

The Flawed Hedonic Damages Measure of Compensation for Wrongful Death and Personal Injury

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I. Introduction

How life is valued depends on the context in which the valuation is done and the purpose of the valuation. A substantial economics literature has framed value-of-life issues in terms of tradeoffs between money and small risks of death, or the value of statistical life. This article is concerned with the use of the value of statistical life (VSL) measure in liability contexts, either in determining damages or assessing liability in personal injury cases.¹ The main battleground is with respect to the use of VSL numbers for compensation, based on an approach known as hedonic damages. Although the controversy with respect to adopting VSL measures for compensation purposes in wrongful death cases is not new, some very distinguished scholars have endorsed an expanded use of the VSLs in the courtroom.² The fundamental issue continues to be whether the legal system should adopt regulatory policy practices for risk prevention and use the VSL as the measure of the welfare loss of a fatality for purposes of risk compensation. The refinement of VSL estimates in the literature to reflect values across the population makes it increasingly important to understand when and how these values should be used.

The question of what is the right value of life cannot be answered in the abstract. The correct value will depend on the purpose to which it is being put. This distinction is not simply with respect to which party is using the VSL—in particular, whether the value is being used by the government or by the judicial system. For both the government and the courts, there are different contexts in which there might be consideration of value-of-life estimates, with the chief areas being compensation and valuation of the reduction of the risk of personal injuries for benefit assessment. As I will indicate, the VSL serves a constructive, but highly circumscribed function both in formulating government policy and in personal injury cases. The traditional measures of economic damages also serve a valuable economic role and should remain the approach used in setting compensatory damages.

The discussion in Section II outlines the basics of the VSL methodology. Section III reviews the principles underlying conventional personal injury damages approaches, and Section IV presents a model of optimal deterrence. In Section V I examine the recent proposal by Posner and Sunstein (2005) to

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¹For an excellent selection of perspectives on this issue, see Ireland and Ward (1996).

²See Posner and Sunstein (2005).

provide for damages to wrongful death victims that will include, but not be limited to, the VSL for the individual. Section VI explores other attempts to form a bridge of the VSL amounts with indices of happiness and disability. Section VII concludes with a summary of the flawed nature of many attempts to use VSL estimates in the courtroom.

II. VSL Basics and Current Practices

A useful starting point is to review the essential elements of the VSL approach and the current use of VSL by government agencies.³ Doing so highlights what this measure is and what it is not. In framing the subsequent discussion of hedonic damages, it is instructive to compare VSL in the courtroom with current usage of the VSL by the government, as well as the purposes for which VSL is not used at all by the government.⁴

A. The Value of Statistical Life Concept

The VSL is the value of a statistical life, or the rate of tradeoff between risk and money for small risks of deaths. For labor market studies, which comprise most of the VSL literature, the VSL represents the compensating wage differential, or the willingness-to-accept amount that workers receive for facing job fatality risks. The risk levels involved are quite small, as occupational fatality risks currently average 1/25,000 annually for a typical worker. Estimates of VSL from product markets and housing markets pertain to the willingness-to-pay amounts for marginally safer products or houses. For small risk changes, the tradeoff rates implied by the willingness to pay for small risk reductions and willingness-to-accept amounts for small risk increases will be the same. Each will imply the same VSL. Based on labor market evidence, the current median VSL estimate in the literature is about \$7 million.

Consideration of large risks necessitates a modification of the VSL amount. The VSL will overstate how much people will pay to avoid the certainty of death because the cost of purchasing large decreases in the risk lowers one's wealth and reduces the willingness-to-pay amount below the VSL. Analogously, the VSL will understate how much people must be compensated to face a series of increases in fatality risk that culminate with certain death. Similarly, for large changes in risk levels such as a fatality risk of 1/10, the VSL reference point understates how much people must be compensated to bear the risk and overstates how much they will be willing to pay to eliminate such a risk.

It is not appropriate to divide the VSL by the number of years of life to obtain the dollar amount that each year of life is worth. While it is possible to calculate a value of a statistical life year (VSLY) derived by dividing the VSL by the discounted numbers of years of remaining life, the VSLY methodology makes the strong assumption that each year of life has the same value. Nevertheless, the VSLY measures do have a role to play in the economics literature

³For a more complete exposition of the VSL approach, see Viscusi (1992) and Viscusi and Aldy (2003).

⁴My discussion draws on the VSL literature, which is a well established field of economics. Miller (2008), in this issue, also emphasizes the scientific integrity of the VSL literature.

with respect to estimating individual discount rates with respect to the expected duration of life. The VSLY numbers also may be useful in imputing a VSL for retirees and other groups for which a VSL has not been estimated reliably.

B. Government Practices for Valuing Risks to Life

The use of VSLs by the government has become widespread since a quarter century ago when I introduced the use of VSLs to government policy in 1982.⁵ At that time I had been called in to settle the dispute between the Occupational Safety and Health Administration (OSHA) and the U.S. Office of Management and Budget (OMB) over the economic merits of the proposed OSHA hazard communication regulation. OMB challenged the regulatory proposal because the calculated benefits did not exceed the costs. In assessing the value of the benefits, I used VSL levels to value the benefits of fatalities that would be prevented by the regulation rather than OSHA's approach based on the present value of lost earnings and medical costs. Doing so turned a regulation that failed a benefit-cost test into an economically attractive regulation by boosting benefits by an order of magnitude. Other agencies soon adopted this methodology, perhaps not simply because of its economic soundness, but also because the use of VSLs made the calculated benefits of government policies much greater than they were before. The use of VSLs to value lives in personal injury cases similarly offers the prospect of considerably larger damages amounts, but unlike the government usage in regulatory analysis to value the prevention of statistical deaths, hedonic damages compensate plaintiffs after a certain death. These functions are quite different.

The choice of the VSL number used by Federal government agencies to value regulatory effects has not been uniform. As the statistics in Table 1 indicate, some agencies, such as the Federal Aviation Administration (FAA), use very low values of life, whereas others such as the U.S. Environmental Protection Agency (EPA), now use values in excess of \$6 million and are more in line with recent labor market evidence on VSL. In 2008 a controversy developed as the EPA air office began to use a VSL estimate that was lower than the value used by the EPA water office, so that even within agencies discrepancies may exist. The differences across agencies appear to stem largely from organizational differences and the anchoring effects of previous practices. The U.S. Department of Transportation agencies, such as the Federal Aviation Administration (FAA), had long used the relatively lower value of compensation in court cases involving wrongful death when assessing damages. These agencies have adjusted the values upwards to get closer to estimated VSL levels, but the transportation agencies have not adjusted the values of life to a sufficient extent.

The main implication of Table 1 for what follows is that there is no official "government number" for the value of statistical life. Suggesting that the courts should follow the practices of the government does not lead them to a well-defined VSL approach because agencies differ widely in the values that they use.

⁵The details of this analysis are reported in Viscusi (1992).

Table 1
 Values of Statistical Life Used by U.S. Regulatory Agencies, 1985-2000

Year	Agency	Regulation	Value of a Statistical Life (millions, 2000 \$)
1985	Federal Aviation Administration	Protective Breathing Equipment (50 Federal Register 41452)	\$1.0*
1985	Environmental Protection Agency	Regulation of Fuels and Fuel Additives; Gasoline Lead Content (50 FR 9400)	\$1.7
1988	Federal Aviation Administration	Improved Survival Equipment for Inadvertent Water Landings (53 FR 24890)	\$1.5*
1988	Environmental Protection Agency	Protection of Stratospheric Ozone (53 FR 30566)	\$4.8
1990	Federal Aviation Administration	Proposed Establishment of the Harlingen Airport Radar Service Area, TX (55 FR 32064)	\$2.0*
1994	Food and Nutrition Service (USDA)	National School Lunch Program and School Breakfast Program (59 FR 30218)	\$1.7, \$3.5*
1995	Consumer Product Safety Commission	Multiple Tube Mine and Shell Fireworks Devices (60 FR 34922)	\$5.6*
1996	Food Safety Inspection Service (USDA)	Pathogen Reduction; Hazard Analysis and Critical Control Point Systems (61 FR 38806)	\$1.9
1996	Food and Drug Administration	Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents (61 FR 44396)	\$2.7*
1996	Federal Aviation Administration	Aircraft Flight Simulator Use in Pilot Training, Testing, and Checking and at Training Centers (61 FR 34508)	\$3.0*
1996	Environmental Protection Agency	Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities (61 FR 45778)	\$6.3
1996	Food and Drug Administration	Medical Devices; Current Good Manufacturing Practice Final Rule; Quality System Regulation (61 FR 52602)	\$5.5*
1997	Environmental Protection Agency	National Ambient Air Quality Standards for Ozone (62 FR 38856)	\$6.3
1999	Environmental Protection Agency	Radon in Drinking Water Health Risk Reduction and Cost Analysis (64 FR 9560)	\$6.3
1999	Environmental Protection Agency	Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements (65 FR 6698)	\$3.9, \$6.3
2000	Consumer Product Safety Commission	Portable Bed Rails; Advance Notice of Proposed Rulemaking (65 FR 58968)	\$5.0*

*The published summaries of the regulatory impact analyses for these rules do not specify the year in which the reported dollars are denominated. We have assumed that the dollar year corresponds to the date of rule publication for purposes of converting all values into 2000 dollars. Note that the CPSC reported a VSL of \$5 million in both its 1995 and 2000 regulations; the difference in values reflects our deflating to 2000 dollars.

Source: Viscusi and Aldy (2003).

What government agencies have in common is that the VSL numbers are only used to value the prevention of small risks of death and are never used for compensation purposes. Even if there were a consensus government VSL number, using such a measure in the courtroom for compensatory damages purposes would be out of line with government practices. There is a fundamental mismatch of the government's VSL approach with using these numbers to set levels of compensation for wrongful death and personal injury.

Unlike court cases that pertain to specific individuals, government policies usually affect broad population groups so that using an average VSL amount is appropriate. If the protected populations have risk-money tradeoffs that are similar to the tradeoff rates reflected in VSL studies, then there is little error that arises from using average values. Government agencies invariably use the same VSL to value a policy whether those protected are disproportionately young or old, sick or healthy, or involuntarily exposed to risk or voluntarily choosing the risk. Plaintiffs' experts who use the VSL numbers in their hedonic damages analyses generally have used average VSL numbers as well, which is inconsistent with the importance of linking personal injury damages to the facts of the case.

There was a recent attempt by the government to depart from the lockstep approach of using the same VSL irrespective of the population mix being protected. In the EPA's analysis of the proposed Clear Skies Act, it valued the lives of senior citizens over 70 years of age at 37% less than the values used for younger age groups. This 2003 analysis created a political firestorm.⁶

But was EPA correct in asserting that the proper VSL does decline with age? The older you are, the less life you have left. But a reduced life expectancy doesn't mean your VSL has declined. The balance that people strike between money and risk may remain stable or even rise with age as their wealth and personal consumption increase.

In a series of recent papers, my colleagues and I have estimated the VSL-age relationship, which follows an inverted-U pattern not unlike the trajectory of lifetime consumption.⁷ This empirical relationship contradicts approaches that assume a constant value per life-year, because if each life-year did in fact have the same value then the VSL would be a steadily declining function of one's age. Although VSL levels eventually do decline with age, the VSL for a 60-year-old is greater than that of a 20-year-old, implying that remaining life expectancy is not the sole determining factor. Individual wealth and willingness to bear risk both vary with age so that over many decades VSL may increase with age even though you have fewer years to live.⁸

The existence of such empirical refinements in the heterogeneity of VSL is not restricted to age. Recent studies in which I have been involved have estimated variations in VSL by race, gender, and smoking status as well. Additional sources of heterogeneity will surely be documented in future studies,

⁶See "EPA Drops Age-Based Cost Studies," *New York Times*, May 8, 2003, and "Under Fire, EPA Drops the 'Senior Death Discount,'" *Washington Post*, May 13, 2003.

⁷For a review of these studies, see Aldy and Viscusi (2007).

⁸This result is consistent with the conjecture by Posner (1995) based on age differences in seatbelt usage.

making it possible to obtain a VSL number for a wide variety of demographic profiles. Such values could then be pertinent to the circumstances of a particular personal injury case if use of VSL estimates were justified in such contexts. But even if the problem of not having a VSL that can be linked to the facts of the case can be addressed more successfully than past hedonic damages analyses have done, there remains the fundamental issue that VSL numbers do not provide an appropriate basis for determining the level of compensation.

While the government uses VSL numbers to assess the prospective economic benefits of risk reduction policies, the government has never used these values for purposes of compensation. I have been involved as a consulting expert to the U.S. Department of Justice in several wrongful death cases involving the FAA in which the government was the defendant. The U.S. Department of Justice never raised the possibility of using VSL as the compensation measure and explicitly opposed hedonic damages when a plaintiff's expert adopted this approach.

The widely publicized compensation structure of the September 11th compensation fund likewise does not adopt the VSL for any purpose.⁹ The families of the victims of this terrorist attack received payments for their income loss as well as some pain and suffering compensation. While this compensation scheme had some controversial elements, such as the dollar values set for noneconomic loss and the deduction for collateral source payments, the overall thrust of the compensation scheme was in the general spirit of traditional wrongful death calculations, not VSL. When the government is faced with payment of compensation for wrongful death, VSL plays no role. It is dishonest to suggest, as some plaintiffs' experts have done, that the use of VSL for compensation in hedonic damages cases simply reflects government practices. It does not.

III. Traditional Damages Fundamentals for Compensation and Deterrence

A. The Components of Damages

The components of compensation in personal injury cases are quite standard, but are worth summarizing briefly to draw a comparison with the use of VSL numbers both for valuing the benefits of government regulation and for economic damages calculations. The two compensatory damages components are economic damages and noneconomic damages.¹⁰ There may be interest payments included in these components. If awarded, punitive damages are in addition to these awards components. Economic damages include the present value of the lost earnings for the accident victim, where this amount is reduced

⁹The principles that formed the basis of compensation are specified in September 11th Fund, 28 CFR § 104. See *Final Report of the Special Master for the September 11th Victim Compensation Fund of 2001*, Vol. I, 110 Table 12 (2004), online at http://www.usdoj.gov/final_report.pdf (visited December 12, 2007).

¹⁰Given the broad scope of economic analysis, these components should have been named more accurately as payments for "financial" loss and "nonfinancial" loss.

by the deceased's consumption in the case of a fatality. Some jurisdictions also deduct for taxes. Economic damages also may include other case-specific expenses, such as medical costs and rehabilitation expenses.

The economic damages component is pertinent to the financial loss to the individual, though in many cases the prospective economic loss is based on the average performance of one's demographic/occupational group. Because of the linkage to the injured party's earnings and expenses, the damages are individual-specific. People who earn less will receive lower damages for themselves or their heirs, whether the earnings gap is due to low education, few job skills, age, race, gender, or a decision not to work. Children and the retired will consequently fare particularly badly in terms of court awards, but they would receive a much larger payment based on VSL estimates, especially if these estimates make no adjustments for individual heterogeneity. The variations of economic damages with individual circumstances are widely accepted for economic damages calculations so that use of a uniform VSL level for all personal injury cases, as is often done in hedonic damages analyses, is inconsistent with this approach.

The underlying law and economics rationale for calculating economic damages based on financial harms is that these damages are pertinent to the insurance objective of compensation, which is to address the income loss associated with an accident or injury.¹¹ Thus, the task for setting these damages values is not to determine how much the person's well-being is worth to society or how much should be paid to prevent the injury, but rather what amount of compensation is needed to fully insure the income losses associated with the accident.

B. Noneconomic Damages and Insurance

Noneconomic damages also will vary based on the case characteristics, which will then provide for compensation for the pain and suffering of the accident victim and the grief and welfare loss to the family. Noneconomic damages extend beyond the financial harm. From an economic standpoint, one would only choose to insure such losses fully if the accident did not reduce the marginal utility of income. For example, risk-averse people will fully insure monetary losses if offered actuarially fair insurance. As I have shown for both fatal and nonfatal injuries that are comparable in severity to the typical job injury, serious accidents reduce the marginal utility of income.¹² Consider the thought experiment in which a person is free to structure insurance compensation after an accident subject to the constraint that the available insurance is purchased on an actuarially fair basis. The optimal insurance amount the person would select not only does not provide for noneconomic damages compensation above and beyond the value of economic loss, but may provide for less than full replacement of earnings if the accident reduces the marginal utility of income sufficiently. In the case of accidents whose severity is comparable to that of job

¹¹The twin objectives of insurance and deterrence are discussed in Spence (1977) and Viscusi (2000b).

¹²Viscusi (1996) provides extensive discussion and documentation of the pain and suffering empirical evidence.

injuries, my empirical estimates based on a survey of workers' valuation of job risks is that the optimal income replacement rate for work injuries is approximately 0.85, assuming that these benefits are not subject to taxation. Workers themselves would structure workers' compensation payments to provide for less than full income insurance because serious job injuries impede one's ability to derive welfare benefits from additional consumption. There is generally no rationale at all for noneconomic damages from the standpoint of optimal insurance if the accident reduces the marginal utility of money and the financial losses are fully addressed, net of all deductions from the award, such as legal fees.

Should noneconomic damages even be part of conventional damages measures, as they now are, and if so, how should they be set? For property damages, optimal insurance is the "make whole" amount because property losses do not alter the structure of utility functions. In contrast, it is not optimal for people to be fully compensated for pain and suffering damages that they have suffered due to a serious or fatal injury insofar as their marginal utility of money has declined as a result of such an injury. Very minor injuries, such as temporary hand burns, are tantamount to income losses and do not alter the marginal utility of income, whereas catastrophic injuries do. The reason why making accident victims whole after catastrophic losses is not optimal is that people generally will not wish to buy insurance to compensate themselves or their heirs fully for the noneconomic losses associated with accidents. Similarly, people do not purchase insurance to compensate for the grief that will result from the death of a spouse or child.¹³

Setting compensation for noneconomic damages based on the "make whole" amount also raises intractable issues for health losses. How much money do you need to make you indifferent from a utility standpoint to being healthy or becoming a quadriplegic? What is the value of a parent or spouse? Such thought experiments are surely not what guides jury behavior, nor would people generally choose to purchase enough insurance so that they wouldn't mind being disabled or having a spouse or parent die.

A more appropriate role for noneconomic damages is the compensation of claimants for the value of their attorney fees. Attorney fees constitute a form of economic damage or financial loss that is incurred in bringing the lawsuit, but because these costs are not included as part of standard economic damages components, the level of economic damages compensation will not be sufficient to cover the entire economic loss. If we assume a one-third contingency fee share, if people are awarded 1.5 times the value of the economic loss, then subtracting a third of this award will still leave them fully compensated for their economic harms, fully insuring their financial loss. In the absence of noneconomic damages payments, the economic damages value will not provide for full insurance. The value of noneconomic damages for products liability cases

¹³Of course currently, there is no opportunity for people to buy insurance for grief or pain and suffering because firms do not offer it. While the potential for moral hazard and the infeasibility of monitoring the extent of pain and suffering losses may have impeded the emergence of such an insurance market, my hypothesis is that if there were substantial consumer demand then insurance firms would offer such policies.

varies by injury type but often is in the range of about 40%. For medical malpractice cases, noneconomic damages are quite large, comprising 75% of total compensation for medical malpractice fatalities for adults.¹⁴ If in fact it is true that people would not purchase insurance for noneconomic damages, which is likely to be the case for severe injuries and death, then from an insurance standpoint, awards would be better structured if they could provide more reliably for the coverage of attorney fees rather than attempting to link the payment to the perceived noneconomic harms.

C. Noneconomic Damages and Deterrence

How insurance and deterrence functions relate to compensatory damages depends on the nature of the harm. If the losses are purely financial or are equivalent to financial losses in terms of how they enter the utility function, they consequently will not alter the structure of individual utility functions. Within the context of this financial equivalent world, optimal insurance of the loss also will generate incentives for optimal deterrence. However, these twin functions cannot be satisfied by any single damages payment in the case of personal injury cases that decrease the marginal utility of any given level of income.¹⁵ There will be an inevitable tradeoff between optimal insurance and efficient incentives if the only incentives for safety are generated by the tort liability payment.

For personal injury cases, I assume that punitive damages address the creation of incentives for optimal deterrence when there is a shortfall in deterrence and the legal criteria for awarding punitive damages are met. In setting the deterrence amounts, all financial incentives for safety that already exist should be taken into account. The usual conclusion that there might be a deterrence-related rationale for punitive damages often stems from an entirely tort-centric perspective with respect to the creation of incentives for the injurer to take care. What is not considered is that there are often other financial incentives that will alter behavior.¹⁶

How these societal forces function depends on the injury context. For risks involving a market exchange, these will be effects of accidents on people's willingness to buy dangerous products or work on risky jobs. Accidents involving strangers, such as most auto accidents, may lead to revision of a driver's insurance rates after an accident. For accidents involving strangers as well as those involving market exchanges, there are often incentives provided by government regulations, ranging from traffic tickets to regulatory sanctions.

Perhaps the best case scenario for market-based incentives involves well known product market risks. After major airplane disasters, consumers are reluctant to return to the affected airlines, often leading to significant price cutting.¹⁷ These adverse events will have stock market repercussions more generally, as investors lower their assessed value of the firm.¹⁸

¹⁴See Hersch, O'Connell, and Viscusi (2007).

¹⁵See Spence (1977) for the underlying theoretical model.

¹⁶The American Law Institute (1991) emphasizes the role of these diverse social institutions.

¹⁷USAir, in particular, engaged in substantial price cuts after its pair of airplane disasters in 1995.

¹⁸Estimates of the stock market effects of airplane crashes appear in Broder (1990).

Economists have estimated the VSL amounts implied by consumer purchases of used cars, smoke detectors, bike helmets, and other safety-related products, as these price effects represent market sanctions for dangerous products and a market premium for safe products. The market itself will provide for this compensation *ex ante*, which involves the same kinds of risk-money tradeoffs embodied in the labor market decisions generally used to estimate the VSL levels. Indeed, if people are fully cognizant of the risks, there is no rationale whatsoever from a deterrence standpoint to bolster these incentives through additional *ex post* compensation.

If people face continuous risk choices across the different domains of choice, they will equate the VSL levels across these different domains. The market itself will generate risk-money tradeoffs based on the VSL levels so that awarding hedonic damages in addition to economic and noneconomic damages will duplicate this function and create excessive incentives for safety. If, however, markets do not work perfectly or the accident does not involve a market context, the task of court awards will be to address the extent of the shortfall in incentives. This shortfall may not be complete. Even in the extreme case of environmental risks in which there is no market exchange with the potentially injured party, there may be market forces at work. Consumer boycotts of Exxon followed the Alaskan oil spill, and many companies have been the target of stock divestiture actions because of the perceived riskiness or perceived political incorrectness of their activities.

Product and labor markets are not the only market forces at work. Insurance markets come into play as well. Insofar as insurance premiums are experience-rated, firms and individuals with poor records of safety performance and with characteristics correlated with high risks will pay higher premiums, providing an incentive for safer behavior.

Another institutional actor that creates safety incentives is the government. Many government regulatory agencies are concerned with risks such as product safety, job safety, and environmental quality. In addition to imposing regulatory standards for future products and activities, these agencies can impose penalties on firms for hazardous products. They can also initiate recall actions with respect to these products. State and local government entities impose penalties on risky driver behavior and other risky actions as well.

Viewed more broadly, even if one restricts the role of tort awards to full insurance of the losses to accident victims, that does not mean that compensation levels based on optimal insurance will generate inadequate levels of deterrence. That judgment will depend on the entire set of incentives created by a wide variety of social institutions and not on the tort system alone.

IV. Optimal Damages for Deterrence

A. A Simple Deterrence Model

To see more formally why imposing damages equal to VSL may be excessive from a safety incentive standpoint, consider the following model. Suppose that L^* is the optimal deterrence economic incentive value needed to lead the corporation to select the efficient level of care. The value of L^* equals VSL

when the risk is that of a fatality. Let L be the expected damages payment paid by the company in the absence of punitive damages. This loss consists of two components, the first of which is the expected non-punitive liability cost M_1 . This value consists of the expected compensatory damages as well as any damages associated with administrative compensation schemes, such as workers' compensation. The second component of the loss imposed by the company consists of the expected incentives provided by institutions other than the courts, which I will designate by M_2 . Risks to workers will generate compensating wage differentials, and products perceived to be risky will command a lower price. There also may be sanctions imposed by government regulations when the corporate behavior violates formal regulatory guidelines. Thus, the total financial cost incurred by the company consists of two parts, which gives rise to the formulation that

$$(1) \quad L = M_1 + M_2 .$$

The focus here will be on the optimal value of punitive damages, which will be designated by D . In particular, when will it be appropriate to set D equal to VSL? If there are accident costs M_2 beyond the compensatory damages amount, there will be excessive deterrence provided by the compensatory damages amount if the courts adopt a hedonic damages approach and set M_1 equal to L^* . A tort-centric perspective generally will produce excessive deterrence, not simply an imbalance between the competing objectives of deterrence and insurance. Punitive damages will only have a potentially productive role if the legal criteria for awarding punitive damages are met and there is a positive spread between the deterrence values and actual losses imposed by the company, or

$$(2) \quad L^* - L > 0 .$$

If this inequality holds, one can establish appropriate incentives for deterrence by setting the punitive damages amount according to

$$(3) \quad D = L^* - L .$$

Note that whenever L is greater than zero, D is below the value of VSL. Thus, the essential trigger for there to be any beneficial role for punitive damages in any context is that there must be some gap between the optimal deterrence amount and the loss imposed on the company by compensatory damages and by parties other than the courts. Setting D equal to VSL will impose too great a penalty whenever $L > 0$, which includes all cases where compensatory damages are positive or other incentives are operative.

In general, there will not be a deterrence function of wrongful death awards since punitive damages seldom come into play, and it is compensation,

not deterrence, that is the main function of wrongful death awards.¹⁹ However, even if deterrence is a valued objective, because compensating tort victims according to their VSL will provide excessive insurance to accident victims, using these awards to satisfy simultaneously the economic objectives of deterrence and compensation is not feasible.

The main law and economics rationale for punitive damages is when there is a low probability of detection. For simplicity assume that the value of M_2 is zero. Let there be some compensatory damage amount m_1 that will be levied on the company with a probability s so that the expected liability cost M_1 is given by

$$(4) \quad L = M_1 = sm_1.$$

If the accident were tantamount to a monetary equivalent, then the compensatory damage amount would have established efficient incentives for deterrence if $s=1$. However, when there is an enforcement error so that there is some non-zero probability that the fine will not be imposed, then punitive damages can potentially eliminate this gap. Assuming that punitive damages will also be imposed with a probability s , one has the requirement that punitive damages will meet the gap between the expected compensatory damages and the optimal deterrence penalty provided that

$$(5) \quad L^* = s(m_1 + D).$$

or

$$(6) \quad D = (L^*/s) - m_1.$$

Put somewhat differently, the punitive damages amount equals the efficient deterrence damages value divided by the detection and enforcement probability, less the value of compensatory damages. The total of compensatory and punitive damages will establish efficient incentives for safety provided that they equal L^*/s , which is the well known result in the law and economics punitive damages literature.

B. Implications of the Model

To date, the U.S. Supreme Court has failed to adopt the economic formulation linking optimal punitive damages to enforcement error. In particular, in *State Farm v. Campbell* the court advocated a single digit upper limit for the ratio of punitive damages to compensatory damages but did not make reference to the law and economics solution.²⁰ More recently the Court recognized

¹⁹In practice experts who testify on hedonic damages are restricted to testifying with respect to compensatory damages rather than the values needed for deterrence. (Thomas Ireland, personal communication, Jan. 24, 2008.)

²⁰*State Farm Mut. Auto Ins. Co. v. Campbell*, 538 U.S. 408 (2003).

the potential relevance of a low probability of detection in *Exxon Shipping Co. v. Baker*.²¹ However, even if the Supreme Court were to fully embrace this approach, the setting of punitive damages at levels equal to or exceeding VSL could only arise as a reasonable approach if it were driven by a low probability of detection s . In the absence of a value of s below 1, the value of L should never exceed VSL from the standpoint of deterrence. Total damages, including punitive damages, should never exceed VSL. In addition, to the extent that the objective is to formulate a compensatory award based on optimal insurance of the victim's losses, VSL does not enter at all.

Why is excessive compensation problematic even from the standpoint of potential plaintiffs? Consider the products liability case in which a firm markets a risky product that poses the chance q of an accident with a liability cost V . Then on average for each unit of the product that is sold, the producer will incur a cost qV . The price of the product will increase by this amount, as the marginal costs of the product will include the expected tort liability costs. In effect, the consumer will be buying insurance for his or her death as part of the purchase price. Under a hedonic damages regime in which liability cost is set equal to VSL, the consumer will be purchasing an excessive amount of insurance, providing for an average of \$7 million in payoffs to one's heirs. Setting damages based on VSL amounts will force people to buy insurance that they don't value. In much the same way, for injuries to third parties, such as automobile accidents, setting wrongful death values based on VSL will force people to buy coverage that sets up a mechanism whereby the insured will be paying for policies in which their insurance company will compensate the victims by amounts that they do not value greatly. Assuming that drivers and potential victims are symmetrically situated in that they both must purchase auto insurance for when they are driving, neither would choose an insurance regime in which the VSL is the compensation amount.

There is, however, a constructive use for VSL numbers in liability contexts. In particular, in determining whether there is negligence with respect to striking a proper risk-utility balance, the VSL provides the appropriate reference point for the risk-cost balance.²² For concreteness consider the product safety case in which a firm has the option of investing in product safety that will reduce the fatality risks associated with the product. Suppose that this safety investment relationship is well behaved so that additional investments in product safety reduce the risk of the product but at a diminishing rate. Then the firm should continue to invest in product safety at least up to the point at which the marginal cost per expected life saved is VSL. Any amount short of this level is negligent, as VSL provides the yardstick for assessing whether the firm's investment in product safety is at the efficient level.

Whether a company will put itself at risk by undertaking a formal assessment of the costs and benefits of products is a different matter. Juries often have awarded substantial punitive damages in cases involving automobile risks that could have been eliminated but were not after the company concluded that the costs of safety exceeded the benefits. As I showed in a series of

²¹*Exxon Shipping Co. v. Baker*, 554 U.S. (2008).

²²This usage is a major theme in Viscusi (2000a, b).

jury experiments reported in Viscusi (2000a), even undertaking a proper risk analysis using VSL amounts does not immunize a company from jurors awarding punitive damages because of such an analysis. A remaining task for economists is to foster sound corporate risk analyses and at the same time promote responsible juror understanding of the importance of such assessments.

V. The Posner-Sunstein Proposal

The hedonic damages debate has been raised to a new level by two eminent legal scholars who have recently proposed the use of VSL estimates in setting damages in wrongful death cases. In particular, Eric Posner and Cass Sunstein (2005) propose that damages be calculated as the sum of two components: the hedonic loss to the victim and the harm to survivors. That their proposal is incompatible with my discussion is apparent from one of their summary statements regarding their approach: "What cannot be defended is the total exclusion of hedonic damages in wrongful death actions." (p. 590) In contrast, the point of view I have advocated here is that hedonic damages have no role to play in setting compensatory damages amounts. To assess the soundness of their proposal, it is instructive to consider each of the components of their damages calculation.

A. The Hedonic Loss Damages Component

The first damages component is what they call "the hedonic loss of the victim," which they indicate can be calculated in several ways. However one chooses to calculate the hedonic loss, the number Posner and Sunstein have in mind is the VSL. They preface their discussion with the observation that for the hedonic loss the tortfeasor should pay the amount R/q , where R is the amount that the victim would have been willing to pay to avoid the risk q . For fatalities, this amount is the VSL, or the tradeoff implied by the willingness to pay or willingness to accept some small risk q . The person-specific VSL is generally unobservable, which will create problems of implementation, but such practical concerns are dwarfed by the more fundamental aspects of their approach.

The authors indicate that hedonic damages should be used for "deterrence purposes," which presumably should restrict the use of such damages to punitive damages contexts or determining liability. However, the authors do not restrict their advocacy of hedonic damages to punitive damages situations but rather recommend that it be a routine component of wrongful death awards, for which deterrence seldom comes into play. Although deterrence is a stated objective for hedonic damages, Ireland's (2000) analysis of hedonic damages cases concluded that deterrence rarely enters as a concern in the legal decisions involving hedonic damages. As the theoretical framework discussed above indicated, basing damages payments on the VSL will lead to excessive deterrence, excessive insurance, an inefficient promotion of the two objectives of deterrence and insurance, and a liability structure that harms the interests

of consumers and other potentially injured parties whom their proposal is intended to protect.

After discussing their general advocacy of the use of the VSL approach for setting the hedonic damages component of wrongful death payments, Posner and Sunstein (2005) suggest two possible ways to set these values—reliance on government VSL numbers and jury determinations. The first method is to use the VSL amounts used by government agencies in valuing regulations. As indicated in the discussion of Table 1, these numbers are not uniquely determined but vary across agencies. The authors make reference to what they call the “standard \$6 million figure,” (p. 587) but there is nothing particularly standard about this number. EPA often uses this VSL amount, but other agencies do not. Moreover, government policies protect large populations *ex ante* rather than compensating specific individuals *ex post*. Looking to the government for the number does not solve the task of selecting the VSL. Even if a single government number existed, it would not vary with the facts of the case, nor would it serve as an appropriate economic measure for compensatory damages purposes.

When using their government number approach, Posner and Sunstein then suggest that values could be tailored to the circumstances of the particular case. For example, VSL could be linked to the victim’s personal characteristics, such as “the decedent’s risk preference, life expectancy (if VSLY is used), wealth, quality of life, and so forth.” (p. 587) They further suggest that the victim’s own wages could be used to estimate the victim’s VSL for a risky job. How this can be done is never specified and seems to reflect a misunderstanding of the VSL methodology. Labor market estimates of VSL are based on wage equation regression estimates for large samples of workers, not individuals. The VSL is not estimated based on the wage and risk levels for a single worker because the wage rate that the worker would have in the absence of any risk is unobservable. The estimated VSL is an average tradeoff rate across the entire sample. To the extent that it is possible to calculate a worker-specific VSL, one might do so on a rough basis by extrapolating from the regression estimates used in VSL studies. The starting point is the coefficient of the fatality risk variable from a log wage equation. In the standard VSL calculation, one multiplies this value by the average wage rate to calculate the VSL for the sample. However, if we assume that the fatality risk coefficient does not vary across individuals, which means that job risks have the same effect on the log value of wages for all workers, then one can personalize the VSL measure by multiplying the coefficient by the individual’s wage to estimate the individual-specific VSL. In this instance, the VSL will be exactly proportional to the wage rate, as is also the case with present value of lost earnings calculations.

The second approach that Posner and Sunstein (2005) recommend for ascertaining the hedonic loss of the victim is to ask the jury to determine this value. They suggest several approaches that could be used to help the jury to formulate a hedonic damages number. One approach is to ask the jury directly to set a “value of the life’s pleasures lost by the victim.” (p. 587) Posner and Sunstein regard this measure as too abstract. However, such questions raise a more fundamental difficulty as well. What does the question even mean? What

exactly is the thought experiment underlying the question? Are we asking the jury to determine the amount of money that would give the victim the same level of utility had the injury not occurred? This amount will surely be enormous in the case of a wrongful death, as the anticipation of even a very large bequest may not be sufficient to make one's death a breakeven proposition from the standpoint of the discounted expected utility over one's lifetime. Similarly, making victims whole after catastrophic injuries may not be feasible. Apart from the practicality of this approach, making victims whole from a utility standpoint is generally not desirable for health losses that are fatal or involve health impacts that lower one's marginal utility of income. In the extreme case in which a person is dead, it also makes little sense to talk about the level of compensation that the deceased must receive to have the same utility as when alive because dead people don't have utility functions.²³ While the "make whole" damages payment approach is feasible and efficient for financial losses, its desirable properties do not carry over to personal injury cases.

An approach that Posner and Sunstein (2005) believe might help jurors in setting the hedonic damages amount is to determine "the amount of money that the victim would have paid to avoid the risk in question." In effect, the jurors are being asked to construct the VSL based on this thought experiment. The principal difficulty with this approach, which they also regard as "unreliable," is that wholly apart from the fact that jurors do not know the risk preferences of the victim, the task itself is difficult to do *ex post*. Before the accident occurred, the risk is q , but after the fact the adverse outcome did occur so that retrospectively the probability is 1.0. Whether jurors can take themselves back in time to the pre-accident situation is unlikely. A substantial literature has documented the problem of hindsight bias by which jurors act as if they knew all along that the accident would have occurred.²⁴ Retrospectively, jurors believe the *ex ante* probability of an accident was greater than q , thus leading to an upward bias in their assessed value of the risk. How that bias in perceptions will affect the imputed VSL will depend on how substantially R is boosted. The jury's quite difficult hindsight task is to impute both the *ex ante* probability of an accident and the *ex ante* compensation that the victim would have required to face that risk, and then to use these values to construct VSL based on the value of the imputed R/q ratio.

In view of the mental gymnastics required by this thought experiment, Posner and Sunstein (2005) also suggest that jurors could be provided with VSL numbers to guide their deliberations. Even once the educational task is completed to immerse jurors in the nuances of the VSL literature, there remains the additional problem of how jurors should then set damages in this particular case after being armed with the results from the VSL literature. If the deceased had earnings below that for the average worker in a VSL sample,

²³This argument has been used in hedonic damages cases by James Rodgers and Thomas Ireland. Note that even posing the question to people of what anticipated bequest would "make one whole" after death is unlikely to generate sensible answers.

²⁴Indeed, Sunstein and his coauthors have contributed to the hindsight bias literature. See Sunstein et al. (2002) for examples of hindsight based on jury experiments.

as is often the case for people outside the labor market, should there be any adjustment for that difference? At the other extreme, should the hedonic damages for someone at the upper tail of the income distribution be greater than the average VSL level for the economy?

How VSL levels would be calculated for children and the elderly under the approaches that they suggest is also unclear. Children do not work on dangerous jobs or purchase hazardous products, so imputing their VSL based on market decisions pertinent to that group is not feasible. One can examine the decisions made on behalf of children by their parents, but whether these decisions fully reflect both the child's valuation and the parents' altruistic concern is not clear. Similarly, labor market data do not provide reliable guidance for the VSL levels of those who are very elderly and are outside the labor force. While it is possible to apply an average VSL level in all wrongful death cases, doing so undermines the case-specific character of compensatory damages.

Because of the many limitations of asking jurors to ponder hedonic damages issues, Posner and Sunstein (2005) recommend that hedonic damages be based on the first approach in which judges rather than jurors will set the hedonic damages values based on the VSL values used by the government. While I share the preference for an increased role of judges in setting both punitive damages and noneconomic damages, I disagree with the underlying assumption that there should be any compensatory damages award for hedonic losses, irrespective of the fact that there is no single number used by government agencies that might serve as the definitive reference point.

The damages reform of introducing payment for hedonic losses would, in the view of Posner and Sunstein (2005), "have a significant impact on tort awards, especially for the elderly in non-hedonic-loss states." (p. 588) This characterization greatly understates the dramatic effects that introduction of hedonic losses would have if it were to become a routine component of compensation in personal injury cases. For the typical worker, the VSL level is about an order of magnitude larger than the present value of the worker's earnings. As a result, damages values would increase generally, not just for children or the elderly.

Greater damages levels that arise from the introduction of hedonic damages as a standard compensation component in turn will impose higher costs on insurers and defendants in such cases. These higher costs will boost insurer premiums, raise product prices, lead doctors to undertake additional defensive medicine efforts, and have other adverse economic consequences. If, of course, damages were initially set at too low a level, then such ramifications would be the result of installing a more efficient damages regime. But the practical difficulty is that compensation for hedonic losses will not foster optimal damages levels but will instead make damages inefficiently high so that the economic repercussions will be inefficient.

B. Additional Damages Components

In addition to compensating for hedonic losses, Posner and Sunstein (2005) recommend that there be a second component of compensation for harm to survivors. This second major damages component includes both nonmonetary factors such as "grief, mental distress, loss of companionship, and the like" (p.

590) 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 ...” (p. 590) Put somewhat differently, they are advocating the award of hedonic damages as well as the two conventional damages components to address economic damages and noneconomic losses. This proposal goes well beyond past misuses of hedonic damages, which typically do not also include conventional damages components as well.

Their triple barreled approach raises a clear-cut problem of establishing duplicate award components for the same harm.²⁵ In terms of our earlier formulation, the result of their proposal will be

$$(8) \quad L = VSL + M_1 + M_2 > L^*.$$

The VSL amounts already incorporate the person’s assessment of his or her total future earnings and how these earnings will affect personal welfare so that there is a duplicate payment if economic damages for earnings loss are also paid out. By definition, the present value of these future earnings will necessarily exceed the present value of future earnings minus the decedent’s consumption share that would be paid after a wrongful death. Empirically, VSL amounts equal the present value of lost earnings scaled up by roughly an order of magnitude.

Noneconomic damages are also subsumed in the VSL conceptualization. If individuals deciding on acceptable risk-money tradeoffs take into account the welfare losses such as the grief that one’s family will experience after the person’s death, these concerns will already be largely reflected in the VSL amounts. The Posner and Sunstein (2005) formulation will lead to duplicative compensation for the same harms.

The heart of the problem with their approach is that it is grounded on a “make whole” principle, coupled with a failure to recognize the duplicate compensation for losses. They advocate hedonic damages to compensate for the victim’s lost pleasures of life and additional compensation that will be sufficient to enable survivors to “recover their welfare loss.” (p. 590) Economic losses and noneconomic damages will be compensated directly as well as through the hedonic damages component.

Notwithstanding the rampant degree of overcompensation, these payments will not bring the deceased back to life, and anticipation of the payment of such damages in the event of one’s death may not make either the victim or the survivors indifferent to the death. Monetary payments simply may not enable them to “recover their loss,” particularly if they are dead and no longer have utility functions. There will be a real welfare loss from dying despite escalating damages to the new heights advocated by Posner and Sunstein (2005). If one goes back to first principles and asks what kind of tort regime potential victims

²⁵Other commentators with a different perspective on hedonic damages than my own also note the substantial overlap of hedonic damages with the factors included in conventional damages components. See, for example, Miller (1990, 2008). It is not, however, strictly appropriate to subtract economic loss from VSL to calculate the noneconomic loss from death. The VSL methodology is based on lotteries involving small probabilities and is not based on a formula that simply adds up different components of loss.

would select in advance, it would not follow the Posner and Sunstein (2005) model because it provides ex post compensation that the victims do not value and will not want to pay for through higher product prices and other economic costs of tort liability. Excessively generous liability awards are not a free lunch for those receiving the payments.

VI. Mismeasuring Utility: Happiness Scales and Disability Scales

A. Happiness Scales

In a variety of contexts, economists, psychologists, and rehabilitation experts have employed different kinds of happiness and disability scales. If being healthy is rated 100, what percent of your physical capacities remain after losing a limb? Are you now down to being a 75? Similarly, if you are rating your happiness on a scale of 1 to 10, how happy were you before you were injured, and how happy are you now after the injury?²⁶ Because of the greatly increased attention being given to happiness scales, which presumably may have some relation to utility, I will focus on these scales and their pertinence to the use of VSL amounts in setting damages. Given that economic analyses generally treat utility as an ordinal measure rather than a cardinal measure, many economists would find the critique of happiness measures obvious. However, given that economics journals are also publishing happiness papers, it is worthwhile to examine this approach.

In my activities as a consulting expert to defendants, I have encountered plaintiffs' experts who have used happiness scales, disability scales, and well-being measures in conjunction with VSL levels. QALYs (quality-adjusted life years) based on expert judgments of the effect of health impairments on quality-adjusted life years are in the same vein. Because the conceptual errors that arise in using these approaches are quite similar, for concreteness I will use the happiness scale as my reference point.

I first encountered such scales in my work as a consulting expert with respect to the nonmonetary losses of Alaskan residents as a consequence of the Exxon Valdez oil spill. To capture the spirit of the analysis that I critiqued, I will construct an example similar to that presented by the plaintiffs in that case. Suppose that before the Exxon Valdez oil spill the average citizen rated his or her happiness as a 9 on the 10 point scale. After the spill, survey respondents report a happiness level of 6. Thus, their happiness has declined by one-third. The actual values determined in this case were based on a public opinion poll, but the survey methodology followed this very simple format. Economic studies at the time indicated a VSL of about \$5 million. Chaining the happiness scale numbers with the VSL levels leads to an estimate of the nonmonetary loss due to the spill of $(0.33) \times \$5$ million, or \$1.67 million per person. Eager plaintiffs' experts argued that this number is the right estimate of damages

²⁶Sometimes such scales are on other ranges such as 1 to 8, but a 10-point scale is easiest to discuss for expositional purposes. Gilbert (2006) surveys the psychology literature on happiness and presents 8 point scales.

as it employs two generally accepted methodologies—happiness scales that are used in the psychology literature and VSL amounts from the economics literature. Adding to the credibility of the use of VSL numbers is that the VSL values also are used by government agencies, though it is noteworthy that I know of no instance in which they have been used in conjunction with happiness scales or disability scales.²⁷

The fundamental problem with this and similar seemingly scientific calculations that combine VSL numbers with other scales is that there is no justification whatsoever for linking the scales. For the happiness scale-VSL approach to be sensible, moving down the happiness scale from 9 to 6 would have to be as unattractive as facing a 0.33 risk of death. Thus, if the Exxon Valdez oil spill was equivalent to everyone in Alaska facing a 0.33 risk of death and ultimately one-third of all Alaskans would be killed rather than thousands of birds and hundreds of otters, that event as described would be appropriate to link to the VSL numbers in this manner. It is unlikely that anyone would consider these to be equivalent risks. VSL numbers are grounded in lotteries on life and death, and any usage of these scales should be based on a lottery approach involving personal fatality risks.

The happiness scales have a variety of other problems in terms of their pertinence to damages calculations such as these. Interviewing people after an oil spill or after an accident event may generate a lower happiness score. However, this apparent loss in welfare may not be permanent. Payments provided by the compensatory damages component of the court award raised their happiness. Also the employment of Alaskans in cleanup efforts raised their income and presumably boosted their happiness. Similarly, the subsequent rebounding of the Alaskan tourism and fishing industry after the spill will boost happiness in the longer run, just as will rehabilitation after an accident.²⁸ Some people may move to other states and become happier in their new environment. Happiness scores generally reflect short-term well-being, not long-term utility. Indeed, reports of happiness have been found to be sensitive to seemingly minor changes in one's lifetime utility and transitory and random swings in well-being, such as people reporting higher levels of happiness when they report their scores on sunny days rather than on rainy days. In contrast, death is forever. Any methodology linking VSL to other indices must incorporate some recognition of the fatality risk lotteries that are embodied in the VSL

²⁷The FDA does, however, sometimes use QALYs as well as QALY values chained with the Kaplan-Bush Index of Well-Being. Thus, the FDA has combined two invalid benefit measures, which is not the same as using a well-being measure in conjunction with an otherwise valid VSL approach. See the FDA, Dept. of Health and Human Services, 21 CFR Part 800 "Medical Devices; Patient Examination and Surgeons' Gloves; Test Procedures and Acceptance Criteria," *Federal Register*, Vol. 17, No. 243, Dec. 19, 2006, pp. 75865-75879, especially p. 75873. In other analyses, the FDA has done the analysis correctly using a VSL of \$5 million, but the FDA also presented a QALY analysis as an alternative sensitivity test. See FDA, Dept. of Health and Human Services, 21 CFR Parts 16 and 900, "Quality Mammography Studies," *Federal Register*, Vol. 62, No. 208, Oct. 28, 1997, pp. 55852-55965, especially p. 55965.

²⁸This effect is pertinent more generally for how one should think about the appropriate level of noneconomic damages. To what extent will payment for economic loss dampen the pain and suffering loss?

concept. No matter how happiness scores and disability scores are used, they fail this test.

B. The QALY Approach

While the VSL methodology has a rigorous economic foundation, scorecards of happiness, disability rating scales, and QALYs typically do not. Apart from the fact that these measures are not grounded in expected utility theory, there are two additional notable deficiencies. First, the scorecards used are not valid quantitative metrics for several reasons. Facing a 50-50 lottery on having a happiness level of 8 versus 4 is not necessarily equivalent to having a happiness level of 6 with certainty. All we really know is that for a given individual interviewed on a given day that 8 is preferred to 6, which in turn is preferred to 4. We don't know that if you report a score of 8 and I report a score of 7 that you are happier or have a higher utility level than I do. Nor do we know that if you report a score of 8 now but reported a score of 9 when you were twenty that your current self is less well off than your former self. Your reference point for judging well-being and all that is encompassed by this concept may simply have changed. Similarly, the metric itself is devoid of quantitative significance. We might score the height of the tallest player on the basketball team as being a 5 and the shortest player as being a 1, but this does not mean that the tallest player is 5 times taller than the shortest player. Thus, there is no justification for thinking about happiness scales or disability scales as representing a measure of cardinal utility or expected utility.

All measures of the extent of impairment or QALY values that are set using the judgment of a third party suffer from an additional deficiency as well. This limitation also extends to the judgment of jurors who as third parties are evaluating personal injuries. When viewing the welfare consequences of disability from the vantage point of one's healthy state, the drop in welfare may look quite substantial, but if the person actually suffered the ailment in question there might be adaptation and less of a utility loss than one might have expected. To test this phenomenon, a study that I undertook with Sloan et al. (1998) examined the willingness of victims of multiple sclerosis (MS) to take part in a treatment regimen that posed a risk of death, but which would cure them if the treatment was not fatal. Interestingly, the patients who actually had MS were willing to accept a much lower risk of death when offered the chance of a cure than were healthy respondents to whom we described the symptoms of MS. After people have developed MS, they have adapted their lives and suffer less of a welfare loss than one might think based on our current healthy state.²⁹ The external vantage point that is used in constructing these various measures of welfare and disability consequently fails to take into account the adaptation by the individual. As a result, these measures of losses associated with disabilities and illnesses tend to overstate the welfare loss that has been suffered. Thus, not only are such indices inappropriate measures to

²⁹Because of adaptation, hedonic losses for disability will generally be overstated. See Bagenstos and Schlanger (2007).

combine with VSL amounts, but they lack any independent validity as welfare measures.

VII. Conclusion

The VSL literature will continue to thrive and to further refine the estimates of VSL for different populations. Government agencies also will continue to use VSL estimates and perhaps also incorporate information on the heterogeneity of VSL to value government policies. But the soundness of these uses of VSL in no way implies that the methodology can be transferred in a straightforward manner to personal injury cases. Nor does it imply that use of VSL measures for compensation purposes in the courtroom is legitimate. It is not.

The proper uses of VSL in such cases are for assessing liability and possibly to contribute to the conceptualization of how the courts might think about upper bounds on punitive damages. But even punitive damages equating the punitive award with the VSL will generally result in an excessive punitive damages award from the standpoint of optimal deterrence. Moreover, creation of levels of deterrence that will produce efficient levels of safety leads to over-insurance and an inefficient imbalance in the promotion of these two competing objectives.

The main battleground for hedonic damages will continue to be the use of these numbers for compensatory damages purposes. The hedonic damages approach proposed by Posner and Sunstein (2005) seeks to breathe new life into the increasingly moribund hedonic damages approach by adding hedonic damages on top of conventional economic damages. The result of their proposal will be an unprecedented level of excessive compensation from the standpoint of both deterrence and insurance.

As plaintiffs seek to boost the damages awards, it is likely that they will continue to introduce ways in which the VSL estimates can be linked to the damages in the particular case. Initially, plaintiffs' experts sought to replace conventional damages measures with a VSL measure, so as to boost calculated damages. More recently, there is a proposal that damages include both the VSL and the conventional damages amount. There have also been efforts to chain VSL with various happiness measures. However, these and similar misuses of VSL reflect a fundamentally flawed usage of the VSL methodology.

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