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Saving Lives Through Punitive Damages

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ARTICLES

SAVING LIVES THROUGH PUNITIVE DAMAGES

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W. KIP VISCUSI†

ABSTRACT

This Article proposes that the value of statistical life (“VSL”) be used to set the total damages amount needed for deterrence when punitive damages are warranted in wrongful death cases. The appropriate level of total damages should be achieved by adjusting the value of punitive damages. Compensatory damages should not be distorted to establish the total damages level needed for efficient deterrence. Attempts to introduce hedonic damages as a compensatory damages component, and proposals to use the VSL on a routine basis when setting compensatory damages awards, are misguided and will undermine the insurance and compensation functions of compensatory damages. The U.S. Supreme Court’s focus on punitive damages ratios is misplaced, as it is the total damages amount, not the ratio, that is instrumental. The criteria for evaluating punitive damages in bodily injury cases should be different from the criteria used in property damage cases. The composition of compensatory damages is especially important in bodily injury cases. Empirical analysis of current state court awards in bodily injury cases

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shows the desired positive relationship between punitive damages awards and the nonpecuniary loss.

I. INTRODUCTION

Punitive damages can save lives in an efficient manner.¹ But at present, punitive damages are not structured to serve a deterrence function. In this Article, we propose a methodology for setting punitive damages in bodily injury cases that will enable punitive damages to fulfill their proper deterrence role. The primary focus is on wrongful death cases, but the approach generalizes to other personal injury contexts. The damages structure we propose to promote efficient levels of safety uses the value of statistical life (“VSL”) to establish the punitive damages award. At the same time, our proposed use of the VSL does not distort the current role of compensatory damages. Using our punitive damages framework as a point of reference, this Article also provides an empirical analysis of punitive damages awarded in state courts.

The VSL measures the tradeoff between fatality risk and money for small changes in risk.² It is standard practice for government agencies to use a VSL when assessing the benefits associated with the expected lives that will be saved by government regulations.³ Our proposal establishes

1. Punitive damages are designed to punish and serve as a deterrent. A typical example of punitive damages instructions indicating the punishment and deterrence functions of punitive damages is that of New Mexico: “Punitive damages are awarded for the limited purposes of punishment and to deter others from the commission of like offenses.” N.M. Uniform Jury Instructions for Civil Cases § 13-1827 (West 2009). In this Article, we focus on the deterrence role. In *Exxon Shipping Co. v. Baker*, the U.S. Supreme Court cited the following cases as examples of the consensus that deterrence is the rationale underlying punitive damages: *Moskovitz v. Mount Sinai Medical Center*, 635 N.E.2d 331, 343 (Ohio 1994) (“The purpose of punitive damages is not to compensate a plaintiff, but to punish and deter certain conduct.”); *Hamilton Development Co. v. Broad Rock Club, Inc.*, 445 S.E.2d 140, 143 (Va. 1994) (same); *Loitz v. Remington Arms Co.*, 563 N.E.2d 397, 401 (Ill. 1990) (same); *Green Oil Co. v. Hornsby*, 539 So. 2d 218, 222 (Ala. 1989) (same); and *Masaki v. General Motors Corp.*, 780 P.2d 566, 570 (Haw. 1989) (same). *Exxon Shipping Co. v. Baker*, 128 S. Ct. 2605, 2621 n.9 (2008). The Court also cited *Cooper Industries, Inc. v. Leatherman Tool Group, Inc.*, 532 U.S. 424, 432 (2001) (stating that punitive damages are “intended to punish the defendant and to deter future wrongdoing”); *State Farm Mutual Automobile Insurance Co. v. Campbell*, 538 U.S. 408, 416 (2003) (“[P]unitive damages . . . are aimed at deterrence and retribution.”); and RESTATEMENT (SECOND) OF TORTS § 908 cmt. a (1979). *Id.*

2. W. Kip Viscusi, *The Devaluation of Life*, 3 REG. & GOVERNANCE 103, 105 (2009).

3. *Id.* at 103, 107. See, e.g., OFFICE OF INFO. & REGULATORY AFFAIRS, U.S. OFFICE OF MGMT. & BUDGET, INFORMING REGULATORY DECISIONS: 2003 REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES app. A, at 94 (2003) (noting agencies’ use of the VSL in calculating costs and benefits of regulations); Memorandum from Tyler D. Duvall, Assistant Sec’y for Transp. Policy, & D. J. Gribbin, Gen. Counsel, to Secretarial Officers, Modal Administrators, U.S. Dep’t of Transp., Treatment of the

proper incentives for deterrence in wrongful death cases by linking punitive damages awards to the VSL rather than to the typically lower value of compensatory damages.

This Article proposes the following punitive damages formula for wrongful death cases: the total value of punitive damages plus compensatory damages should equal the VSL. To achieve this equality, there should be no change in current practices regarding the value of compensatory damages. Rather, the entire adjustment should be made to punitive damages, which should be set to equal the VSL minus the value of compensatory damages. The Article elaborates on this proposal, indicating how it can be modified to account for unusually large economic losses and a low probability of detection.

Advocating the use of the VSL concept in tort damages contexts is not new, but to date the focus has been on using it to set compensatory damages rather than punitive damages. There have been many attempts to use the VSL in the courtroom as what has been termed a “hedonic value of life,” but most jurisdictions have rejected this concept.⁴ Nevertheless, some prominent legal scholars have advocated using the VSL as a component of compensatory damages. As discussed below, Eric Posner and Cass Sunstein advocate including the VSL as a component of compensatory damages in addition to currently recognized compensatory damages categories.⁵ Similarly, A. Mitchell Polinsky and Steven Shavell seek to use the same punitive damages formula for property damage and bodily injury cases, which leads them to propose that compensatory damages should equal the VSL for wrongful death cases, irrespective of whether punitive damages are warranted.⁶ This Article will show that use of the VSL to establish the level of compensatory damages is misguided because it undermines the current function of compensatory damages.

Economic Value of Statistical Life in Departmental Analyses, *available at* <http://ostpxweb.dot.gov/policy/reports/080205.htm> [hereinafter Duvall & Gribbin Memo] (suggesting how to improve the use of the VSL); National Center for Environmental Economics, Frequently Asked Questions on Mortality Risk Valuation, <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Mortality%20risk%20valuation.html> (select “Why Does EPA Use a Value of Statistical Life?”) (last visited Nov. 3, 2009).

4. Thomas R. Ireland, *Recent Legal Decisions Regarding Hedonic Damages: An Update*, 13 J. FORENSIC ECON. 189, 190–92 (2000).

5. Eric A. Posner & Cass R. Sunstein, *Dollars and Death*, 72 U. CHI. L. REV. 537, 587–90 (2005).

6. A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 HARV. L. REV. 869, 889–90, 941–42 (1998). Under Polinsky and Shavell’s proposal, if the probability of detection is 1.0, then in a wrongful death case there is no rationale for punitive damages from a deterrence standpoint because their proposal always sets compensatory damages to equal the VSL. *Id.* at 891.

The proper setting of deterrence damages in bodily injury cases requires an approach that is quite different from that used in property damage cases. Compensatory damages in property damage cases can make the victim “whole” by reimbursing for the monetary value of the loss, but this is not so for bodily injury cases. Compensatory damages for wrongful death or other bodily injury cases cannot ensure that injurers have paid fully for the harm they have caused. Potential victims would not become indifferent to the prospect of living or dying merely because they anticipate compensation for wrongful death,⁷ and this point generalizes to severe bodily injury outcomes as well.⁸

Correctly incorporating the VSL in setting punitive damages awards in cases involving bodily injury will often raise punitive damages awards above current levels. Such an increase may create conflicts with the U.S. Supreme Court’s recently established guidelines regarding the proper ratio of punitive damages to total compensatory damages, hereinafter referred to as the “punitive damages ratio.” The Court advocated a single-digit ratio as a reasonable upper limit in *State Farm Mutual Automobile Insurance Co. v. Campbell*⁹ and more recently reduced the desired ratio to 1:1 for maritime cases in *Exxon Shipping Co. v. Baker*.¹⁰

Application of any such ratio as indicated by the Supreme Court has three principal shortcomings. First, from the standpoint of deterrence, it is the total damages amount, not the punitive damages ratio, that is most consequential. Thus, the ratio concept is not well suited to assessing the adequacy of punitive damages. Second, it is not appropriate to analyze property damage cases and bodily injury cases using the same cookie-cutter ratio approach. The damages relationships appropriate to fulfilling the deterrence objective of punitive damages are quite different in these two contexts. Third, such ratio calculations ignore the components of compensatory damages. Compensatory damages are the sum of economic

7. There may, of course, be some bequest motive, but these values have not been found to be extremely large relative to the VSL. In particular, the bequest value for workers in hazardous jobs is “equivalent to a 2.4% chance at another year of life.” Michael J. Moore & W. Kip Viscusi, *Models for Estimating Discount Rates for Long-Term Health Risks Using Labor Market Data*, 3 J. RISK & UNCERTAINTY 381, 399 (1990).

8. The key aspect of severe personal injury cases is that the injury reduces the marginal utility that the victim can derive from income. W. Kip Viscusi & William N. Evans, *Utility Functions That Depend on Health Status: Estimates and Economic Implications*, 80 AM. ECON. REV. 353, 370 (1990). See also W. Kip Viscusi, *Pain and Suffering: Damages in Search of a Sounder Rationale*, 1 MICH. L. & POL’Y REV. 141, 147–56 (1996).

9. *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 425 (2003).

10. *Exxon Shipping Co. v. Baker*, 128 S. Ct. 2605, 2633 (2008).

and noneconomic damages. Because of the difference in the nature of the harms, noneconomic losses will have a relatively greater role in bodily injury cases than in property damage cases. In terms of the effect on punitive damages in bodily injury cases, the noneconomic losses should be accorded greater weight than the economic damages since the latter component will tend to understate both the harm caused and the total damages required for effective deterrence. Our analysis demonstrates that any such punitive damages ratio as indicated by the Supreme Court is inappropriate for cases involving bodily injury, and such ratios should not be applied.

Our empirical analysis, based on data from the Civil Justice Survey of State Courts 2005,¹¹ demonstrates that the current determinants of punitive damages are more complex than the relatively blunt punitive damages ratio approach advocated by the Supreme Court. In particular, our analysis shows that in bodily injury cases, greater weight is placed on the noneconomic loss component than on the economic loss value. Such a disproportionate weight is consistent with our assessment that noneconomic damages that are appropriate for purposes of compensation are inadequate from the standpoint of deterrence.

Our proposed punitive damages approach shifts the focus from admissible punitive damages ratios to the total monetary amount needed for deterrence. How this can be done is illustrated using examples of wrongful death cases from state courts. The appropriate deterrence damages value incorporates information on the VSL, thus providing explicit guidance for an assessment of punitive damages awards that would otherwise be fraught with substantial error.

II. THE VALUE OF STATISTICAL LIFE

The economic approach to valuing risks of death yields a dollar value known as the “value of statistical life,” sometimes called the “value of life.”¹² The VSL is the rate of tradeoff between money and small risks of death. Government agencies use this approach to value the reductions in mortality risk associated with government regulations.¹³

11. Bureau of Justice Statistics, U.S. Dep’t of Justice, Civil Justice Survey of State Courts, 2005: Codebook (Jan. 14, 2009), available at <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/23862?archive=ICPSR&q=23862> [hereinafter CJSSC 2005: Codebook].

12. See generally W. KIP VISCUSI, FATAL TRADEOFFS: PUBLIC AND PRIVATE RESPONSIBILITIES FOR RISK (1992) (using the terminology “value of life”). Recent studies use the terminology “value of statistical life.” See *supra* note 3.

13. See *supra* note 3.

To illustrate the VSL concept, consider the following example.¹⁴ Suppose a worker is willing to accept a fatality risk of 1/10,000 in return for an annual wage compensation of \$900. The VSL, or the value per unit risk, is \$900 divided by 1/10,000, or \$9 million. Viewed somewhat differently, if 10,000 workers were each exposed to a 1/10,000 risk of death and each required \$900 in compensation to face this risk, there would be a total of \$9 million in compensation paid for the one expected, or statistical, death. By the same token, these workers would be willing to pay \$900 for a fatality risk reduction of 1/10,000. Thus, the buying price and selling price for changes in risk are the same for very small changes in risk.

To establish the VSL figures, the government does not rely on such hypothetical thought experiments, but instead relies primarily on the value derived from labor market studies of workers' wage-risk tradeoffs. Thus, the VSL is calculated based on the actual amount of additional wage compensation that workers receive for fatality risks and the actual level of these risks.¹⁵ The estimates of the wage premiums for risk used in these calculations are based on statistical analyses of large groups of workers that control for other aspects of the job and worker productivity.

Government agencies that rely on the VSL methodology for evaluating regulatory proposals use generally similar values, although the specific VSL figure may differ somewhat by agency. The Environmental Protection Agency ("EPA") uses estimates based on reviews of the VSL literature and selected key studies, with the EPA's Air Office using a VSL of just under \$7 million and other branches of the agency using a VSL as high as \$9 million.¹⁶ Likewise, the Department of Transportation recommends use of a VSL of \$5.8 million based on a somewhat different set of studies.¹⁷ There will be some differences across studies because of differences in the samples of workers used and differences in methodology.¹⁸ The VSL approach is an accepted methodology within the economics literature and among government agencies. Dozens of peer reviewed studies estimating VSLs have been published in major economics journals, and the Office of Management and Budget has suggested that

14. This example is intended to illustrate the VSL based on a thought experiment rather than indicating the kinds of statistical studies used to generate the VSL estimates.

15. See VISCUSI, *supra* note 12, at 34-42 (providing a survey of VSL literature); W. Kip Viscusi & Joseph E. Aldy, *The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World*, 27 J. RISK & UNCERTAINTY 5 (2003) (same).

16. See Viscusi, *supra* note 2, at 113-18 (reviewing the different estimates used by the EPA and the different studies the EPA took into account).

17. Duvall & Gribbin Memo, *supra* note 3 (citing Viscusi & Aldy, *supra* note 15).

18. These differences are reviewed in Viscusi & Aldy, *supra* note 15.

government agencies use the methodology.¹⁹ While the values used by various government agencies differ and have changed over time, most agencies now use figures in the range of \$5 million to \$9 million.²⁰ Here we will focus on the \$9 million figure for concreteness.²¹

We emphasize that the VSL is not a measure of a person's lifetime earnings, but only relates to the tradeoff people are willing to make between money and very small risks of death. A typical worker's lifetime earnings will be far less than \$9 million. As a numerical example, consider a worker paid the median weekly earnings for wage and salary workers. For the first quarter of 2009, this value is \$738,²² which will yield an annual income of \$36,900, assuming a fifty-week work year. If the worker facing the fatality risk is thirty-five years old, there will be twenty-five years of remaining work-life on average.²³ At a discount rate of 2 percent,²⁴ the present value of the remaining lifetime earnings amount is approximately \$735,000, or an order of magnitude smaller than the median VSL. Nevertheless, because the VSL pertains to money tradeoffs for very

19. OFFICE OF INFO. & REGULATORY AFFAIRS, *supra* note 3, app. D, at 146–48 (Office of Management and Budget circular to executive agency heads).

20. As noted above, the Department of Transportation now uses a figure of \$5.8 million. Duvall & Gribbin Memo, *supra* note 3. The VSL numbers used by agencies have risen over time, as the EPA uses values in the \$7–\$9 million range. Viscusi, *supra* note 2, at 115. Other values in 2008 dollars used by agencies for certain regulations are \$6.2 million, by the Consumer Product Safety Commission; \$5.3–\$6.8 million, by the Food and Drug Administration; and \$3.1–\$6.2 million, by the Department of Homeland Security. *Id.* at 108 tbl.1.

21. The \$9 million figure is also consistent with labor-market studies. Viscusi and Aldy presented a meta-analysis of the different wage-risk studies and found a median VSL of \$7 million. Viscusi & Aldy, *supra* note 15, at 63. This value is approximately \$8.75 million in 2009 dollars. According to the Consumer Price Index (“CPI”) calculator, \$1.00 in the year 2000 is equivalent to \$1.25 in 2009. U.S. Dep’t of Labor, Bureau of Labor Statistics, CPI Inflation Calculator, http://www.bls.gov/data/inflation_calculator.htm (last visited Nov. 3, 2009). For purposes of our discussion, we will use a VSL of \$9 million.

22. News Release, Bureau of Labor Statistics, U.S. Dep’t of Labor, Usual Weekly Earnings of Wage and Salary Workers: First Quarter 2009, at 1 (Apr. 16, 2009), available at http://www.bls.gov/news.release/archives/wkyeng_04162009.pdf.

23. See KENNETH R. FEINBERG ET AL., U.S. DEP’T OF JUSTICE, FINAL REPORT OF THE SPECIAL MASTER FOR THE SEPTEMBER 11TH VICTIM COMPENSATION FUND OF 2001, at 33 (2004), available at http://www.usdoj.gov/final_report.pdf (basing work-life estimates on the tables presented in James Ciecka, Thomas Donley & Jerry Goldman, *A Markov Process Model of Work-Life Expectancies Based on Labor Market Activity in 1997–98*, J. LEGAL ECON., Winter 1999–00, at 33). Conditional on being a worker at age thirty-five, the average expected remaining work-life is twenty-five years from age thirty-five until the worker’s death. Work-life estimates are not restricted to consecutive years in the labor force but also take into account interruptions such as periods of unemployment, disability, and the risk of death. See Ciecka et al., *supra*.

24. We assume that income would be paid at the beginning of each year for twenty-five consecutive years. This assumption is made to simplify the calculations. Recognizing periods of interruptions in work will defer some income beyond twenty-five years, reducing its present value.

small risks of death, it is in no way puzzling or inconsistent that workers with far less than \$9 million in resources might make risky job choices that reflect a VSL of \$9 million. It is not the certainty of life or death that is involved, only minute risks to life.

Clearly the prospect of being paid \$9 million after one's death will not make death a break-even proposition. Such payments will not be enjoyed while alive, and even if the payments were made before one's death, the VSL amount would not make a person willing to face certain death. In this sense, the situation for bodily injury compensation is quite different than that for property loss. Money and economic goods are replaceable, but life and health are not. Unlike full compensation for a property loss, the VSL does not make a victim "whole" after a fatality. Indeed, the VSL is not a compensation concept at all except with respect to very small changes in risk level. Workers are not paid \$9 million after a fatality, but instead receive an amount of compensation for exposure to small risk levels before any harm has occurred. Thus, the VSL is an *ex ante* amount of compensation that fully compensates the person for a prospective small probability of death.

The compensation that workers receive for risk serves an additional role in market situations by establishing the price of safety for the injurer. Viewed from the standpoint of a firm, the VSL defines the amount of money that the firm should be willing to spend to reduce the risk. In the example above, if it is possible for the firm to eliminate the 1/10,000 risk of death for less than \$900, then it will have a financial incentive to do so. If the safety improvement costs more than this amount, then it will not eliminate the risk; it would prefer to pay the worker an additional \$900. While the profit-making calculus performed by the firm may seem harsh, the attractive aspect of this process is that the individual's own valuation, observed in the market, establishes the terms of trade. That is, it is the amount by which the worker exposed to the risk values the reduction of that risk that establishes the price the firm should be willing to pay to reduce the risk.

These mechanisms work in parallel fashion in other market contexts. Consumers are willing to pay less for potentially dangerous products, whether the product is a car with minimal safety equipment or a house in a polluted neighborhood. The consumer's valuation of the risk establishes the incentives for the producer to manufacture safer products. If safety cannot be enhanced, as with a house where the seller cannot reduce the neighborhood's pollution level, the buyer will be compensated for the risk through a lower price.

In much the same way as the VSL establishes the price of safety when risks are traded in well-functioning markets, government agencies use the VSL to determine the stringency of government regulations and to assess whether any regulations at all are warranted on an economic basis. These regulations affect how much firms should spend to reduce the risks to workers, consumers, or the general public. The government policies being assessed in this manner do not pertain to the certainty of life or death, but to small changes in risk levels. Using the VSL for benefit assessments sets the price for safety used by the government in a manner that creates an economically efficient level of safety.

In this Article, we propose that these same principles of establishing financial incentives to create efficient levels of safety should likewise be applied to the courts. In situations involving punitive damages, a prominent objective is deterrence. But what monetary amount is sufficient to create deterrence? Once again, the VSL is a central component of any deterrence task. Continuing our example, the firm that creates a risk will respond to the economic incentives created by the total award; thus, it is the sum of punitive damages and compensatory damages that is the key determinant of safety behavior. Assuming the conduct poses a small risk of death, the situation can be cast in the same terms as the use of the VSL by government agencies. Just as the VSL establishes the pertinent price to be placed on the lives saved by government regulations so that they will create an efficient level of safety, penalizing the firm based on the VSL will likewise provide the financial incentives necessary for the injurer to take care when it is efficient to do so.

While our focus will be on establishing deterrence for situations of wrongful death, the approach generalizes to bodily injury cases. The counterpart of the VSL for other injuries is the risk-money tradeoff that people would have for that injury's outcome. A growing literature has developed these values for a wide range of injuries such as the representative nonfatal job injury, chronic bronchitis, as well as skin burns, nerve disease, fatal cases of cancer, and nonfatal cases of cancer.²⁵ Our proposed formula for punitive damages ultimately could provide guidance for setting punitive damages for deterrence purposes in bodily injury cases generally, not just those resulting in death.

25. W. Kip Viscusi, *The Value of Risks to Life and Health*, 31 J. ECON. LITERATURE 1912, 1941-42 tbl.7 (1993).

III. SETTING DAMAGES FOR DETERRENCE

The deterrence function of damages depends on all forms of damages that are paid. Thus, the fundamental issue is whether the sum of punitive damages and compensatory damages is adequate to provide incentives for deterrence. We begin with the situation in which the harmful conduct can be detected with certainty. Our proposal, which is developed below, is the following: *To achieve efficient levels of deterrence in cases of wrongful death, compensatory damages plus punitive damages should equal the VSL in situations in which punitive damages are warranted. If the value of compensatory damages is insufficient to establish this equality, it should be done by raising only the level of punitive damages, with no increase in the compensatory damages value. Compensatory damages should serve their intended function of compensation and should not be conflated with the deterrence function of punitive damages.*

Compensatory damages consist of compensation for financial loss, often referred to as economic damages, and compensation for noneconomic losses such as pain and suffering and mental distress.²⁶ The thrust of our argument with respect to compensatory damages for wrongful death is that such damages are targeted at the loss suffered by the survivors, such as lost earnings, medical expenses, and grief.²⁷ These are the types of loss that the deceased would have valued from the standpoint of insurance. This compensation level, however, will fall short of a “make whole” amount.²⁸ It is the inadequacy of financial payments to fully compensate for noneconomic harms that will be the main factor that distinguishes cases involving only property damage from those involving bodily injury.

We point out at this juncture that our formula equating the VSL to the sum of punitive damages and compensatory damages can be refined to reflect case characteristics that are different from those of an average fatality. Here we consider two sources of refinement pertaining to the level of economic loss. The first variation is that in some cases, substantial medical expenses may have been incurred before death. In this situation, the optimal deterrence amount can be increased to include these expenses.

26. See W. Kip Viscusi, *The Flawed Hedonic Damages Measure of Compensation for Wrongful Death and Personal Injury*, 20 J. FORENSIC ECON. 113, 118–21 (2007). Noneconomic pain and suffering damages comprise a substantial percentage of compensatory damages awards. 2 AM. LAW INST., ENTERPRISE RESPONSIBILITY FOR PERSONAL INJURY 199–201 (1991) [hereinafter ENTERPRISE RESPONSIBILITY].

27. See Viscusi, *supra* note 26, at 118–21.

28. See *id.* at 120–21.

Thus, the sum of compensatory damages and punitive damages would equal the VSL plus medical costs.

A second complication occurs when wrongful death victims have very high income levels. Yet heterogeneity in income can be accommodated by recognizing a variation in the VSL with income levels. Economic research, which has been formally recognized in Department of Transportation VSL guidelines,²⁹ has shown that the VSL rises less than proportionally in relation to income levels. For instance, a 10 percent increase in a person's income level will boost the VSL by only 5–6 percent.³⁰ Recognition of income heterogeneity in setting damages would set the income-specific VSL equal to the sum of compensatory damages and punitive damages. Note that it is not appropriate to also increase the compensatory damages amount (which already reflects the level of income) to account for a higher level of income. Doing so would be double counting, as the influence of income differences is already accounted for in the adjusted VSL level.

Although distinguishing VSL differences by income groups is feasible, to our knowledge most government agencies do not account for such heterogeneity.³¹ Matters may be different for the courts, however, which have a tradition of basing economic damages on the victim's earnings history and future prospects rather than on the average for the population as a whole.³²

We now resume discussion of our basic proposal. Compensatory damages in a wrongful death case will consist of a conventional economic damages component, as well as a noneconomic damages component that is less precise. Such an approach was used in disbursing the September 11th Victim Compensation Fund of 2001.³³ Economic damages typically consist of medical expenses and the present value of the deceased's lost earnings, net of the deceased's consumption from that earnings amount. Thus, the focus is on the income loss to the survivors, or what might be viewed as an insurance value for the financial loss. The noneconomic loss component consists of compensation for the pain and suffering of the deceased and

29. Duvall & Gribbin Memo, *supra* note 3 (citing income elasticities of VSL based on Viscusi & Aldy, *supra* note 15).

30. Viscusi & Aldy, *supra* note 15, at 40.

31. See Viscusi, *supra* note 2, at 109. Based on the authors' knowledge, the Department of Transportation is the only agency to take such income heterogeneity into account.

32. Tort law generally provides for recovery of lost earnings. See 2 DAN B. DOBBS, DOBBS LAW OF REMEDIES: DAMAGES—EQUITY—RESTITUTION § 8.3(1), at 423 (2d ed. 1993).

33. See FEINBERG ET AL., *supra* note 23, at 30–43 (detailing the factors considered in calculating economic and noneconomic damages).

compensation to the family for the loss. Unlike the situation of property damage, however, there is no expectation that the compensation will fully compensate the victim for the loss.

The dangers of overcompensating for wrongful death are clear in contexts such as product safety, where a customer buys a potentially dangerous product. Expected tort liability costs will raise the product price because the consumer is buying, in effect, a bundled commodity that also includes the product-risk insurance provided by the tort system.³⁴ A worthwhile thought experiment is to ask what type of insurance policy the customer would want to accompany the product. Because death or a serious disabling injury will reduce the extent to which the customer can derive utility from money, less than full insurance will generally be preferred.³⁵ The cost of whatever insurance is provided as a package with the product through the tort liability system will be passed on to the consumer through higher prices such that excessive insurance will not be attractive. In effect, routine compensation of victims of wrongful death based on the VSL will force them to buy an insurance policy that they do not value.

But if the compensatory damages are restricted to what is desirable from an insurance standpoint, there will be inadequate incentives for deterrence. The solution is that situations in which there is a need to foster deterrence are those in which punitive damages have a fundamental role to play. Thus, compensatory damages will suffice for cases in which the insurance objective is paramount; if deterrence is the central concern, however, incorporating the VSL into punitive damages will be warranted.

While the VSL is a sound economic approach to establishing incentives for deterrence, it is not an appropriate approach for setting compensatory damages. Applying the VSL to establish the noneconomic damages component of compensatory damages, or the loss of enjoyment of life, has come to be known as the "hedonic damages value." Recently, Posner and Sunstein have also advocated the use of the VSL as a compensatory damages measure.³⁶

34. This is the standard economic theory for the effect of tort liability costs on prices. See Paul H. Rubin, John E. Calfee & Mark F. Grady, *BMW v. Gore: Mitigating the Punitive Economics of Punitive Damages*, in 5 SUP. CT. ECON. REV. 179, 188 (Harold Demsetz, Ernest Gellhorn & Nelson Lund eds., 1997) (discussing the effect of punitive damages on product prices).

35. See *supra* notes 7–8 and accompanying text.

36. Posner & Sunstein, *supra* note 5, at 587–90. Courts have, however, widely rejected use of hedonic damages for compensation. See Ireland, *supra* note 4, at 190. Below we will show that Polinsky and Shavell adopt a fairly similar approach in their punitive damages formulation for personal injury cases. See *infra* notes 54–55 and accompanying text.

Our advocacy of increasing reliance on the VSL, but restricting its role to punitive damages contexts, is quite different from the compensatory damages proposal offered by Posner and Sunstein. Their proposal is a compensatory damages formula that consists of two components³⁷: conventional economic damages pertaining to the harm to survivors and the “hedonic loss of the victim.”³⁸ Their proposal is unrelated to punitive damages or whether punitive damages are appropriate.

The harm-to-survivors damages component in their formula is very similar to the components of compensatory damages in wrongful death cases. In particular, the damages amount would include compensation for nonmonetary losses such as “grief, mental distress, loss of companionship, and the like,” as well as “the amount of money that would make the survivor just as well off (financially) as he would have been if the death had not occurred.”³⁹ Their first damages component is consequently the current compensatory damages approach for wrongful death except that there is no compensation for the pain and suffering of the deceased.⁴⁰

The other damages component, the hedonic loss, is the VSL. Much of Posner and Sunstein’s discussion explores different ways in which juries might approach the selection of the pertinent VSL amount. They indicate that this value could be based on government estimates of the VSL or on juror thought experiments involving risk-money tradeoffs.⁴¹ They also opine that the VSL number might be tailored to the characteristics of the deceased,⁴² but after death it is not feasible to run a risk-money thought experiment to determine the willingness of the deceased to bear risk. Because of the difficulty jurors might have in imputing a VSL, Posner and Sunstein conclude that jurors might be provided with information on the government’s valuation. In particular, they suggest that juries could follow the approach of the government and use the “standard \$6 million figure.”⁴³ As discussed earlier, however, there is no standard number. Even within agencies, such as the EPA, there are some important differences in the values used.⁴⁴ Nevertheless, the government numbers are now clustering in

37. Posner & Sunstein, *supra* note 5, at 587.

38. *Id.*

39. *Id.* at 590.

40. *Id.* at 584–92 (outlining their proposal, which omits mention of pain and suffering except indirectly through the hedonic loss of the victims, or VSL). For a discussion on the role of pain and suffering compensation, see ENTERPRISE RESPONSIBILITY, *supra* note 26, at 199–230.

41. Posner & Sunstein, *supra* note 5, at 587–90.

42. *Id.* at 587.

43. *Id.*

44. See *supra* notes 16–20 and accompanying text.

a general range,⁴⁵ and experts could present testimony on the appropriate VSL just as they do now for the standard components of economic loss.

If hedonic damages were introduced as a matter of course as an additional component of compensation in wrongful death cases, it would lead to a dramatic escalation in damages. As illustrated above, the VSL is generally about an order of magnitude greater than the present value of worker earnings.⁴⁶ With a substantial degree of understatement, Posner and Sunstein recognize that their proposal “would have a significant impact on tort awards, especially for the elderly in non-hedonic-loss states.”⁴⁷

The Posner-Sunstein proposal provides excessive compensation from the standpoint of both insurance and deterrence. As indicated above, the optimal insurance amount in terms of payment to survivors will be below the VSL. Even if the sole objective is that of deterrence, the Posner-Sunstein prescription is excessive because it adds to the VSL amount an additional compensatory damages component—the harm to survivors. The VSL is in itself the complete measure of the deterrence value. Government agencies do not value statistical lives by adding to the VSL the financial losses and other consequences associated with expected deaths; nor should the courts.

IV. THE LAW AND ECONOMICS THEORY OF DETERRENCE

Although jury instructions do not provide precise guidance with respect to setting punitive damages award amounts, application of law and economics principles for efficient levels of deterrence helps to define this task. Law and economics theories of punitive damages have focused primarily on the influence of the probability of detection of the wrongful conduct. The most comprehensive treatment of the law and economics theory is that of Polinsky and Shavell.⁴⁸ Taking into account whether the harm involves property damage or personal injury is treated as a minor amendment in their articulation of the law and economics theory.⁴⁹ We will show that their amendment for wrongful death cases creates correct deterrence incentives in punitive damages contexts but distorts the role of compensatory damages when punitive damages are not warranted. Our proposal eliminates the erroneous inflation of the compensatory damages

45. See Viscusi, *supra* note 2, at 108 tbl.1, 114 tbl.2.

46. See *supra* notes 22–23 and accompanying text.

47. Posner & Sunstein, *supra* note 5, at 588.

48. Polinsky & Shavell, *supra* note 6.

49. See *id.* at 941–42.

amount that would result from their approach.

The situation we have considered thus far is that in which the probability of detection of the harmful conduct is 1.0. While for concreteness the discussion will be cast in terms of tortious conduct, the principles discussed here generalize to other damages contexts as well. For tort cases involving only property damage, there is no need to levy punitive damages from the standpoint of deterrence, as compensatory damages equal to the cost of the harm will suffice.⁵⁰ There may, of course, be an additional punishment rationale.⁵¹ Matters are quite different for bodily injury cases. Unlike harms involving property loss, wrongful death cases involve irreplaceable losses. As discussed above, compensatory damages will not suffice in providing efficient levels of deterrence. Compensatory damages alone will fall short because the payment to the survivors and accident victims cannot make them whole, unlike in property damage cases where the payment is an amount that makes the victim whole. Setting the value of damages equal to the VSL will establish appropriate levels of deterrence.

Because the law and economics theory has focused almost exclusively on the property loss situation, the primary emphasis has been on the theory of deterrence when the probability of detection is less than 1.0. Beginning with Jeremy Bentham, analysts have observed that when the probability of detection is less than 1.0, the expected penalty incurred by the injurer must be increased to provide adequate deterrence.⁵² In particular, the total value of punitive damages and compensatory damages should equal the value of the harm divided by the probability of detection. In this formulation, for cases involving only economic loss, one can express the optimal punitive damages amount in terms of a punitive damages ratio in which economic damages and noneconomic damages play symmetric roles.⁵³ The principal

50. *Id.* at 873–74.

51. Exactly how the punishment objective should enter and whether it should be added in some way to the deterrence value is unclear. For a discussion of the punishment objective, see *id.* at 948–56, and *id.* at 955 (indicating that the punitive damages amount should be a number between the punishment value and the deterrence value). For a discussion of model jury instructions, see *id.* app.

52. The classic cite for this theory is JEREMY BENTHAM, *Principles of Penal Law*, in 1 THE WORKS OF JEREMY BENTHAM 365, 401–02 (John Bowring ed., 1962) (1838–1843). Extensive modern developments exist as well. See, e.g., Robert D. Cooter, *Punitive Damages for Deterrence: When and How Much?*, 40 ALA. L. REV. 1143, 1149–53 (1989); Polinsky & Shavell, *supra* note 6, at 887–96.

53. For example, let the probability of detection be less than 1.0. Assume for this case that the value of the harm equals Economic Damages + Noneconomic Damages so that all harms can be fully compensated through monetary payments. Penalties then establish optimal deterrence if Probability of Detection x (Punitive Damages + Economic Damages + Noneconomic Damages) = Harm. After some rearrangement, one finds that the punitive damages amount can be expressed in terms of the punitive

advocates of this approach, Polinsky and Shavell, conclude: "This discussion suggests a simple formula for assuring that injurers will pay for the harms they cause: *the total damages imposed on an injurer should equal the harm multiplied by the reciprocal of the probability that the injurer will be found liable when he ought to be.*"⁵⁴

The same simple formula of dividing compensatory damages by the probability of detection will not establish efficient levels of deterrence for bodily injury cases given the current method for setting compensatory damages. If a bodily injury case includes only financial losses or harms that could be fully addressed with monetary compensation, then the situation would be equivalent to that involving pure financial loss. The more consequential situation, however, is that in which the noneconomic harms cause fundamental welfare losses that are not equivalent to a replaceable monetary loss, as with wrongful death. Even with a probability of detection of 1.0, damages equal to the VSL are required to establish efficient levels of deterrence. Adding the additional complication of a probability of detection of less than 1.0 in no way compensates for the inadequacy of the compensatory damages as an appropriate measure of deterrence for bodily injury.

With a probability of detection of less than 1.0, the appropriate total value of compensation from a deterrence standpoint is the VSL divided by the probability of detection. This inclusion of the probability of detection amends our damages formula to account for a probability of detection of less than 1.0. This generalization of the law and economics formula when the probability of detection is less than 1.0 is identical to the formula proposed by Polinsky and Shavell in situations in which punitive damages are warranted.

Polinsky and Shavell generally advocate raising compensatory damages, and not simply in contexts in which punitive damages are warranted:

We recognize, however, that the level of compensatory damages awards in personal injury cases may be too low in practice to accomplish proper deterrence. For example, it has been calculated that in wrongful death cases, the amount that an injurer should pay is between \$3 million and \$6 million, whereas actual awards are usually substantially lower. If compensatory damages are too low in personal injury cases, they should

damages ratio, or $(\text{Punitive Damages} / (\text{Economic Damages} + \text{Noneconomic Damages})) = (1 / (\text{Probability of Detection} - 1))$.

54. Polinsky & Shavell, *supra* note 6, at 889.

be raised appropriately. Punitive damages should not be awarded to correct for inadequate compensatory damages⁵⁵

There is a dramatic difference, however, in how our formulas will affect the components of damages. Whereas Polinsky and Shavell propose that compensatory damages be set so as to establish deterrence, our proposal restricts the role of the VSL to the punitive damages component. We propose that since deterrence concerns are the dominant focus of punitive damages, the level of punitive damages should be increased to the level dictated by this formula whenever the probability of detection is less than 1.0. In contrast, Polinsky and Shavell seek to use the same formula for both property damage cases and bodily injury cases—that is, total damages equal the value of compensatory damages divided by the probability of detection. To then fulfill the deterrence function, compensatory damages in wrongful death cases must be boosted to the VSL irrespective of whether punitive damages are warranted. While the Polinsky-Shavell proposal falls short of the extent of damages inflation that will be generated by the Posner-Sunstein proposal—which would also include additional compensatory damages components for all cases—it nevertheless will provide excessive levels of compensation in typical wrongful death cases.

It is possible to avoid these problems by not attempting to shoehorn the punitive damages formula into the same construct for property damage cases and bodily injury cases. Of course, there are parallels. But the standard compensatory damages payment for property damage will play a much different role in restoring the victim's welfare and fostering efficient levels of deterrence than in cases of bodily injury. The solution is to have a different, but parallel, approach for punitive damages in wrongful death cases that provides deterrence when punitive damages are warranted without distorting the compensatory damages approach for cases generally.

V. LEGISLATIVE CONSTRAINTS

To establish appropriate levels of deterrence using punitive damages in cases involving wrongful death, there must be the option of raising punitive damages to an appropriate level. Suppose that a wrongful death case has an economic damages award of \$700,000, a noneconomic damages award of \$700,000, and involves conduct that meets the pertinent criteria for punitive damages. In order to establish appropriate deterrence incentives through a total damages award of \$9 million, there must be a

55. *Id.* at 941–42 (footnotes omitted).

punitive damages award of \$7.6 million, creating a ratio of punitive damages to compensatory damages of 5.43:1.

A punitive damages award of this magnitude is not possible if there are legislative constraints on the permissible amount of the award. Many states impose restrictions on the dollar amount of punitive damages, and some states limit the ratio of punitive damages to compensatory damages.⁵⁶ The greatest restriction, however, is that the majority of states have a total prohibition on punitive damages in cases involving wrongful death.⁵⁷ In our example above, such prohibitions create a \$7.6 million shortfall in the damages amount needed to create sufficient incentives to deter the wrongful conduct that led to the death. Thus, legislative restrictions on punitive damages for wrongful death cases undermine deterrence efforts for the most severe personal losses.

A comparison of the deterrence and compensation objectives for property damage cases to personal injury cases suggests that if there is ever a basis for prohibiting punitive damages, it should be for property damage losses rather than wrongful death. Compensatory damages for property loss will equal the value of the harm that has been caused. Following the standard law and economics theory, a deterrence rationale for punitive damages in a property damage case exists only where the probability of detecting the wrongdoing in a particular instance is less than 1.0. In contrast, even with a probability of detection of 1.0, compensatory damages for wrongful death will not provide adequate deterrence. The harm in wrongful death cases causes an irreplaceable loss, and to establish the necessary level of deterrence, the VSL should serve as the benchmark for augmenting the compensatory damages amount through an additional punitive damages levy.

It is true, of course, that the victim in a wrongful death case is no longer alive and cannot enjoy spending the damages award, creating a situation of overinsurance. But the objective of the punitive award is that of adequate deterrence, and some compromise of the insurance objective is inevitable when nonmonetary losses are involved. It should also be noted that the recipients of punitive damages in a property damage case also will, in effect, be paid an overinsurance amount. Compensatory damages ideally are set to compensate for the financial value of the harm so that the additional punitive damages amount will exceed the full insurance amount.

56. Michael L. Rustad, *The Closing of Punitive Damages' Iron Cage*, 38 LOY. L.A. L. REV. 1297, 1338-46 (2005).

57. *Id.* at 1308.

The overinsurance problem of punitive damages can be avoided while retaining the deterrence incentives by making the injurer pay the punitive damages to a government entity, such as the state, rather than to the plaintiff. Some states have sharing provisions for punitive damages in which the state does recoup some of the punitive damages award.⁵⁸ The practical limitation on such arrangements is that the parties can settle out of court, enabling the plaintiff to reap some of the expected punitive damages award payment that otherwise would have benefited the state.

In terms of a general policy proposal, we do not recommend that punitive damages limits be imposed in either bodily injury cases or wrongful death cases. We also conclude that the current emphasis on limiting punitive damages awards to a greater extent for personal injury cases than for property damage cases is clearly misplaced.

VI. THE U.S. SUPREME COURT'S LIMITATIONS ON PUNITIVE DAMAGES RATIOS

Recent U.S. Supreme Court decisions have not banned punitive damages awards, but rather have focused on the ratio of punitive damages to compensatory damages as an index of the reasonableness of the punitive damages award. Although the damages formulas proposed by the Supreme Court differ from the Polinsky-Shavell formula, the approaches similarly attempt to articulate a broadly applicable formula irrespective of case type. This Article will show that it is misguided to adopt a one-ratio-fits-all-cases approach to thinking about the appropriate ratio of punitive damages to compensatory damages.

Our proposed punitive damages formula can be expressed in terms of a ratio, but the ratio has no reasonable upper limit. The formula is as follows: $\text{Punitive Damages} + \text{Compensatory Damages} = \text{VSL}$ can be expressed in ratio form as $\text{Punitive Damages} / \text{Compensatory Damages} = (\text{VSL} / \text{Compensatory Damages}) - 1$. If, for instance, the VSL is ten times the value of compensatory damages, then the ratio equals 9:1. Different VSL levels and compensatory damages amounts for different cases, however, can lead to higher or lower ratio values.

Using the amount of compensatory damages as a yardstick for assessing the reasonableness of punitive damages is only appropriate if compensatory damages serve as an accurate measure of the value of the harm and if all types of harm are captured adequately by the compensatory

58. *Id.* at 1350.

damages amount. We believe that the compensatory damages measure is not a pertinent measure for bodily injury cases and that it is too aggregative a reference point for determining the necessary level of punitive damages for deterrence purposes. The total value of compensatory damages homogenizes the different types of harm involved and abstracts from the composition of damages and the nature of the harm. Recognizing the role of the different damages components and whether the case involves bodily injury is essential to setting punitive damages amounts that will achieve efficient levels of deterrence. While there has long been recognition in the punitive damages literature and by the Court of factors that may influence the appropriate level of a punitive damages award—such as the influence of the probability of detection—the composition of damages has been given insufficient attention in the quest for simple rules of thumb for evaluating the reasonableness of punitive damages awards.

Several Supreme Court cases have addressed the role of the punitive damages ratio, but the first summary statement of the visible role of the ratio in determining the reasonableness of punitive damages awards was in *BMW of North America v. Gore*.⁵⁹ In that decision, the Court observed that “perhaps [the] most commonly cited indicium of an unreasonable or excessive punitive damages award is its ratio to the actual harm inflicted on the plaintiff.”⁶⁰ Previous Supreme Court decisions had also discussed the reasonableness of the punitive damages award in terms of a ratio, with the Court finding that a ratio of 4:1 was not constitutionally improper.⁶¹ A subsequent decision in *TXO Production Corp. v. Alliance Resources Corp.* upheld a judgment in which the ratio was 526:1.⁶² Thus, while the U.S. Supreme Court often focused on punitive damages ratios in assessing the appropriateness of the punitive damages award, throughout the 1990s there was little guidance as to which ratios were appropriate.

This lack of firm guidance did not persist as the Supreme Court subsequently imposed substantial structural constraints on punitive damages ratios. In its 2003 decision in *State Farm Mutual Automobile Insurance Co. v. Campbell*, the Court selected a single-digit reference point as the appropriate upper limit on the ratio: “Our jurisprudence and the principles it has now established demonstrate, however, that, in practice, few awards exceeding a single-digit ratio between punitive and

59. *BMW of N. Am., Inc. v. Gore*, 517 U.S. 559 (1996).

60. *Id.* at 580.

61. *Pac. Mut. Life Ins. Co. v. Haslip*, 499 U.S. 1 (1991).

62. *TXO Prod. Corp. v. Alliance Res. Corp.*, 509 U.S. 443, 462 (1993).

compensatory damages, to a significant degree, will satisfy due process.”⁶³

There could, of course, be exceptions to the single-digit ratio limit. For cases with very large amounts of compensatory damages, the Court indicated that a lower ratio may be appropriate: “When compensatory damages are substantial, then a lesser ratio, perhaps only equal to compensatory damages, can reach the outermost limit of the due process guarantee.”⁶⁴ At the opposite end of the compensatory damages spectrum, if the compensatory damages amount is small, then a large ratio might be acceptable: “Nonetheless, because there are no rigid benchmarks that a punitive damages award may not surpass, ratios greater than those we have previously upheld may comport with due process where ‘a particularly egregious act has resulted in only a small amount of economic damages.’”⁶⁵

In *Exxon Shipping Co. v. Baker*, the Supreme Court expressed concern over the unpredictability of punitive damages awards.⁶⁶ But the presence of such unpredictability is not surprising given the imprecision of jury instructions. Unlike the guidance offered by the Court in *Gore*, jury instructions do not frame the issue in precise mathematical terms or as a task involving the selection of a ratio. Rather, the jury is instructed that factors such as the recklessness of the behavior, malicious conduct, outrageous behavior, and exceptional blameworthiness are to be considered; how they should be considered is not specified.⁶⁷ As a result, studies have found that while juries are able to reach a consensus on what constitutes wrongful conduct, they are unable to systematically map these concerns into dollar values.⁶⁸ The result is a lack of predictability in punitive damages awards as summarized in the *Exxon Shipping* decision.⁶⁹

Consideration of the instructions given to the jury in *In re Exxon Valdez*, which ultimately became the subject of the Supreme Court’s decision in *Exxon Shipping*, makes it possible to trace much of the unpredictability in punitive damages awards to the vagueness of the

63. *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 425 (2003).

64. *Id.*

65. *Id.* (quoting *Gore*, 517 U.S. at 582).

66. *Exxon Shipping Co. v. Baker*, 128 S. Ct. 2605, 2625–26 (2008).

67. CASS R. SUNSTEIN ET AL., *PUNITIVE DAMAGES: HOW JURIES DECIDE* 11–14 (2002).

68. *See id.* at 212–14 (synthesizing controlled experimental studies on punitive damages that found that mock jurors reached a consensus on the blameworthiness of behavior but there was substantial variability in assigning a punitive damages penalty for such conduct).

69. *Exxon Shipping*, 128 S. Ct. at 2625–26. As indicated in footnote seventeen of the decision, the Court declined to rely on SUNSTEIN ET AL., *supra* note 67, because that study was funded in part by Exxon. *Exxon Shipping*, 128 S. Ct. at 2626 n.17.

guidance. Consistent with the usual concern that punitive damages foster the objectives of deterrence and retribution, the instructions outline the general purposes of punitive damages: “The purposes for which punitive damages are awarded are: (1) to punish a wrongdoer for extraordinary misconduct; and (2) to warn defendants and others and deter them from doing the same.”⁷⁰

The guidance provided in *In re Exxon Valdez* with respect to setting the magnitude of punitive damages involves little more than suggesting that the jury set a “reasonable” damages amount:

[T]he amount of punitive damages may not be determined arbitrarily. You must use reason in setting the amount. . . . [A]ny punitive damages award must have a rational basis in the evidence in the case. A punitive damages award may not be larger than an amount that bears a reasonable relationship to the harm caused to members of the plaintiff class by a defendant’s misconduct. . . . Also, the award may not be larger than what is reasonably necessary to achieve society’s goals of punishment and deterrence.⁷¹

With respect to the deterrence objective of punitive damages, the instructions do little more than restate the objective and do not indicate how a monetary damages figure might be selected. The instructions direct the jury to think about “whether an award of punitive damages is appropriate in this case, and, if so, in what amount” and to “consider steps taken by a defendant to prevent recurrence of the conduct in question—in this case, another oil spill.”⁷²

But what is the optimal deterrence value for future behavior? To what extent do compensatory damages not suffice? If they do not suffice, what is the extent of the shortfall? Should the jury be thinking in terms of the punitive damages ratio, a matter which is not addressed at all in jury instructions but has loomed large in court decisions? The instructions are silent on such fundamental concerns.⁷³

In its decision in *Exxon Shipping*, which addresses the punitive damages award after the Exxon Valdez oil spill, the Supreme Court established a stricter upper limit on the punitive damages ratio for maritime

70. *In re Exxon Valdez*, 236 F. Supp. 2d 1043, 1049 n.14 (D. Alaska 2002) (quoting Jury Instruction No. 22).

71. *Id.* at 1049 n.16 (quoting Jury Instruction No. 25).

72. *Id.* at 1050 n.21 (quoting Jury Instruction No. 35).

73. The U.S. District Court for the District of Alaska, in its decision in *In re Exxon Valdez*, stressed the importance of adequate instructions: “Without proper instructions, jury verdicts are patently suspect.” *Id.* at 1054.

cases such as the *Exxon* case. The Court's reasoning was based on empirical evidence regarding award distribution in samples of state court verdicts. Based on its review of cases, for which the median ratio in state courts was around 0.65:1, the Court developed its punitive damages ratio guidepost:

On these assumptions, a median ratio of punitive to compensatory damages of about 0.65:1 probably marks the line near which cases like this one largely should be grouped. Accordingly, given the need to protect against the possibility (and the disruptive cost to the legal system) of awards that are unpredictable and unnecessary, either for deterrence or for measured retribution, we consider that a 1:1 ratio, which is above the median award, is a fair upper limit in such maritime cases.⁷⁴

The Court also sought to reconcile the 1:1 ratio with its more lenient guidance in the *State Farm* decision by, in effect, indicating that the *Exxon Shipping* decision was a direct application of *State Farm*'s guidance: "In *State Farm*, we said that a single-digit maximum is appropriate in all but the most exceptional of cases, and '[w]hen compensatory damages are substantial, then a lesser ratio, perhaps only equal to compensatory damages, can reach the outermost limit of the due process guarantee.'" ⁷⁵

The increasing prominence of the 1:1 ratio in the Court's assessments of punitive damages awards was sufficiently noteworthy that Justice Ginsburg expressed her concern that this more restrictive ratio would be applied to a broader set of cases:

In the end, is the Court holding only that 1:1 is the maritime-law ceiling, or is it also signaling that any ratio higher than 1:1 will be held to exceed "the constitutional outer limit"? On next opportunity, will the Court rule, definitively, that 1:1 is the ceiling due process requires in all of the States, and for all federal claims?⁷⁶

Despite the 1:1 ratio providing a new reference point for determining the acceptability of punitive damages awards, the Court recognized that factors such as a low probability of detection or malicious conduct could also affect the appropriate magnitude of the award.⁷⁷ How such additional

74. *Exxon Shipping*, 128 S. Ct. at 2633 (footnote omitted).

75. *Id.* at 2634 (quoting *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 425 (2003)).

76. *Id.* at 2639 (Ginsburg, J., concurring in part, dissenting in part) (citation omitted).

77. *Id.* at 2633 (majority opinion) ("In a well-functioning system, we would expect that awards at the median or lower would roughly express jurors' sense of reasonable penalties in cases with no earmarks of exceptional blameworthiness within the punishable spectrum (cases like this one, without intentional or malicious conduct, and without behavior driven primarily by desire for gain, for example) and cases (again like this one) without the modest economic harm or odds of detection that have opened

factors should enter, and to what extent, is not specified. The guidance focuses primarily on the 1:1 punitive damages ratio.

The 1:1 ratio has begun to be adopted by other courts as the appropriate guide for determining the upper limit on punitive damages awards. For example, the Third Circuit ordered a 1:1 ratio in a medical liability insurer case,⁷⁸ and the Sixth Circuit imposed a 1:1 upper ratio limit in an age discrimination case.⁷⁹ One would expect the Supreme Court's upper ratio limit to have profound effects because it provides a precise reference point for otherwise murky determinations. Notwithstanding the precision of the ratio approach, this Article will show that uniform application of such ratios to assess the appropriateness of a punitive damages award is fundamentally flawed.

Particularly for bodily injury cases, compensatory damages generally will not provide for an adequate level of deterrence. To achieve efficient deterrence levels for injury cases involving catastrophic harm to individual welfare, such as wrongful death, it will often be necessary to impose damages amounts that generate punitive damages ratios in excess of 1:1, as with the ratio of 5.43:1 in the illustrative example in Part V. Indeed, the ratio amount is not the main matter of interest. The nature and the extent of the harm surely are consequential, but compensatory damages alone may not reflect the extent of the harm. What is pertinent for purposes of deterrence is not the punitive damages ratio but the total amount of damages, including losses that may not have been monetized through compensatory damages. For purposes of assessing these total damages, we have presented a formula that is more precise than the various upper bounds on permissible ratios and will also generate incentives for efficient levels of deterrence. If other considerations enter, such as a low probability of detection or a retribution objective, then the appropriate level of damages payments may be even greater.

VII. EMPIRICAL EVIDENCE ON PUNITIVE DAMAGES BY CASE TYPE

To explore how punitive damages awards currently vary by case type and with respect to the composition of damages, our empirical analysis uses data from the Civil Justice Survey of State Courts ("CJSSC") 2005.⁸⁰

the door to higher awards.").

78. *Jurinko v. Med. Protective Co.*, 305 F. App'x 13, 27–30 (3d Cir. 2008).

79. *Morgan v. N.Y. Life Ins. Co.*, 559 F.3d 425, 441–43 (6th Cir. 2009).

80. The description of the CJSSC data and the data used in the empirical analysis is based on the

The CJSSC provides cross-sectional data for a nationally representative sample of tort, contract, and real property cases tried to verdict in selected counties in state courts for the year 1992 (jury trials only),⁸¹ and for the years 1996, 2001, and 2005 (both jury and bench trials).⁸² In each available year, the survey collected data on total compensatory damages awards (if any) and, when relevant, punitive damages awards.⁸³ In 2005, for the first time, the survey separately reported total compensatory, economic, and noneconomic damages awards.⁸⁴ We therefore use the 2005 data to examine whether the components of compensatory awards, rather than simply the total compensatory awards, affect punitive damages awards, and whether the relationships between specific components of compensatory damages and punitive damages differ according to whether the case involves bodily injury or not.

Department of Justice's description of the study. See CJSSC 2005: Codebook, *supra* note 11.

81. See Bureau of Justice Statistics, U.S. Dep't of Justice, Civil Justice Survey of State Courts, 1996: Description, at ii (Sept. 18, 2000), available at <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/2883?archive=ICPSR> [hereinafter CJSSC 1996: Description] (noting that the 1996 study expanded on the 1992 study by including both bench and jury trials).

82. The sampling frame is a two-stage stratified sampling process. For the 1992, 1996, and 2001 waves of data, the following sampling frame was used: In the first stage, the seventy-five most populous counties were identified. In the second stage, forty-five or forty-six of these counties were selected for inclusion in the study. See Bureau of Justice Statistics, U.S. Dep't of Justice, Civil Justice Survey of State Courts, 1992: Description, at iii (Oct. 1, 1996), available at <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/6587?archive=ICPSR> (sampling forty-five counties); CJSSC 1996: Description, *supra* note 81, at ii (sampling forty-five counties); Bureau of Justice Statistics, U.S. Dep't of Justice, Civil Justice Survey of State Courts, 2001: Description, at iii (May 28, 2004), available at <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/3957?archive=ICPSR> (sampling forty-six counties). For the 2005 wave of data, the survey preserved the earlier sampling frame by sampling forty-six counties from the seventy-five most populous counties, but also sampled from 110 additional counties outside the seventy-five most populous counties. See CJSSC 2005: Codebook, *supra* note 11, at 10–12; Bureau of Justice Statistics, U.S. Dep't of Justice, Civil Justice Survey of State Courts, 2005: Description, at ii–iv (Jan. 14, 2009), available at <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/23862?archive=ICPSR&q=23862> [hereinafter CJSSC 2005: Description]. The total number of cases included in the 2005 sample was 8872. CJSSC 2005: Codebook, *supra* note 11, at 6.

83. See CJSSC 2005: Description, *supra* note 82, at ii–iv. For articles using the first three waves of the CJSSC data, see generally 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) (analyzing CJSSC 1992, 1996, and 2001 studies); Joni Hersch & W. Kip Viscusi, *Punitive Damages by Numbers: Exxon Shipping Co. v. Baker*, 18 SUP. CT. ECON. REV. (Ilya Somin & Todd J. Zywicki eds., forthcoming 2010) (discussing the *Exxon Shipping* Court's use of 1992, 1996, and 2001 data); Joni Hersch & W. Kip Viscusi, *Punitive Damages: How Judges and Juries Perform*, 33 J. LEGAL STUD. 1 (2004) (using CJSSC 1996 data to demonstrate that juries and judges differ in awarding punitive damages); and Thomas H. Cohen, U.S. Dep't of Justice, *Punitive Damage Awards in Large Counties, 2001* (Mar. 2005) (analyzing CJSSC 2001 data).

84. See CJSSC 2005: Codebook, *supra* note 11, at 11 (describing variables for the various different damages figures).

For purposes of the following analysis, we make the following sample restrictions: (1) the winning party is the plaintiff, and (2) the plaintiff is awarded positive punitive damages and positive compensatory damages. There are 180 cases meeting these criteria. Of these, fifty-four involve bodily injury, and 126 do not involve bodily injury.⁸⁵

In twenty-four of the 180 punitive damages cases, information on the breakdown between economic and noneconomic damages is not reported. As our main interest is in examining the relationship between components of compensatory damages awards and punitive damages, most of our analyses are based on the 156 cases reporting the breakdown. Of these, forty-four involve bodily injury, and 112 do not involve bodily injury.

Table 1 summarizes the average damages amounts for different case categories, as well as the average punitive damages ratio for the full sample, and by whether or not the case involved bodily injury.⁸⁶ The reported values are adjusted to account for the sample weights.⁸⁷

Panel A reports the results for the full sample of 156 cases with positive values of punitive damages. On average, the economic damages are \$1.04 million, the noneconomic damages are \$0.25 million, and the punitive damages are \$1.67 million. The average of the punitive damages ratios across all cases is 3.67:1, which is substantially higher than the 1:1 guideline in *Exxon Shipping*, but well within the single-digit guideline in *State Farm*.⁸⁸

85. Cases not involving bodily injury will also be referred to as property damage cases.

86. The authors' calculations come from CJSSC 2005. The sample is comprised of cases in which the plaintiff won, punitive damages were awarded, compensatory damages were greater than zero, and the breakdown of compensatory damages into economic damages and noneconomic damages was reported. The numbers of observations are as follows: 156 (panel A), 44 (panel B), and 112 (panel C). In the 2005 CJSSC data set, case type is reported in twenty-six categories. See CJSSC 2005: Codebook, *supra* note 11, at 21–22. We group case types into the eleven categories reported in the table. See *infra* tbl.1.

87. The weights are built into the CJSSC study to account for the sample not being a simple random sample. See CJSSC 2005: Codebook, *supra* note 11, at 13.

88. Note that the average ratio figures pertain to the average value of the individual punitive damages ratios across all cases, which does not equal the value of the average punitive damages award divided by the average value of compensatory damages.

TABLE 1. Damages Values by Case Type

<i>Case Type</i>	<i>Average Economic Damages (Dollars)</i>	<i>Average Noneconomic Damages (Dollars)</i>	<i>Average Punitive Damages (Dollars)</i>	<i>Average Punitive Damages Ratio</i>
Panel A: Full Sample				
Motor Vehicle Tort	1,132,183	942,728	518,753	1.00
Premises Tort	584,856	0	877,778	1.51
Products Liability	317,901	4,250,000	2,000,000	0.44
Intentional Tort	237,497	179,101	246,918	1.47
Malpractice	3,563,173	756,040	6,775,982	2.90
Slander	1,314,081	479,647	1,440,264	2.56
Other Tort	3,050,744	950,741	6,364,211	1.84
Fraud	289,531	22,346	404,355	7.71
Seller-Buyer	61,329	2895	156,858	3.71
Employment	2,922,965	307,187	6,095,789	1.18
Other Contracts	2,495,639	362	6,467,090	4.95
<i>All Cases</i>	1,039,521	253,680	1,673,952	3.67
Panel B: Bodily Injury Cases				
Motor Vehicle Tort	2,255,262	993,144	543,084	1.00
Premises Tort	584,856	0	877,778	1.51
Products Liability	317,901	4,250,000	2,000,000	0.44
Intentional Tort	258,455	190,639	233,006	0.91
Malpractice	2,356,768	887,526	5,345,718	3.16
Other Tort	4,203,089	1,665,010	6,513,569	2.09
<i>All Cases</i>	1,542,899	713,488	1,285,506	1.18

Panel C: No Bodily Injury Cases				
Motor Vehicle Tort	13,867	75,000	100,000	1.13
Intentional Tort	25,708	62,500	387,500	7.15
Malpractice	10,500,000	0	15,000,000	1.43
Slander	1,314,081	479,647	1,440,264	2.56
Other Tort	1,528,005	6888	6,166,844	1.51
Fraud	289,531	22,346	404,355	7.71
Seller-Buyer	61,329	2895	156,858	3.71
Employment	2,922,965	307,187	6,095,789	1.18
Other Contracts	2,495,639	362	6,467,090	4.95
<i>All Cases</i>	849,352	79,972	1,820,701	4.61

There is considerable heterogeneity across case types in the level of damages and in the punitive damages ratio. Some case groupings, such as fraud cases and contract cases involving sellers or buyers, have total damages amounts that are relatively small and far below the average for all punitive damages cases. These case groupings, however, have somewhat large average punitive damages ratios: 7.71:1 for fraud and 3.71:1 for seller-buyer cases. Other case types with large average punitive damages ratios include other contracts, with a ratio of 4.95:1; malpractice, with a ratio of 2.90:1; and slander, with a ratio of 2.56:1.⁸⁹

Panels B and C of table 1 stratify the full sample of cases with positive punitive damages into two groups—panel B reports descriptive statistics for the subset of cases involving bodily injury, while panel C summarizes the statistics for the subset of cases involving no bodily injury. As a consequence, any case type where there is no bodily injury, such as slander, does not appear in panel B. Compared to the cases without bodily injury, the bodily injury cases have, on average, a greater share of noneconomic damages as compared to punitive damages. In addition, both the average amount of punitive damages and the average punitive damages ratio are less for bodily injury cases than for cases without bodily injury.⁹⁰ If punitive awards for personal injury cases are to deter irreplaceable health

89. See *supra* tbl. 1, panel A.

90. See *supra* tbl. 1, panels B & C.

losses, one might have expected a larger role for punitive damages in the bodily injury context. The observed differences could be due to state legislative restrictions on punitive damages awards in bodily injury cases, or to the fact that the economic loss is a more accurate reflection of the harm in property damage cases.

As indicated in panel C of table 1, for the most part, noneconomic damages do not play a substantial role in cases without bodily injury. The main exceptions are slander and employment cases.⁹¹ The economic damages amounts and the punitive damages amounts, however, can be quite large. Five of the nine property damage case types have average punitive damages of at least \$1 million. Every property damage case type has an average punitive damages ratio of at least 1:1, and several categories have fairly high ratios, such as fraud and intentional tort.⁹² To the extent that these case types involve behavior that is viewed as malicious or particularly egregious, it may be that even large ratios such as these would not be inconsistent with the guidelines provided by the Supreme Court in *Exxon Shipping*.⁹³

To see whether there is a shortfall in punitive damages for bodily injury cases from the standpoint of deterrence, it is instructive to focus on punitive damages cases in which there was a claim of wrongful death. Here we focus on two extreme wrongful death cases from the 2005 CJSSC.⁹⁴ These cases will be useful in illustrating how the VSL figure can be used to assess the adequacy of the punitive damages award. In each instance, we assume that the probability of detection is 1.0.

At the low end of the awards spectrum is an intentional tort case involving wrongful death, with compensatory damages of \$118,000 and punitive damages of \$82,000. Thus, the punitive damages ratio in this case is 0.69:1, which is well within the single-digit ratio of *State Farm*, and indeed is well within the 1:1 ratio of *Exxon Shipping*. There is a problem, however, of substantial underdeterrence. Based on our proposal, let us assume that \$9 million is the pertinent VSL for optimal deterrence.⁹⁵ Then, for total damages to equal the VSL,⁹⁶ the punitive damages award should

91. See *supra* tbl.1, panel C.

92. See *supra* tbl.1, panel C.

93. See *supra* notes 74–77 and accompanying text.

94. The data set includes a total of seven wrongful death cases with positive punitive damages awards, of which three are intentional torts, three are medical malpractice, and one is a motor vehicle tort.

95. See *supra* Part II.

96. See *supra* Part III.

be increased to \$8.882 million, generating a punitive damages ratio of 75.27:1.

The largest punitive damages award for a wrongful death case in the 2005 CJSSC data set is \$18 million in a medical malpractice case. The compensatory damages award in this case was \$1.481 million. Because this compensatory damages value is suggestive of a typical wrongful death victim rather than one with unusually high earnings, using a VSL of \$9 million may be appropriate.⁹⁷ An efficient deterrence level consequently would result from a punitive damages award of \$7.519 million, far less than the \$18 million that was levied.⁹⁸ The actual punitive damages award in this case, at a ratio of 12.15:1, also exceeds the single-digit punitive damages ratio guidelines.

VIII. MULTIPLE REGRESSION ANALYSIS OF PUNITIVE DAMAGES

How do economic and noneconomic damages amounts affect the level of punitive damages awarded? If punitive damages are set in the same manner as the U.S. Supreme Court has conceptualized the task, then it is the ratio of punitive damages to total compensatory damages that is the determining consideration. Under such an approach, the components of compensatory damages do not enter the calculation. Under this approach, economic and noneconomic damages should have equal roles in influencing the punitive damages amount. Whether there is such equivalence can be evaluated statistically using the CJSSC data.

Our hypothesis is that economic and noneconomic damages will not have equal roles in influencing the punitive damages amount and that the influence of economic and noneconomic damages will differ according to whether the case involves bodily injury or not. The irreplaceable harm in severe bodily injury cases goes beyond the monetary compensation for noneconomic loss.⁹⁹ The size of the noneconomic loss component may serve as a measure of the physical harm, as bodily injury cases with larger noneconomic damages components are presumably those in which the

97. For example, this does not appear to be a case with extraordinarily large medical expenses or a case in which the present value of the net earnings loss is extremely large. Complications such as these would warrant an adjustment in the target VSL level.

98. The authors' proposed \$7.519 million punitive damages award would yield a punitive damages ratio of 5.08:1, well within the single-digit punitive damages ratio guidelines.

99. This relationship follows from the fact that severe bodily injuries lower the marginal utility of income and hence the degree to which money can compensate for the welfare loss. *See supra* notes 7–8 and accompanying text.

noneconomic harm is greater. Thus, one might expect empirically that across all bodily injury cases, higher levels of noneconomic damages in turn will boost the level of punitive damages.¹⁰⁰

To explore these relationships, we estimate a multiple regression model specifying a simple linear relationship between punitive damages and the compensatory damages components. Thus, $\text{Punitive Damages} = \text{Constant} + (b \times (\text{Economic Damages})) + (c \times (\text{Noneconomic Damages})) + \text{Error Term}$, where the constant term and the coefficients b and c are estimated. The coefficients have a straightforward interpretation—on average, each additional dollar of economic damages raises punitive damages by $\$b$, and similarly, on average each additional dollar of noneconomic damages raises punitive damages by $\$c$. In this linear version, if b and c are identical, then each dollar of economic damages has the same effect on punitive damages as each dollar of noneconomic damages. This equivalence is the assumption underlying the use of punitive damages ratios as a reference point.

The statistical analysis of each of these equations will be undertaken for the full sample of punitive damages cases, as well as separately for cases involving bodily injury and cases not involving bodily injury.¹⁰¹ Our hypothesis is that the noneconomic damages variable will have a greater effect on punitive damages for bodily injury cases, as these noneconomic damages likely serve as a measure of the irreplaceable health loss that is incurred.

Table 2 reports the three punitive damages regressions.¹⁰² The results for punitive damages cases in general indicate that each damages component has a similar incremental effect. On average, each additional dollar of economic damages raises punitive damages by \$1.19 for the full

100. Note that based on our proposed theory of punitive damages, if the level of harm is held constant and restricted to wrongful death cases, then higher levels of noneconomic damages should reduce the level of punitive damages that are required for the total damages amount to equal the VSL.

101. Tests for influential observations indicated that the four observations in the sample with compensatory damages greater than \$25 million were influential and that inclusion of these observations distorted the relation between damages components and punitive damages. Thus, we drop these four observations from the regression analysis. "An observation is said to be influential if removing the observation substantially changes the estimate of coefficients." UCLA Academic Technology Services, *Stata Web Books: Regression with Stata*, <http://www.ats.ucla.edu/stat/stata/webbooks/reg/chapter2/statareg2.htm> (last visited Nov. 3, 2009).

102. The authors' calculations come from CJSSC 2005. The sample is comprised of cases in which the plaintiff won, punitive damages were awarded, compensatory damages were greater than zero and less than \$25 million, and the breakdown of compensatory damages into economic damages and noneconomic damages was reported. Robust standard errors are in parentheses and are based on probability weights using the variable "BWGT0."

sample punitive damages regression, and each additional dollar of noneconomic damages boosts punitive damages by \$1.14.¹⁰³ The Supreme Court's reasoning in terms of a punitive damages ratio in which economic damages and noneconomic damages values are combined into a compensatory damages amount with equal weights is broadly consistent with this award pattern.

TABLE 2. Punitive Damages Regressions—Dependent Variable: Punitive Damages Amount

	<i>Full Sample</i>	<i>Bodily Injury</i>	<i>No Bodily Injury</i>
Economic Damages	1.194** (0.457)	0.585** (0.036)	2.158** (0.616)
Noneconomic Damages	1.144** (0.438)	1.500** (0.547)	1.145** (0.254)
Constant	0.376×10^6 ** (0.162×10^6)	0.229×10^6 * (0.122×10^6)	0.112×10^6 (0.108×10^6)
R ²	0.48	0.57	0.68
N	152	42	110

* significant at the 10 percent level, ** significant at the 5 percent level, two-tailed test

Focusing on the full sample regression masks the quite different processes that govern the setting of punitive damages awards for bodily injury cases and property damage cases. For cases involving bodily injury, the magnitude of the relation between noneconomic damages and punitive damages is nearly three times the relation between economic damages and punitive damages. On average, each additional dollar of noneconomic damages boosts punitive damages by \$1.50, while each additional dollar of economic damages boosts punitive damages by \$0.59.¹⁰⁴

The opposite pattern is exhibited for cases not involving bodily injury—each additional dollar of economic damages raises punitive damages by \$2.16, while each additional dollar of noneconomic damages raises punitive damages by \$1.15. For property damage cases, economic damages affect punitive damages more than noneconomic damages.¹⁰⁵

These findings have three principal ramifications for the Supreme Court's focus on punitive damages ratios. First, the current process for

103. *See infra* tbl.2.

104. *See supra* tbl.2.

105. *See supra* tbl.2.

setting punitive damages is not driven by a symmetric markup of economic damages and noneconomic damages, as would be observed if the concern of juries and judges was simply with establishing a ratio of punitive damages to compensatory damages rather than taking into account the components of damages. Second, for bodily injury cases, the greater influence of noneconomic damages than economic damages on the amount of punitive damages is consistent with what might be expected from the standpoint of an economic theory of deterrence. Compensatory damages do not provide fully adequate deterrence in bodily injury cases, and boosting punitive damages based on the noneconomic damages amount is consistent with providing adequate deterrence. That noneconomic damages have a larger estimated effect on punitive damages for bodily injury cases than for property damage cases is also consistent with this optimal deterrence approach. Third, the relatively larger role of economic damages in driving the punitive damages amount for property damage cases is not consistent with a deterrence hypothesis, as economic damages and noneconomic damages should have a symmetric effect if losses have been converted to equivalent financial terms.

These results are consistent with an alternative hypothesis for the way in which punitive damages awards are being set. The observed pattern may have little to do with attempts to foster optimal deterrence and may be attributable to a framing effect. The relatively greater influence of noneconomic damages in bodily injury cases and economic damages in property damage cases suggests that the damages component that is more central to the character of the loss has the greater effect on punitive damages. Thus, one can view the setting of punitive damages as being influenced by a framing effect, whereby the damages determination process is structured in terms of the damages component that looms largest in the particular case. What we do not observe is a process that is consistent with the conceptualization of appropriate punitive damages amounts in terms of punitive damages ratios. Economic and noneconomic damages are not being summed with equal weights and then used to calculate punitive damages based on some target punitive damages ratio.

IX. CONCLUSION: PUNITIVE DAMAGES TO ESTABLISH DETERRENCE FOR CASES OF WRONGFUL DEATH

The task of establishing appropriate levels of deterrence in punitive damages contexts involving wrongful death is quite well defined, despite the nonmonetary aspect of the loss. The approach that should be taken to establish the damages formula, however, is different from that for cases

involving property losses. Compensatory damages for wrongful death will not make the victim “whole,” whereas monetary compensation will suffice for property losses. Also, using the VSL as a compensatory damages measure will not make the deceased indifferent to death and will create problems of excessive insurance and compensation when punitive damages are not warranted. Quite simply, property loss cases and wrongful death cases are not symmetric and require different punitive damages formulations.

Our proposal establishes the correct deterrence incentives by adjusting the value of punitive damages while leaving the current compensatory damages practices unchanged. The challenge for punitive damages then is to address the shortfall in damages to establish appropriate levels of deterrence. This deterrence role can be formalized by applying the VSL, thus establishing a concrete, well-defined procedure for setting punitive damages.

The resulting punitive damages amount may fail the commonly applied ratio tests for reasonable punitive damages. The ratios of punitive damages to compensatory damages may exceed 1:1 and may even go beyond single digits. Compensatory damages and punitive damages have quite different roles to play, and particularly in cases involving wrongful death, the compensatory components of the loss do not capture the extent of the harm or the financial incentives that are needed to deter similar wrongful conduct in the future.

That punitive damages ratios are not meaningful in this context does not imply that the courts are bereft of quantitative guidelines. The estimates of the VSL provide a reference point for assessing the pertinent level of damages. Rather than focusing on the ratio of punitive damages to compensatory damages as the principal criterion, however, the emphasis instead should be on the sum of punitive damages and compensatory damages and how this amount relates to the VSL.