	57
$50k to 99,999	4.65	14.11	22.01	3.17	18.31	26
$100k to 999,999	2.42	4.82	6.34	0.95	5.71	97
$1m or more	0.71	1.44	1.66	0.30	2.00	75
All	3.81	43.65	249.80	1.00	12.68	300

similar to those of other states in the RAND data until economic damages reach the $100,000 to $999,999 category, at which point they dropped sharply compared to the other states. Another way to see the drop-off in noneconomic damage payments in California is shown in Figure 4, which plots the logarithms of economic and noneconomic damages in California as filled circles and the other states as open squares. The fitted line shown is across all medical

malpractice cases. We added a vertical line to divide the figure between cases with less than $100,000 in economic damages and cases with economic damages of $100,000 or more. There is little or no difference in the scatter between California and the other states when the economic damages were less than $100,000. After $100,000, a small proportion of the California cases fall above the line, while for the other states there is a fairly even scatter above and below the line. The figure also has a horizontal line at the $250,000 cap on noneconomic damages; we presume that for these California cases, jury awards would have been reduced to no more than $250,000 by the judge.

SUMMARY AND CONCLUSION

We modeled most of our analyses above on Eisenberg's and his colleagues' work regarding the relationship between punitive and compensatory damages.[147] Using three primary data sources plus three supplemental sources discussed in the Appendix, we looked at how well noneconomic damages could be predicted by economic damages and at how the ratio of noneconomic damages to economic damages changed as the magnitude of the economic damages awarded by juries increased.[148] One important caveat regarding our analysis is that we have, with some exceptions, focused our analysis on cases in which the jury awarded explicit, nonzero amounts for both economic and noneconomic damages.

Using the Cook County data, our study is the first to provide detailed breakdowns of damage awards both for economic damages and noneconomic damages. Although medical expenses and lost income make up a large proportion of economic damages, pain and suffering is the most important type of noneconomic damages. However, readers should note that noneconomic damages also take the form of disability, disfigurement, emotional distress, loss of consortium, loss of normal life, and loss of society.

In our analysis, we found a mixture of consistent and inconsistent patterns across our various datasets. One fairly consistent

147. *See supra* note 133 and acompanying text.

148. Unlike Eisenberg and his colleagues, we have not attempted to compare jury-set noneconomic damages to those set by judges.

pattern was the tendency for the ratio of noneconomic to economic damages to decline as the amount of economic damages increased. Moreover, the variability of the ratio also tended to decline as the amount of economic damages increased. We found less consistency in our simple regression models where we predicted the logarithm of noneconomic damages from the logarithm of economic damages. In all of those models the slopes of the fitted line were positive, but the slopes and the measures of fit (r^2) varied from one dataset to another and among types of cases within those datasets with multiple case types. Also, when we had the same type of case across datasets, we found variation in the fit and slope. The latter was most striking for medical malpractice cases where we found a very weak relationship within the Bureau of Justice Statistics and National Center for State Courts 2005 verdict study, and that weak relationship held up even when we added controls for whether a state had a cap on noneconomic damages in medical malpractice cases.

With two of the datasets we were able to extend our regression models with regard to medical malpractice cases. Using the RAND jury study from 1995-1999, we were able to separate out California's medical malpractice cases, which were governed by the MICRA cap on noneconomic damages, from the cases coming from five other states included in the study. We found that MICRA dampened the relationship between economic and noneconomic damages. However, we have no way of knowing whether that result was due to differences in the cases lawyers brought to trial or differences in how lawyers chose to present cases. Research shows that caps can influence which cases lawyers choose to pursue,[149] and other research indicates that, in the face of caps, lawyers may seek to persuade the jury to award more damages in an uncapped category as a way of shifting damages from the capped category to types of damages that are not capped.[150]

---

149. *See generally* Stephen Daniels & Joanne Martin, *"It is No Longer Viable from a Practical and Business Standpoint": Damage Caps, "Hidden Victims," and the Declining Interest in Medical Malpractice Cases*, 17 INT'L J. LEGAL PROF. 59 (2010) (discussing impact of damage caps on plaintiffs' malpractice attorneys in Texas); Stephen Daniels & Joanne Martin, *The Texas Two-Step: Evidence on the Link Between Damage Caps and Access to the Civil Justice System*, 55 DEPAUL L. REV. 635 (2006) (same).

150. For a discussion of this issue vis-à-vis caps on punitive damages, see Tom Baker,

Using the data we coded from Cook County, Illinois jury verdicts, we were able to expand our regression models to include the NAIC severity index plus the gender and age of the plaintiff.[151] We found no evidence that the two demographic variables systematically influenced the amount of noneconomic damages, but the severity of injury did make a difference. Most importantly, we found that the severity of the injury conditioned the relationship between economic and noneconomic damages. For example, we found a much weaker relationship between economic and noneconomic damages in cases that resulted in death than we found in cases producing major permanent disability. This pattern makes sense because in some of the death cases the victim would have died during or immediately after the malpractice occurred, or the nature of the malpractice may have been such that there was no significant pain and suffering before death occurred. The senior author observed a mediation in a malpractice case in which the defendant had failed to diagnose a major heart condition and the victim died of a heart attack. The plaintiff had suffered significant economic damages, namely loss of financial support, but the only noneconomic damages would have been loss of consortium or loss of enjoyment of life.

Comparing our results to what Eisenberg and his colleagues have reported for the relationship between punitive and compensatory damages, it is clear that there tends to be considerably more variability in the relationship between noneconomic and economic damages than between punitive and compensatory damages. Some observers might argue that this shows that changes are called for to reduce that variability; some have suggested creating a schedule or guidelines for such damages,[152] as has been done in England and Wales.[153] Several years ago, the first author suffered a broken ankle while visiting London and sought compensation from the construction company that had left an excavation on a sidewalk inadequately safeguarded. The settlement for the injury covered his economic loss plus an amount for general damages that was right in

---

Transforming Punishment into Compensation: In the Shadow of Punitive Damages, 1998 WIS. L. REV. 211.

151. We provide a similar analysis, reported in the Appendix, using the Missouri medical malpractice insurance data.

152. *See* Bovbjerg et al., *supra* note 13, at 939 n.153, 940.

153. *See generally* JUDICIAL STUDIES BD., *supra* note 55.

line with the range of compensation recommended in the guidelines in effect at the time.

The first author's London experience also points to the potential problems of scheduling general damages. Although the broken ankle was a significant inconvenience with regard to a number of daily activities (bathing, driving, and generally getting around), and although he experienced pain in the minutes after the injury—before the ambulance arrived and medication was administered—he felt virtually no pain after the surgery (much to his surprise). He did experience some pain and discomfort during the rehabilitation process, particularly after long walks, but nothing more than he often experienced after straining his back. In contrast, other people often experience substantial pain after similar injuries. To the extent that the goal of general damages is to compensate for what is actually experienced, the amount the first author received should be at the lower end of compensation for pain and suffering for such an injury.

More generally, although the comparison of the variability in the relationship between noneconomic damages and economic damages to the variability in the relationship between punitive damages and compensatory damages is useful as a means of putting our results in perspective, the comparison cannot serve as evidence regarding the need to limit noneconomic damages. The argument regarding punitive damages relies heavily on the principle that punishment needs to be driven by standards, and that deterrence is driven by expectation.[154] In contrast, if the goal of compensatory damages, including compensatory damages for noneconomic loss, is compensation, the damages need to be geared to the actual loss. Although the degree of loss is usually related to the severity of an injury, there will be substantial variation depending on personal circumstances. Clearly, the magnitude of any loss of income depends both on the nature of the injury and the victim's level of income; no one has argued that compensation for lost income should be tied to a schedule that is in turn tied to the nature of the injury. Measuring noneconomic loss is more difficult than measuring lost income,

154. *See* Jacqueline Percezk, Note, *On Efficiency, Punishment, Deterrence, and Fairness: A Survey of Punitive Damages Law and a Proposed Jury Instruction*, 27 SUFFOLK U. L. REV. 825, 852-55 (1993).

although measuring some aspects of economic loss, such as loss of future earning capacity, is also more difficult than measuring past lost income. Arguably, a jury representing the community from which the injured party comes, which hopefully includes at least some people who are similarly situated to the injured party, is in a better position to assess the degree of noneconomic loss than a professional judge who may become inured to such loss after hearing many cases.

APPENDIX: INSURANCE CLAIM DATA

As mentioned above, in addition to the three primary datasets derived directly from verdict reports, we identified three sets of data dealing with closed insurance claims that include information on cases going to trial. In this Appendix, we report our analyses of those three datasets.

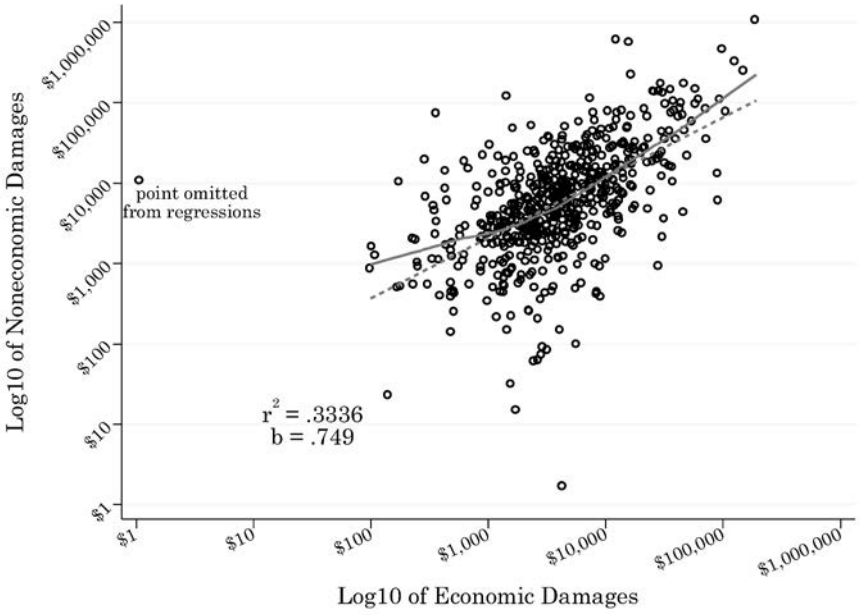
A. Insurance Research Council Closed Claim Data

The Insurance Research Council and its predecessor, the All-Industry Research Advisory Council, collected data from auto claim files closed in 1987, 1992, 1997, and 2002.[155] The closed claim studies looked only at claims for which a payment was made. The cases resulting in plaintiff's verdicts are less than 1% of the total paid claims in the datasets; the five studies include 994 claims that involved a court verdict, and 567 of these claims listed information on both economic and noneconomic damages paid by the insurance company. A small number of these verdicts may have been bench trials, but we have no way of separating bench and jury trials. The dataset includes information on the amounts that the insurance company paid rather than specifically the amount of the verdict awards, but given that most of the cases were relatively small, we are assuming that most verdicts were paid without appeals or reductions.[156] We have adjusted all amounts to 2002 dollars.

155. IRC's reports of its analyses of these studies can be found in ALL-INDUSTRY RESEARCH ADVISORY COUNCIL, COMPENSATION FOR AUTOMOBILE INJURIES IN THE UNITED STATES (1989); INSURANCE RESEARCH COUNCIL, AUTO INJURIES CLAIMING BEHAVIOR, AND ITS IMPACT ON INSURANCE CLAIMS (1994); INSURANCE RESEARCH COUNCIL, INJURIES IN AUTO ACCIDENTS: AN ANALYSIS OF AUTO INSURANCE CLAIMS (1999); INSURANCE RESEARCH COUNCIL, AUTO INJURY INSURANCE CLAIMS: COUNTRYWIDE PATTERNS IN TREATMENT, COST, AND COMPENSATION (2003). Unfortunately, we did not have access to the data from IRC's most recent study of claims closed in 2007. *See* INSURANCE RESEARCH COUNCIL, AUTO INJURY INSURANCE CLAIMS: COUNTRYWIDE PATTERNS IN TREATMENT, COST, AND COMPENSATION (2008) [hereinafter, IRC 2008].

156. We expect that insurers are unlikely to appeal most of these cases given the amounts involved and the costs of appeal. Insurers might threaten to appeal, but any compromise probably deals with the "costs" that the judge might award rather than the amounts of the verdict itself.

Figure 5: Insurance Research Council Auto Cases

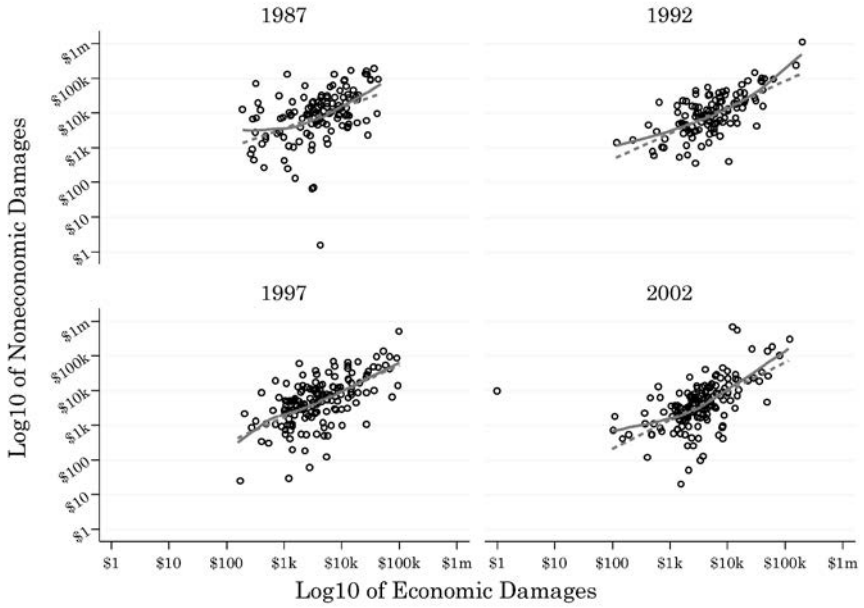


We treat the insurer's figure for economic loss as the economic component, and we treat the difference between the economic loss and the amount paid as the noneconomic component of the jury award.

Figure 5 shows the plot of noneconomic versus economic damages, both logged. As with the other sets of auto accident data, there is a clear relationship with an r^2 of .3336 and a slope of .749; given that the slope is less than 1, it appears that the noneconomic damages rise more slowly than do the economic damages. As with earlier figures, the broken line is a linear regression line and the solid line is a LOWESS line; here the LOWESS line suggests that there might be a slight curvilinear relationship.

Recall that for the analysis of the IRC data we have combined claims closed in 1987, 1992, 1997, and 2002. Figure 6 shows the plots separately for the four years, and Table 11 summarizes the regressions for each subset. Figure 6 shows essentially the same

Figure 6: Insurance Research Council Cases by Year



pattern as does Figure 5; for all but 1997 we see the curvilinear pattern indicated by the solid LOWESS line. Table 11 shows similar relationships except, perhaps, for 1987, where the relationship appears somewhat weaker. The lower r^2s compared to what we found for auto accident cases in the other three datasets indicate that the relationship in the IRC data is weaker in the other datasets. We do not have an explanation for that difference, although it may reflect that we are inferring the amount of noneconomic damages by relying on the insurer's figure for economic loss.

Table 11: Regression Results for IRC Data

	b	se{b}	Pr(b=0)	n	r^2	% of plaintiff's verdicts included
All cases	0.749	0.045	<.001	567	0.3336	57.0%
1987 cases	0.598	0.110	<.001	125	0.1924	74.8%
1992 cases	0.754	0.074	<.001	119	0.4694	56.1%
1997 cases	0.748	0.079	<.001	160	0.3624	48.0%
2002 cases	0.831	0.086	<.001	163	0.3698	57.8%

Table 12 shows the summary statistics for the noneconomic damages to economic damages ratios, both for all cases and for the individual years. For the individual years, we have omitted the top two categories because they were based on a very small number of cases; the cases in those categories are included in the "All" category for each of the years. The ratios show a clear pattern of decline as the amount of economic damages increases. One pattern that is evident in Table 12 is that both overall and within each economic damages category, the ratios have tended to decline over time. This may be an indication that juries have become less generous with regard to noneconomic damages.[157] An alternate explanation might be that plaintiffs' lawyers have chosen to de-emphasize noneconomic damages and focus more on maximizing the recovery for economic damages.

157. It is probably worth noting that if one looks at figures reported by the IRC for its closed claim studies, a clear pattern of decline in the ratio of average payment to average economic loss has emerged (excluding permanent total disability and fatality claimants). In 1977 the ratio was 2.29 compared to 1.49 in 2002 (and 1.19 in 2007). *See* IRC 2008, *supra* note 155, at 40 (reporting the figures from which these ratios were computed).

Table 12: Ratio of Noneconomic to Economic Compensatory Damages from IRC Dataset

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
			All Cases			
$1 to 999	3.48	165.93	1239.12	1.38	9.87	65
$1k to 4999	1.59	2.88	6.32	0.81	2.83	286
$5k to 9999	1.20	2.09	2.59	0.67	2.80	106
$10k to 49,999	1.15	2.61	6.42	0.55	2.50	105
$50k to 99,999	1.26	1.54	1.39	0.54	2.15	10
$100k to 999,999	2.18	2.73	2.11	1.23	4.23	4
All	1.52	21.06	416.65	0.76	3.16	576
			1987 Cases			
$1 to 999	3.83	22.33	51.23	2.39	21.69	24
$1k to 4999	1.94	4.97	12.87	0.89	4.58	54
$5k to 9999	1.76	3.47	4.20	1.00	4.64	25
$10k to 49,999	1.60	2.46	2.75	0.47	3.62	31
All	2.00	7.22	24.00	0.82	4.70	134
			1992 Cases			
$1 to 999	4.01	7.53	9.18	1.38	10.11	10
$1k to 4999	2.07	3.45	3.65	1.19	3.76	50
$5k to 9999	1.36	1.78	1.46	0.69	2.63	27
$10k to 49,999	1.29	1.68	1.20	0.84	2.50	29
All	1.72	2.97	3.93	0.98	3.31	119
			1997 Cases			
$1 to 999	3.23	6.17	7.80	1.02	8.93	14
$1k to 4999	1.52	2.63	3.92	0.79	2.90	88
$5k to 9999	1.05	1.61	2.10	0.38	1.41	23
$10k to 49,999	1.04	1.47	1.41	0.49	2.07	27
All	1.35	2.53	4.00	0.65	2.84	160
			2002 Cases			
$1 to 999	3.00	593.40	2423.78	1.19	8.30	17
$1k to 4999	1.26	1.63	1.57	0.59	2.17	94
$5k to 9999	1.08	1.61	1.49	0.52	2.31	31
$10k to 49,999	0.87	6.10	14.73	0.55	1.84	18
All	1.27	63.85	783.00	0.67	2.49	163

B. Texas Department of Insurance Data

The fifth dataset was derived from data compiled by the Texas Department of Insurance (TDI) for closed commercial insurance claims involving bodily injury. The TDI has data for claims involving payments of $10,000 or more for the years 1988-2009.[158] As of September 1, 2009, reporting rules changed by increasing the payment amount that triggered the reporting requirement to $25,000;[159] consequently, we limit our analysis of the TDI data to claims closed prior to September 1, 2009. Only cases in which the insurer paid at least $10,000 are included, which means that cases reversed on appeal or in which the verdict exceeded $10,000 but the payment was reduced under that figure by a remittitur or by a settlement agreement are not included in the dataset. We adjusted all amounts to 2010 dollars.

A total of 2745 claims involved verdicts. Information on both noneconomic and economic damages awarded was available for 2019 cases. Unlike the IRC data, the data reporting form used by TDI specifically asks that information on the jury verdict itself be provided. We dropped from the analysis 64 cases that were listed as involving bench trials.[160] On September 1, 2003, a cap on noneconomic damages in medical malpractice cases went into effect for cases filed on or after that date.[161] Only 24 claims covered by the cap were tried after that date, and because of the small number we omitted them from the analysis, leaving a total of 1939 claims with verdicts that involved jury trials and that reported nonzero amounts for both economic and noneconomic damages.

The TDI data are based on claims, not cases, and multiple claims can arise from a single incident involving multiple defen-

158. The level of detail required in the reporting varied with only basic information for claims under $25,000. All of these datasets are publicly available on the TDI's website. *See Property and Causualty Reports*, TEX. DEP'T OF INS., http://www.tdi.texas.gov/reports/report4.html (last visited Jan. 28, 2013).

159. Detailed information is now required only for claims involving payments of at least $75,000. *See* H.B. 2877, 2009 Leg., 81st Sess. (Tex. 2009).

160. For many claims, there was no indication of whether the case was tried to a jury or to the court; we have included those cases on the assumption that a very small percentage would have been bench trials.

161. *See* TEX. CIV. PRAC. & REM. CODE ANN. § 74.301 (West 2012).

dants. Some defendants may settle or be dropped from the suit before trial. We identified multiple claims tried in a single lawsuit by matching year of the report, county, date suit was filed, and date suit was tried. After dropping claims as described above and collapsing claims that appear to have been consolidated for trial,[162] we were left with 1830 cases that have nonzero amounts for both economic and noneconomic damages.

Finally, the form used by TDI does not ask for information about the type of case, but does ask about the type of insurance involved. Two categories are medical professional insurance and commercial auto insurance. The other categories include monoline general liability, Texas commercial multiperil, and other professional liability, all of which we collapsed into a single "other" category; it is possible, however, that the first two of these include some auto cases. This categorization allowed us to do analyses separately for auto, medical, and other.

Figure 7 shows the plots for the three categories of cases in the TDI dataset plus all cases combined; Table 13 summarizes the results of the regression analysis. The LOWESS lines show some evidence of nonlinearity for auto accident cases and other personal injury. This nonlinearity appears to reflect that at the lower level of economic damages, the noneconomic damages lie above the (broken) linear regression line. The results in Table 13 show that there are clear relationships for all three subsets of cases, with little variation in the r^2s; however, the slope for the medical malpractice cases appears to be less than for the other two categories.[163]

162. It is possible that, if a case included multiple claims and one or more of those claims resulted in a payment of less than $25,000, we have only partial information on the actual verdict amount.

163. To test whether these differences are statistically significant, we added interaction terms to the simple regression model. The joint test of the two interaction terms is statistically significant (F=5.86, df=2.1824, p=.003). The individual test of the interaction term representing the difference in the slope between medical malpractice cases and the "other" category of cases was significant using a one-tailed test (t=1.84, p=.033); the individual test involving the term for auto accident cases was strongly significant (t=3.40, p=.001).

Figure 7: TDI Cases 1988-2009

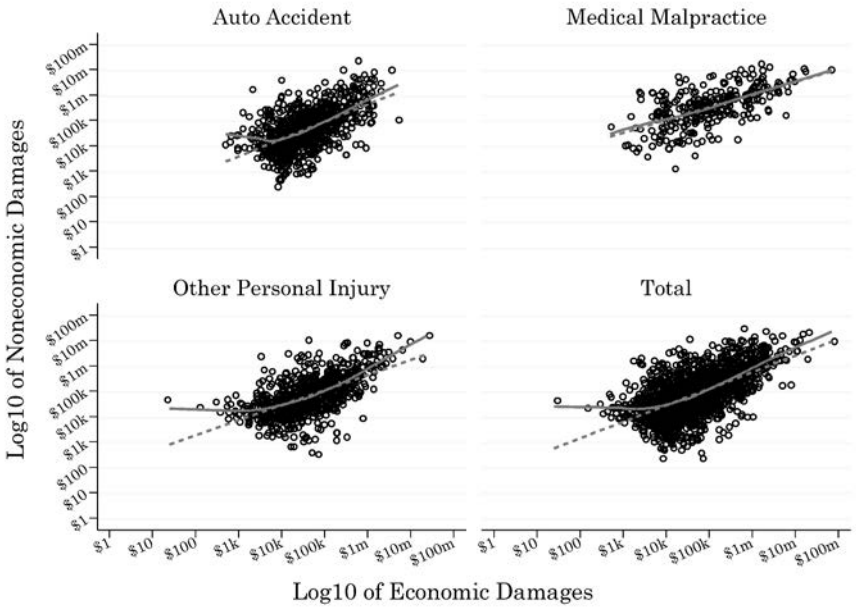


Table 14 shows the summary statistics for the noneconomic damages to economic damages ratio for the TDI data, both overall and separately by case type. As with the IRC data, one sees a clear pattern of decline as economic damages increase. One noteworthy variation in this pattern is that the speed of the decline is less for medical malpractice cases than for the other two groups of cases.

Recall the pattern of decline over time that was evident in the IRC data. Given that the TDI data we are using span twenty-two years, those data provide the opportunity to examine whether that temporal pattern was unique to auto cases or more general.[164] Table 15 shows the median ratio of noneconomic to economic damages for five periods (1988-1992, 1993-1996, 1997-2000, 2001-2005, 2006-2009); the periods are represented in the columns of the table. Because of the very small number of cases in the lowest category of

164. Actually, some trials in the dataset took place as early as 1982 because the annual collections of data are based on the date the claim was closed. For purposes of Table 14, we have dropped trials that occurred prior to 1988 (a total of 63 cases).

Table 13: Regression Results for TDI Data

	b	se{b}	Pr(b=0)	n	r^2	% of plaintiff's verdicts included
All cases	0.653	0.020	<.001	1,830	0.3643	74.3%
Auto	0.682	0.035	<.001	796	0.3296	75.0%
Medical malpractice	0.502	0.040	<.001	273	0.3678	69.8%
Other	0.596	0.029	<.001	761	0.3560	75.2%

economic damages (under $1000), that category is omitted from Table 15. It is difficult to discern a temporal pattern in Table 15.

C. Missouri Insurance Department Medical Malpractice Data

The final data source exclusively involved medical malpractice claims. We obtained these data from the Missouri Department of Insurance. In Missouri, medical malpractice insurers, including self-insured entities, are required to report all claims to the Department of Insurance. The period covered by the data we obtained is from 1990 through the beginning of 2012; the data include a total of 42,022 claims involving 24,072 incidents. From these claims, we extracted 402 claims that resulted in plaintiff's verdicts, 281 of which included figures for both economic and noneconomic damages that were paid by the insurers. As with the IRC data, the Missouri medical malpractice data report payments, not actual verdicts, and we are again making the assumption that the payments generally are the same as the verdict awards. With medical malpractice cases, however, there is a greater chance that a remittitur or a post-verdict settlement reduced the damages that the insurer actually paid from the amount of the verdict. Consequently, the results from these data must be viewed with caution. For purposes of analysis we collapsed multiple tried claims from the same incident, leaving 236 cases.[165] All amounts were adjusted to 2010 dollars.

165. Unlike the Texas insurance data, the Missouri data included a specific indicator that linked multiple claims from the same incident. We have assumed that all claims from an incident that went to trial were tried together.

Table 14: Ratio of Noneconomic to Economic Compensatory Damages from TDI Dataset

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
			All Cases			
$1 to 999	34.83	158.42	419.10	22.99	110.55	16
$1k to 9,999	4.31	23.27	82.72	1.50	11.89	326
$10k to 49,999	1.79	7.33	26.08	0.67	4.07	644
$50k to 99,999	1.40	3.09	5.36	0.50	3.27	271
$100k to 999,999	1.00	2.53	5.11	0.42	2.57	476
$1m or more	0.71	1.63	2.18	0.40	2.00	97
All	1.58	9.31	56.20	0.60	4.30	1,830
			Auto Accident Cases			
$1 to 999	25.61	24.42	10.23	20.36	30.00	5
$1k to 9,999	2.95	15.19	69.62	1.00	8.00	152
$10k to 49,999	1.34	4.56	18.86	0.47	3.13	321
$50k to 99,999	1.05	2.29	4.05	0.45	2.23	117
$100k to 999,999	0.89	2.38	5.22	0.33	2.27	179
$1m or more	0.96	1.86	2.13	0.26	3.50	22
All	1.30	5.82	33.13	0.49	3.63	796
			Medical Malpractice Cases			
$1 to 999	150.00	150.00	.	150.00	150.00	1
$1k to 9,999	23.13	80.11	141.79	6.14	81.51	39
$10k to 49,999	5.68	22.02	48.86	2.00	16.96	62
$50k to 99,999	4.60	7.24	7.76	2.13	8.61	39
$100k to 999,999	2.05	4.60	7.77	0.88	4.35	88
$1m or more	0.67	1.68	2.63	0.33	1.85	44
All	3.67	19.78	64.09	0.98	10.00	273
			Other Personal Injury Cases			
$1 to 999	44.88	226.25	526.87	28.99	137.49	10
$1k to 9,999	4.32	15.94	66.06	1.99	10.80	135
$10k to 49,999	2.00	7.24	24.96	0.78	3.97	261
$50k to 99,999	1.19	2.49	4.92	0.46	2.51	115
$100k to 999,999	0.87	1.79	2.95	0.41	2.00	209
$1m or more	0.78	1.39	1.43	0.56	2.00	31
All	1.56	9.21	70.21	0.66	3.75	761

Table 15: Median Ratio of Noneconomic to Economic Compensatory Damages from TDI Dataset by Period

Category of Economic Damages	1988-1992	1992-1996	1997-2000	2001-2005	2006-2009
			All Cases		
$1k to 9,999	3.69	3.08	5.54	7.22	0.88
$10k to 49,999	1.95	1.40	1.81	1.79	0.98
$50k to 99,999	1.22	1.33	1.00	2.00	1.66
$100k to 999,999	0.78	0.79	1.26	1.06	1.03
$1m or more	0.66	1.54	1.00	0.70	0.65
All	1.58	1.40	1.91	1.67	1.07
			Auto Accident Cases		
$1k to 9,999	3.34	3.00	4.94	3.61	0.56
$10k to 49,999	1.72	1.12	1.31	1.46	0.98
$50k to 99,999	0.57	1.20	0.78	1.33	1.64
$100k to 999,999	0.94	0.55	1.23	0.91	0.63
$1m or more	0.26	1.85	1.00	3.50	0.94
All	1.41	1.16	1.40	1.50	0.76
			Medical Malpractice Cases		
$1k to 9,999	13.82	5.35	53.07	26.67	43.59
$10k to 49,999	4.45	7.67	11.73	39.70	0.61
$50k to 99,999	4.60	18.00	4.33	4.39	26.83
$100k to 999,999	0.96	4.73	2.32	1.24	6.96
$1m or more	0.47	2.40	0.96	0.65	
All	4.00	4.83	3.12	3.10	9.31
			Other Personal Injury Cases		
$1k to 9,999	3.28	2.57	5.52	7.08	17.88
$10k to 49,999	1.92	2.03	2.05	1.71	1.32
$50k to 99,999	1.22	1.27	0.67	1.16	1.78
$100k to 999,999	0.70	0.81	0.88	1.45	1.38
$1m or more	1.06	1.24	1.36	0.74	0.65
All	1.50	1.50	2.00	1.45	1.43

Figure 8: Missouri Medical Malpractice Cases

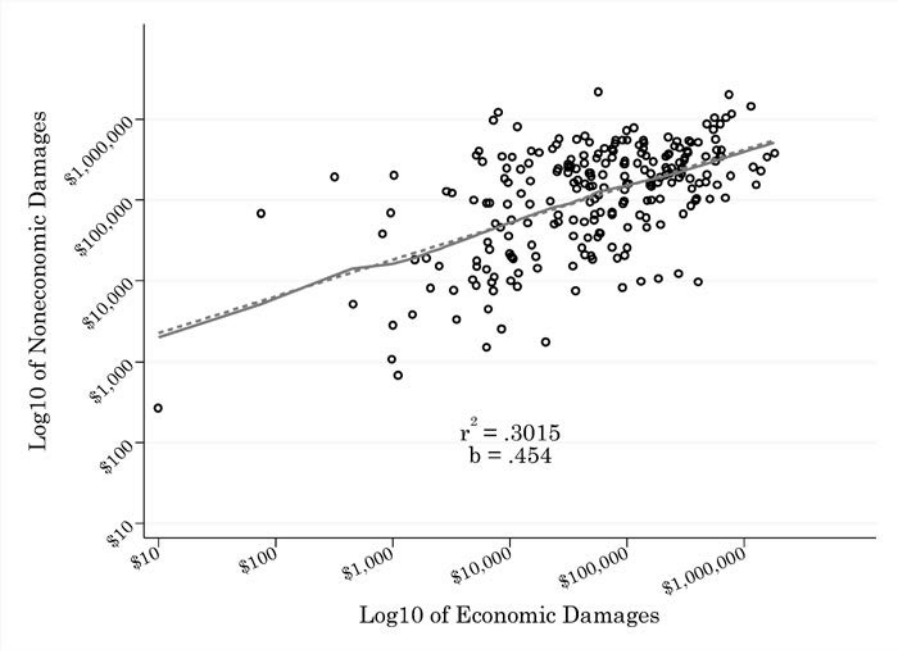


Figure 8 shows the relationship between noneconomic and economic damages for this dataset. The fit, which is shown both on the figure and as Model 1 in Table 16, is comparable to what we found for medical malpractice cases in other datasets. The Missouri data that we obtained from the Missouri Department of Insurance include the NAIC injury scale. Adding severity to the regression model improves that fit slightly (see Model 2 shown in Table 16), and a further improvement can be achieved by taking death out of the severity index and treating it as a dummy variable (as we did with the Cook County data); that is, using an equation that has a logarithm of economic damages, injury severity from one to eight (with death claims set as zero on the severity scale), and a dummy variable coded one for death and zero for nondeath claims. This equation produces an R^2 of .3324 (Model 3 in Table 16).

Table 16: Regression Models for Missouri Malpractice Data

Predictor variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
log10(Economic Damages)	**.454**	**.407**	**.384**	**.769**	**.741**	**.754**
	(.045)	**(.047)**	**(.049)**	**(113)**	**(.135)**	**(.140)**
Severity (including death)		**.051**		**.366**		
		(.018)		**(.091)**		
Severity (excluding death)			**.089**		**.392**	**.384**
			(.028)		**(.132)**	**(.134)**
Severity (including death) X log10(Economic Damages				**-.068**		
				(.019)		
Severity (excluding death) X log10(Economic Damages					**-.067**	**-.067**
					(.027)	**(.028)**
Death (1=fatality, 0=no fatality)			**.551**		**3.264**	**3.207**
			(.167)		**(.823)**	**(.843)**
Death X log10(Economic Damages)					**-.591**	**-.588**
					(.176)	**(.180)**
Gender (1=male, 0=female)						.032
						(.077)
Age						-.005
						(.005)
Age^2 (*1000)						.055
						(.068)
constant	2.900	2.836	2.777	1.204	1.192	2.875
R^2	0.3015	0.3298	0.3324	0.3581	0.3638	0.3530
n	235	235	235	235	235	225

Standard errors of coefficients shown in parentheses. Bold indicates coefficients that are statistically significant at the .01 level or better.

Models 1 to 3 in Table 16 all assume the relationships between the predictors and the logarithm of noneconomic damages are additive. Models 4 and 5 add interaction terms that allow the effect of economic damages to vary depending on the severity of the injury. Model 4 uses the severity scale that includes both death and an interaction term between severity and the logarithm of economic damages; Model 5 includes the modified severity scale that does not include death, the indicator variable for death, interaction terms between these two variables, and the logarithm of economic damages. As shown in Table 16, all of the predictors in both of these models are statistically significant, with the latter model explaining 36% of the variation in noneconomic damages. All of the interaction terms are negative, indicating that the relationship between economic damages and noneconomic damages is dampened as injury severity increases.

Table 17: Ratio of Noneconomic to Economic Damages for Missouri Medical Malpractice Cases

Category of Economic Damages	Median	Mean	Standard Deviation	First Quartile	Third Quartile	n
$1 to 999	44.33	336.62	445.52	29.00	599.64	5
$1k to 9,999	4.50	27.03	48.55	1.89	35.17	39
$10k to 49,999	4.76	8.65	11.53	2.00	9.42	61
$50k to 99,999	2.04	3.74	6.00	1.00	5.55	36
$100k to 999,999	1.00	1.28	1.32	0.50	1.53	89
$1m or more	0.20	0.36	0.44	0.16	0.22	6
All	1.78	14.90	78.30	0.73	5.70	236

The final model shown in Table 16, Model 6, adds gender and age to Model 5. As with the Cook County data, neither gender nor age of the claimant is a statistically significant predictor of noneconomic damages. We added gender and age to other models, and in no case was either variable statistically significant. This was true regardless of whether age was modeled as having a linear or a nonlinear effect.

Table 17 reports the ratio of noneconomic to economic damages for the Missouri cases. There is a marked pattern of decline in the median ratio as the economic damages increase. Similarly, there is a decline in both the mean and standard deviation. The pattern here is consistent with what we have found with the other datasets.