

Litigation Economics

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HEDONIC DAMAGES IN PERSONAL INJURY AND WRONGFUL DEATH LITIGATION

Stan V. Smith

INTRODUCTION

One of the more difficult tasks facing jurors is to place a dollar value on the loss of enjoyment of life in wrongful death and nonfatal injury cases. Such losses have recently become known as hedonic damages. Over the past several decades, economists have developed techniques to measure intangible damages that are "accurate at least to a reasonable level of approximation."¹ Methodologies developed in the 1970s to measure the value of life can greatly assist fact-finders in performing their task. These techniques and the attendant expert testimony by an economist can provide a framework within which jurors reach their conclusions.

Until recently, all jurors had to rely on were ad hoc techniques proposed by defense or plaintiff attorneys at trial as well as their own intuition. As might be expected, this process commonly resulted in widely varying awards. Legal researchers have long argued that this process leads to inflated awards and,

indeed, simple logic could predict this result. In a system where error can be large, errors on the low side cannot cause a result to be less than zero, whereas there is no upper limit to errors on the high side. An upward bias results.

Many people have read of highly publicized jury awards in past years and wondered what process produced the results. Jury reliance upon accepted economic methodologies can produce greater fairness and consistency in awards and not necessarily, as some have argued, higher average awards. As with any expert testimony, the jury decides the weight to be given to this evidence. But the valuation methods that have been developed can serve as a useful guide in aiding the jury in their difficult task of determining intangible losses.²

Damages for the loss of enjoyment of life have become known as hedonic damages. I first used the term "hedonic damages" and the willingness-to-pay approach to valuing life based on economic measurements in 1985 in *Sherrod v. Berry*,³ a U.S. Code, Section 1983, civil rights case. Although new at that time, this basic approach has been used many times since by a rapidly growing number of economists who value the loss of life in wrongful death and injury cases in many states. The trial and appellate courts in *Sherrod v. Berry* adopted the term *hedonic damages* in their written opinions affirming the admissibility of my testimony. The term does not imply a new element of damages, but rather serves to emphasize the new evidentiary approach used to establish the loss of enjoyment of life, based on economic research over the past two decades. It further serves to distinguish between the value of life itself and its accompanying productivity estimates as measured by earnings, household services, and so forth, sometimes collectively referred to as the human capital value. When added together, the hedonic value and the human capital value comprise the whole life value.

The theory of hedonic damages, which compensates for the loss of enjoyment of life, "has moved quietly, case by case, into the mainstream of modern tort law," according to Bodine, former editor and publisher of the *ABA Journal*.⁴ To date, a majority of state and federal courts have ruled that it is a separate element of damages, while a minority of courts have ruled that it is a factor in pain and suffering.⁵ Most jurisdictions allow for the loss of the enjoyment of life in nonfatal injury cases, but there is great variation in the manner in which such losses can be claimed.⁶ Many courts hold that such loss can be included in a claim for disability or for pain and suffering; other courts allow it as a separate element of damages.⁷ Some courts require cognitive awareness by the victim;⁸ others have found awareness to be irrelevant.⁹ As strictly calculated in injury cases, it is the loss of the capacity to experience the ordinary quality of life, distinct from damages representing

the onset of palpable pain, suffering, and mental anguish which may or may not be concomitantly present. A few states, including Georgia, Connecticut, and Mississippi, allow for such hedonic loss claims by a decedent in wrongful death cases. Alaska, Louisiana, and Hawaii have had lower courts allow this element of damages in cases that have not been not appealed to higher courts.

The hedonic damages approach raises a number of issues that deserve examination. Some of these deal with the measurement process, whereas others deal with social concerns. Since testimony on the value of life is being increasingly admitted into courts of law, it can be expected that refinements of the basic technology will be forthcoming and that this methodology will become more standardized as it is utilized over time.

SOCIETY AND THE VALUE OF LIFE

In most civilizations, including contemporary Western civilization, life itself has been held in high esteem. This has been true at least regarding the lives of the rulers, if not of the subjects. The ancient Babylonian Code of the great King Hammurabi provided payments for loss of the value of life. The poetry of most peoples and the constitutions of almost all countries proclaim that life is to be held in the highest regard. While the principle that life itself is valuable is not uniformly upheld in practice, there has been widespread acceptance of this belief. During the second half of the twentieth century, hundreds of millions of people, who formerly lived under autocracies, made a monumental march toward universal individual freedoms and rights, arguably the most important of which is the right to life itself. A great current debate within our own American society is the affordability of continuously increasing expenditures on health and safety and, hence, the continued enjoyment of life of its citizens. This debate is about the value of life itself.

Despite the long held and nearly universal belief that life is sacred, it was only comparatively recently that economists have developed a methodology which would value life and the capacity to enjoy it. Over two hundred years ago, Adam Smith proposed that the value of life can be measured by the value of a person's output.¹⁰ This concept, known as the human capital approach, is still the principal basis for recovery in wrongful death cases in many jurisdictions. For many years, it has been used as an important basis for assessing the costs and benefits of government programs.

The shortcomings of the human capital approach are obvious to any beginning student of economics. By valuing only the lost labor component, this approach implies that people do not derive any utility from their nonworking life. Further, under this approach, the lives of retired people or

of volunteer workers command no value. At any reasonable discount rate, the value of the lives of very young children is very low because the present value of their future earnings is discounted over many years. According to Justice Richard Posner of the 7th Circuit Court of Appeals, courts have "resolved the vexing problem of the proper valuation of life by ignoring it."¹¹ This results in a "systematic underestimation of damages in wrongful death cases."¹² It would be only a matter of time before society's concerns for the life of individuals brought forth a remedy to the situation.

Ironically, it was also Adam Smith who volunteered a principle which is now one basis for measuring the hedonic value of life. Smith argued that a job which has an undesirable characteristic—say risk of death—will pay more than a comparable job which does not.¹³ Smith's compensating wage differential, or wage premium, required by the marginal worker, should persist over time in competitive labor markets. This thesis eventually led to the analysis of wage differentials for jobs with differing risks of death.

Thomas Schelling planted the modern-day seed in the late 1960s by suggesting that to measure the whole value of life, economists should examine the amounts of money that people were willing to pay to avoid or reduce the risk of dying.¹⁴ This is essentially the method implied by Smith's proposition. The general methodology is now referred to as the willingness-to-pay approach. This methodology examines the amounts paid to save (or put at risk) the lives of unknown, statistically average people. Because this process involves low probability events, the results are much more objective than when death is faced with certainty. When actual lives are at certain risk and in sudden, public profile, the amounts paid can be extraordinarily high since society is no longer objectively valuing unknown lives.¹⁵ Thus, in the late 1980s, when Jessica McClure became trapped in an abandoned water well in Texas, and when several whales were trapped in an Alaskan ice floe, the amounts expended implied an enormous value to the life of the child and the whales alike, in those very public circumstances.

Agreeing with Schelling, Linnerooth also concluded that there was no theoretical relationship between the willingness-to-pay and the then widely used, human capital approach to valuing human life.¹⁶ Why should the value of life of a workaholic be greater than that of a person who leads a life of balance among work, family, and community activities merely because the former may earn much more? In fact, it could be argued that the higher earnings come from forgoing much of life's enjoyment.

Our society concerns itself greatly with the saving of statistical lives, some of which, Schelling reminds us, may be our own. The overall logic of the valuation process is simple. If we were to spend \$50 million on a program that prospectively might save fifty lives, the implicit life valuation would be at the rate of \$1 million per person. Many spending programs lower the risk of death and thus place an implicit value on life. Some of them are private

expenditures of monies, while others are public expenditures. Our concern for lifesaving is significant and substantial, internalized in every building, every highway, every airplane, and other such construct.

Concern for lifesaving is inherent in the ways in which our society manages itself. Presidential Executive Order No. 12291 requires agencies to prepare a value-of-life estimate for all significant legislation, and the order recommends the willingness-to-pay approach.¹⁷ There is some puzzlement as to why this information, available since the early 1970s, took almost two decades to be introduced into the courts. The reasons may be several. Formally estimating a price for life is distasteful to some, although jurors are often asked to do so. Our society has a strong belief that life is sacred. However, economists have shown that worldly concerns such as costs already affect our decisions about who shall live and who shall not. The widely varying jury awards arise from the vacuum of information in the courtroom about the value of life. Thus a mix of these and perhaps other forces led to the inevitable introduction to courts, and to jurors, of a broad body of economic research on the value of life. By all accounts of posttrial interviews and the analysis of mock trials, most jurors reported that they welcomed the information. It lowered their initial anxiety when they first heard that they would be charged with putting a dollar value on the loss of enjoyment of life and had no initial idea of how to do so. I believe it provides jurors with one additional guideline or viewpoint, from an economic perspective, which, when coupled with their own moral, philosophical, social, and spiritual viewpoints, serves to assist them in performing their difficult task.

THE VALUE-OF-LIFE LITERATURE

The willingness-to-pay approach is now widely accepted by academic economists as a method for arriving at whole life values. The value that economists measure is the whole value of life, which includes human capital costs. The value of life, net of human capital costs, is what is referred to as the hedonic value of life. While much of the literature was developed to assist in the public decision process, Miller provides clear and convincing evidence that the willingness-to-pay methodology measuring the price of risk reduction meets the so-called *Frye*¹⁸ test as being "sufficiently established to have gained general acceptance" by academic economists, and that it "should permit expert witnesses to use risk reduction values—and not human capital costs—as the primary basis for their testimony on the value of life."¹⁹ Moreover, in the recent *Daubert* case, the U.S. Supreme Court unanimously ruled that the "general acceptance" requirement of the *Frye* test was at odds with the "liberal thrust" of the Federal Rules of Evidence (*Daubert v. Merrell Dow Pharmaceuticals* 113 S.Ct. 2786 [1993]).

The value-of-life literature is based on three types of analyses. One analysis examines the costs of reducing the risk of death through individual consumer investment in safety devices and safe behavior. A second examines the risk compensation paid to workers who work in risky jobs. And a third method surveys people's willingness to spend on their own safety.

One of the early reviews of the published literature was provided by Blomquist.²⁰ From the limited results available at the time, he showed that the ratio of whole life values to human capital values ranged from 2.5:1 to 15:1, ignoring the results from contingent valuation surveys, which constituted the extreme values. Although there is no association necessarily between earnings and the value of life, the ratios point to a stark conclusion: the measurements indicate that the hedonic value of life is the larger part of the whole value of life, greater than the human capital value by a multiple of between 1.5 and 14.

Several other reviews of the literature have been published recently. Gillette and Hopkins report that a majority of federal regulations impose a cost of compliance on regulated entities and on rule-making agencies ranging from \$1.5 million to \$8.5 million per life.²¹ Fisher, Chestnut, and Violette review estimates based on individuals' willingness to pay ranging from \$1.6 million to \$8.5 million, placing more credibility on the lower end of the range.²²

To date, the most comprehensive and sophisticated review of this literature can be found in Miller,²³ who analyzes the results of sixty-seven different estimates by economists of the value of life. After weeding out those studies considered to have flaws and adjusting for several sources of inconsistency, Miller accepts forty-seven of the studies. He concludes that the mean, or average, of the whole life value estimates is approximately \$2.2 million in 1988 after-tax dollars for a person with a thirty-six-year remaining life expectancy. Based on discounted future years and after subtracting for human capital costs and the value of continued financial security, Miller concludes that the annualized hedonic value of life was \$55,000 per year in 1988 after-tax dollars. The ratio of whole life to human capital value is approximately 5:1, within the lower end of the range observed by Blomquist. The standard deviation of the forty-seven estimates is \$650,000, indicating that a majority of the published results fall within between \$1.5 and \$3.0 million. For people who have been wary of the broad range of unadjusted results published in the literature, Miller's results should come as news. This range is not significantly different from the ranges of values that exist in other areas of expert economic testimony such as lost income, household service hours, and so forth.

Perhaps Miller's most important conclusion is that, while any one of the studies may have minor methodological flaws, taken as a whole,

the emergence of a consistent value range from studies using many different approaches and data sets suggests that the methodological concerns about individual studies are not of central importance. Although they may produce errors, the errors are not large enough to skew the values obtained.²⁴

Miller asserts that this broad body of literature can credibly serve in court as the basis for measuring the hedonic value of life as well as for the loss of enjoyment of life in nonfatal injury.

Miller also reaches several other important conclusions. First, there was no evidence that degree of risk measured in the studies was correlated with life value; low risk and higher risk events produced similar life values, at relatively low risk levels. This result greatly weakens the criticism that at the low end of the risk range people cannot rationally appreciate different risk levels. Second, the studies of consumer behavior produced almost exactly the same mean or average value as the wage-risk studies, greatly reinforcing the credibility of the results using different approaches. Recent work by Albrecht shows that the value of life should increase as the accepted risk increases to 100 percent, implying an underestimate of the value of life in low risk situations.²⁵

HOW TO VALUE A LIFE IN WRONGFUL DEATH

It is generally recognized that different economists may arrive at somewhat different projections for lost earnings. For example, the calculation could easily vary for a person killed during his or her first year of high school and with no previous earnings history. Economists exercise judgment regarding work life, average earnings, growth, and discount rates. Likewise, economists may differ as to precisely what is the net hedonic value of an average life, but such differences are generally within the general range of differences in other areas of valuation.

For example, Miller's review provides a whole life mean of \$2.2 million, and a hedonic value annualized at \$55,000 per year in 1988 after-tax dollars. The mean is arrived at by giving equal weight to the results of each of forty-seven studies. An equally weighted process to determine a mean is not the sole (nor necessarily the preferred) method for calculating a statistic to estimate the central tendency of life values. There are other estimates of the central tendency. In late 1987 using my own methodology, I estimated the average annualized hedonic value to be \$60,000 in 1988 pretax dollars.

To apply this value to a particular case, adjustments for age, race, and gender are necessary. Say, for example, that a fifty-five-year-old white female has been killed, so that all her enjoyment or value of life has been lost. Her remaining life expectancy is 26.8 years. The present value of \$60,000 per year for 26.8 years using a 0.72 percent net discount rate is approximately \$1,454,000 in 1988 pretax dollars.

From the depositions and trial transcripts I have read, as well as from the conversations I have had with other forensic economists, most economists who testify on hedonic damages start with a whole life value and subtract from that value an assessment of the value of the human capital costs and of household services for a statistical person. Some economists have argued that the value of continued financial security should also be subtracted. This value represents the worth of financial continuity, that is, the value placed on continuing to receive, without interruption, an earnings stream. At present there is no conclusive evidence that such a value should be subtracted; it is arguable that it is already included in a lost wages and benefits valuation.

The methodology for subtracting human capital costs from whole life costs should reflect a conservative approach. It should maintain consistent assumptions about taxation and the characteristics of the statistical person. There are several possible approaches to taking all this into account. Let us examine one simple approach that should provide a generous estimate of the present value of lost production and household services for a statistical person and thus a conservative estimate of the hedonic value of life.

To calculate this, consider, for example, that GNP per capita in 1988 was approximately \$20,000. To this we add the value of household services, which are estimated to be on the order of perhaps 25 percent of GNP. A simple average of work-life expectancies for thirty-one-year-old males and females is approximately twenty-five years. To take into account all human capital values, one might simply double (to be conservative) the current value of GNP per capita, assuming a twenty-five-year work life for the statistically average thirty-one-year-old, using a generously conservative 2 percent discount rate. This produces a human capital value of approximately \$800,000. This value can then be subtracted from the whole life costs to arrive at the hedonic value, which can then be annualized using a life expectancy figure and a discount rate.

Other economists have estimated the human capital costs using somewhat different or more detailed assumptions, but the results are similar. An appropriate adjustment must then be made to value the life of a particular person, taking into account that person's age, race, and gender to determine life expectancy. In presenting this estimate and accompanying testimony, an

economist, in effect, interprets the studies and provides information that can help a jury form its own judgment regarding the net hedonic value based on the estimates published in the literature.

The important contribution of an expert economic witness with a knowledge of the studies in this area of economics lies in assisting a jury to determine the range of values and then to determine how that range is applicable to the case at hand. The evidence that an expert economist presents thus serves as a valuable guideline which jurors can then integrate with their own moral, social, philosophical, and spiritual values to arrive at an appropriate conclusion.

Even when that is done, the juror must then weigh the importance of the evidence that the defendants and plaintiffs present with respect to the quality of life of the individual concerned, the specific circumstances of that victim's life, and her or his ability to enjoy life. An economist can present a probable range of the value of life, but only the jury can take all the additional information into account to decide where in that range a given individual falls. No single study can give the perfect answer as to the value of life; but the preponderance of studies, showing results falling in the \$1.5 to \$3.0 million range, should be viewed as evidence of a consensus as to where to begin.

The hedonic valuation process can be viewed as analogous to the process of valuing lost earnings. Once an earnings base has been selected, all that remains are adjustments for age, race, and gender, which determine work-life expectancy, and the selection of an appropriate growth and discount rate over a work life. In estimating the loss of the value of life, the same method is used, based not on an annual earnings estimate but an annualized value of life. To estimate lost earnings when a child is killed, it is common to select an earnings base from government tables for a broadly defined group—high school graduates, for example. This general process, readily accepted in courts of law, is no more or less individualized than the process of valuing a life.²⁶

THE LOSS OF ENJOYMENT OF LIFE IN NONFATAL INJURY

The process of valuing the lost enjoyment of life in nonfatal injury is based on the hedonic value of life established in the preceding section.²⁷ It involves an interdisciplinary approach using the assessment of a psychologist or psychiatrist and is based on a scale of global functioning such as that found in the Diagnostic and Statistical Manual published by the American Psychiatric Association.²⁸ Miller describes an essentially similar process.²⁹ The

application of the value-of-life literature in the measurement of the loss of enjoyment of life in injury is important. This process measures the value of the decrease in the ability to experience the enjoyment of life to which one would ordinarily look forward. It is separate and apart from palpable pain and the consequent suffering, such as fear, worry, mental disturbances, and humiliation that can accompany the injury.

The reduction in the ability to experience the value of life is based on the total value of life, along with an evaluation by a psychologist, psychiatrist, or other mental health professional, that measures the percentage reduction in the capacity to function and experience life as a whole individual. This evaluation examines the claimant's reduced capacity to function in all areas of life by examining the impact on occupational functioning, social and leisure activities, daily practical living, and his or her internal emotional state. This impact can vary from the time of the incident to the end of life expectancy. It may be severer at the time of injury; it may decline as the injured person recovers and compensates; or it may get worse as the medical consequences are aggravated by physical deterioration as one ages.

Identical injuries will affect people differently. Consider, for example, the difference in the loss of enjoyment of life resulting from the amputation of the tip of a little finger for a twenty-one-year-old concert pianist, as opposed to a twenty-one-year-old economist. Further, an impairment such as the loss of eyesight may lead to similar estimates for the loss of enjoyment of life but may be accompanied by different degrees of pain and suffering. A person who loses his sight through the negligent slip of a scalpel may suffer no palpable pain and suffering, whereas another person who loses sight as a result of a gunshot wound may suffer substantial initial and subsequent pain and suffering. The loss of the capacity to engage in life's ordinary yet challenging experiences is not dependent upon the degree of physical incapacity or the degree of pain, suffering, and mental anguish.

Recently, some standards for rating the percentage of functional disability have been suggested.³⁰ There are numerous possible assessment protocols. Ultimately, the percentage loss figure, however derived, is the psychologist's estimate as to the percent loss of the quality or enjoyment of life, based on his or her training, background, experience, and judgment. Once the percentage of loss has been determined, that reduction can be applied against the full hedonic value of life to arrive at a partial loss estimate.³¹

Using the earlier example, let us assume that the fifty-five-year-old female had not died but had been significantly injured. Further assume that a psychologist rates her as losing 40 percent of her enjoyment of life. The losses would be approximately 40 percent of her total hedonic value, or \$582,000. The loss of capacity need not be constant over time; it can vary. Immediately

after a trauma, the loss may be great. The ability to enjoy life may increase somewhat during the recovery period. Losses may remain constant or may increase toward the end of life expectancy, depending on the impact of the injury.

This interdisciplinary process is analogous to the process whereby a vocational rehabilitation expert estimates the percentage of the impairment of the capacity to earn a wage due to injury. A rehabilitation assessment might conclude that a person's hourly earning capacity has fallen by 25 percent, for example, due to certain physical disabilities. An economist would then apply this estimate to the preinjury earning capacity and thus provide testimony routinely admitted into court. Bovbjerg, Sloan, and Blumstein³² argue that today we have sophisticated knowledge regarding the value that people place on the nonpecuniary aspects of life, and that this information should be used to guide juries and trial judges in their valuations of injuries in order to improve the accuracy and fairness of the awards and to make litigation less expensive and more predictable.

CRITICISM IN APPLYING WHOLE LIFE COSTS TO THE VALUE OF LIFE IN COURT

A number of matters have been raised regarding the use of hedonic testimony in court. The quality of the econometric analysis in this area is not without challenge.³³ Yet many criticisms of the hedonic methodology are no different from criticism that can be applied generally to almost any area of econometric analysis.³⁴ One issue is that the use of statistics to measure life value involves uncertainty. However, statistical uncertainty affects other areas of economic testimony as well. Life expectancy tables, for example, are routinely relied upon by economists and admitted into court even though they do not predict the date of death of a particular person with any great accuracy. Few realize that the chance of dying within a ten-year span on either side of an approximate seventy-five-year life expectancy is less than 50 percent. Yet calculations based on life expectancy tables are rarely challenged as to their degree of precision. Just as the life expectancy tables produce unbiased, fair, neutral, and reasonable estimates, the willingness-to-pay literature in economics establishes within a reasonable degree of precision the value of life for use in the courtroom.³⁵

Another criticism of the hedonic approach is that results are sensitive as to whether researchers use risk perception or actual risk, which could change certain willingness-to-pay results. Slovic, Fischhoff and Lichtenstein³⁶ showed that risks of rare occurrences such as botulism were overestimated and incidents of average or common risks such as stroke were underesti-

mated. Oi,³⁷ however, concludes that people's risk perception is systematically accurate. Miller's estimates are adjusted for, and based on, perceived risk. If, however, workers tend to underestimate the risks they face, as some suggest, this would lead to undercompensation in wage premiums and an underestimate of the values of life. Moreover, since the riskier jobs are taken by people who demand the least risk compensation,³⁸ the values determined through an analysis of wage-risk premiums underestimate the value an average person would place on his or her own life.

Another criticism of the hedonic approach is that the wage-risk premium studies assume labor mobility, whereas some critics have argued that workers lack mobility and are forced to take jobs, irrespective of the risks involved. Ironically, this argument implies that immobile workers are underpaid for risks and that, in a perfect market, the risk premium in their wage would be higher, leading to a higher value-of-life statistic. However, there is a large body of empirical evidence that the American labor force is highly mobile.³⁹ In addition, a sufficient condition for wages to reach equilibrium is that there only need be *some* workers who are willing to move to equalize any wage differentials; general overall labor force mobility is not required.

Linnerooth provides an excellent discussion of several of the issues surrounding the value of life.⁴⁰ First, she discusses the willingness-to-pay method as one which clearly involves "placing a value on the loss of a human life" rather than, as many would argue, merely a measurement limited to valuing changes in the risks of death. Even when conceding that these values are for statistical lives, some economists argue that the values cannot be applied to the lives of real people. Yet these same economists have no difficulty applying the statistically average wage of a high school graduate or the statistically average life expectancy of a ten-year-old white male to a real person. Moreover, when consumers spend money on lifesaving equipment, real lives are saved, notwithstanding the fact that usually we just do not know which lives. The process of applying the same value of life to all people is no different from applying the same statistical high school wage to all prospective high school graduates, or of applying the same life expectancy figures to all ten-year-old boys. Value-of-life estimates are modified by life expectancy in the same way that prospective high school wages are modified by work-life expectancy. There are personal characteristics that are not taken into account in the hedonic value process, but again this is also true in other areas of economic assessment.

Linnerooth also concludes that a person's lifetime earnings are only a lower bound to the willingness to pay. Some critics have stated that the value of life must be limited in some way by the value of production. It should not be surprising, though, that the hedonic value of life is greater than the value

of production, as Blomquist clearly showed. Other critics claim that the amount a person would accept to end his or her life with certainty is infinite. This is of course true; at death the utility of money or of any asset for that matter is zero, excluding the value that someone may place on providing benefits to survivors. We cannot get an objective answer to the value of life from those facing death with certainty. But by examining the mundane behavior of society where the risks to a person are small, we may arrive at an objective result.

Linnerooth also agrees with other researchers that the amount of insurance an individual purchases to insure himself against the loss of his life cannot lead to the appropriate figure for valuing the reduction of the probability of its loss. This conclusion seems obvious when we reflect that wealthy people do not need life insurance, except perhaps to provide liquidity to an estate, whereas poor people cannot afford life insurance. The purchase of life insurance reveals how a person wants his or her survivors to prosper after his or her death; it says nothing about how he or she values his own life since its purchase does not at all affect survival.

Some economists have argued that the value we place on our leisure time and activities is a measure of the value of life. It is not. When we pay \$3 an hour to see a movie, we do not implicitly value life at that rate; this is the price of entertainment. All of us would pay something per hour merely to be alive, to play with our children, to stare at the sun, or even the ceiling.

Critics have argued that by engaging in risky activities, a person expresses a low value on his or her own life. However, our engagement in risky activities does not necessarily mean that we do not value life; we frequently engage in risky activities in exchange for a certain pleasure. Scuba divers take risks in order to enjoy underwater exploration. If we wanted to avoid risk at any cost, we would drive Sherman tanks rather than cars, live underground to avoid exposure to the sun's rays, and never eat a banana split.

Some economists believe that the value-of-life results are essentially correct, but should be used only for product liability cases because these values pertain to deterrence and not to compensation. When asked which values jurors should use in a nonproduct liability wrongful death case where compensation for the life of the deceased is allowed, one researcher acknowledged that he would "use the deterrence values" that he derived for other cases as well.⁴¹

Another researcher who questioned the econometric soundness of the values nevertheless indicated that a value-of-life figure in the \$2 million range "sounded about right."⁴² Still, a hesitancy exists among some economists to use these values in death cases because of the belief that these values should not go to survivors, since they are losses experienced by the decedent.⁴³ This

is a legitimate issue for our society to debate. However, where courts do allow for losses by the decedent to be recovered by survivors, it is not the role of an economist to argue against the use of hedonic damages by claiming that this type of recovery is wrong in our society. Moreover, losses due to pain and suffering sustained by fatally injured victims before death, or by permanently comatose victims, are routinely recoverable in most jurisdictions and likewise are received by survivors.

Some defense attorneys argue against the use of such damages, stating that the willingness-to-pay research was not conducted with the express purpose of having these values used in court. This may be true, but researchers frequently do not foresee the uses to which their work will be put, nor are their explicit agreement and consent required. Overall, numerous researchers have explicitly agreed that this body of literature can be used to value life in court, urging proper and cautious use.⁴⁴

Forensic economists will be called upon to testify on hedonic damages with increasing frequency. One commentator advises that such testimony can assist with the proof of the loss and "is worthy of serious consideration for use at trial." He further offers the following guidance to attorneys and economists:

The hedonic value of life is a specialized field in economics. Though many economists are familiar with the concept in general, relatively few have deep expertise. If hedonic loss is a major component of a case, it is probably both effective and cost-efficient to seek out an expert in this specialized area of economics. Furthermore, using someone established in this field will enhance the credibility of the testimony. Without using an economist who is established in this field, as demonstrated for example by articles published in the professional journals, testimony may come across as cooked up for the purpose of getting big numbers before a jury.⁴⁵

ADMISSIBILITY OF TESTIMONY ON HEDONIC DAMAGES IN COURTS

A number of law review and law journal articles discuss hedonic damages and the admissibility of such testimony.⁴⁶ Courts vary as to whether the loss of enjoyment of life is part of pain and suffering broadly defined, or whether it is a separate element of damages. Courts also vary as to the requirement that the victim be aware of the loss in order to allow for compensation.⁴⁷

The central question is whether information from a broad body of economic research stemming largely from the late 1960s can aid juries in assessing intangible losses. The Federal Rules of Evidence (FRE) adopted by Congress in 1975 allow testimony by an expert with special information that might assist a jury.⁴⁸ The relative weight of the testimony is to be debated

before a jury. The FRE constitute a more relaxed standard than the *Frye* test. The FRE are written so as to be generous in what is allowed in court, relying upon the adversary system of justice and the ability of counsel to present and counter expert testimony. They further rely on the ability of juries to evaluate the testimony. An expert's opinion is thus unlikely to be excluded unless it is unsupported and can offer no assistance to the jury.

The standard of Rule 702 is "helpfulness." The standard set by Rule 703 does not require that the methodology and opinions of the expert be "generally accepted." Rather it requires that the opinion be based on the type of evidence reasonably relied on by experts in that field or discipline.

Many courts have ruled that testimony on hedonic damages is helpful to the jury; economists have been admitted in dozens of trials. Of course, the daily life experience and background of jurors are also useful and important in coming to any conclusion. But individuals, industry, and governments expend resources on lifesaving in a profusion of ways in our contemporary American society: vaccines, highways, seat belts, workplace safety, drug labeling, and so on. This information is used by industry and government to manage society in many ways. Without testimony based on this information to guide them, jurors are unlikely to know the average value of life implied by these activities since the published statistical data in peer-reviewed economic journals are not normally accessible to them.

Almost all states allow damages for intangible losses in nonfatal injury cases. In Illinois and elsewhere, economic testimony has been offered and admitted many times in proving the loss of enjoyment of life due to disability in nonfatal injury. A few states, including Mississippi, Georgia, and Connecticut, now allow for the total loss of the enjoyment of life in death cases, as do some federal courts in U.S. Code 42, Section 1983 civil actions.

In a landmark ruling in *Molzof v. United States*,⁴⁹ in his first opinion as a Supreme Court justice, Justice Clarence Thomas wrote the majority opinion allowing for the loss of enjoyment of life in injury under the Federal Tort Claims Act. *Molzof* struck down the definition of punitive damages under the FTCA as any damages that go beyond compensating for actual pecuniary loss, reversing decisions in the 1st, 4th, 5th, 7th, and 9th U.S. Circuit Court of Appeals that limited damages in FTCA to actual pecuniary loss. Notably, *Molzof* overturned *Flannery v. United States*,⁵⁰ which held that there must be awareness in order for damages to be meaningful to victims in FTCA cases or else they would be punitive. Punitive damages are not allowed against the federal government under the FTCA. This ruling clearly foreshadows continued expansion of victims' rights to recover for intangible damages and, correspondingly, continued admissibility of testimony that will assist jurors in assessing such damages.

Economic testimony on the loss of the value of life was first admitted in *Sherrod v. Berry*, wherein U.S. District Judge George Leighton discussed at length the basis of his support for economic testimony on an existing element of economic damages, stating that it was "not speculative [but] relevant and material and would aid the jury."⁵¹ The defendants appealed on several grounds, including the admissibility of testimony on hedonic damages. The 7th Circuit Court of Appeals affirmed Judge Leighton's trial court ruling, stating:

It is well settled in this Circuit that Section 1983 permits recovery on behalf of the victim's estate for the loss of the life. The testimony of expert economist Stan V. Smith was invaluable to the jury in enabling it to perform its function of determining the most accurate and probable estimate of the damages recoverable for the hedonic value of Ronald's life.⁵²

The defendants appealed again, and the case was reheard by the entire court, *en banc*. Arguing that it was prejudicial error for the jury to have known that Sherrod was unarmed at the time he was killed, the court reversed the case and vacated the earlier decisions. However, at the rehearing no member of the court questioned the testimony on hedonic damages. Further, writing for the majority, Judge Coffey supported the earlier appellate opinion regarding admitting hedonic damages testimony:

We need not discuss the district court's other evidentiary rulings or jury instructions. We leave these questions for the district court on remand to decide in light of this court's prior discussion of those matters, specifically those found in our earlier vacated opinion.⁵³ (emphasis added)

While reversing *Sherrod* on other grounds, the *en banc* court took pains to emphasize its earlier opinion, which referred to the testimony on hedonic damages as "invaluable." Because a discussion regarding the admissibility of the testimony on hedonic damages was a significant part of both the trial and appellate panel opinions, this comment by the *en banc* court must be taken as an endorsement of the trial court's ruling for, and the vacated opinion's affirmation of, the admissibility and value of such testimony.

Over the past five years state courts in Cook County, elsewhere in Illinois, and in over a dozen other states have ruled that the underlying literature is valid, reliable, and scientific and that such testimony is admissible as a useful guide to the jury. Some courts have, however, rejected the testimony claiming a lack of validity and reliability. But as Miller's review of sixty-seven published empirical estimates shows, any significant subset of this literature would show the same result. The studies thus show significant agreement and consensus, establishing the validity and reliability of the estimates.

CONCLUSIONS

The ad hoc valuation methods that juries employ today to determine the loss of enjoyment of life, absent any economic testimony and without reference to objective standards of any sort, virtually ensure that there will rarely be equal justice under the law and that average awards will be inflated. Fairness and efficiency in dispute resolution thereby suffer, and verdicts can vary widely, from niggardly to runaway. Of course judges may compensate for egregious error, but the prospective variation alone leads to higher insurance premiums and higher pretrial settlements.

The win/lose lottery effect of personal injury awards also encourages trials rather than settlements, further adding to litigation and insurance costs. The frequent calls for caps on intangible damages are proof that society does not believe juries can commonly make appropriate awards for intangible damages with the information they currently have at hand. A ceiling on recovery is inferior to an educated jury as a tool for justice. Ceilings expropriate rights of the most grievously injured. Highly variable and sometimes runaway awards are to be expected when courtroom theatrics stirring compassion for either defendant or plaintiff substitute for facts regarding appropriate compensation for intangible losses. We would benefit collectively from more rational and informed jury decisions, with testimony that speaks to jurors' minds as well as their hearts.

Individually and as a society, we place significant value on the challenging and often difficult experience of being alive. Research shows that we routinely trade off life for other assets we value, such as money, pleasure, and convenience, but within limits. The emerging discussions of life value here stirred considerable controversy, as advancements in science do from time to time. Science upset the governing powers when Galileo and others proposed that the earth was not the center of the universe. The work of Newton, Darwin, Einstein, Adam Smith, and others created revolutions that caused further upset.

Measurements now show that, while life may be sacred, it is neither "priceless" nor "invaluable." Life *can* be valued. The inferred price is not only not infinite, but approximately one order of magnitude less than the price of a commercial jet airplane. This thinking is contrary to both our childhood learning and religious values and may partly explain some of the deep opposition to the use of the value of life in courts.

Obtaining a reliable estimate as to the value of life is no longer the question. Although estimates may continue to be refined over time, as in any area of economic statistics, the consensus of the evidence is that we value life

in the low, several million dollar dimension, even after subtracting for earnings and household service values.

A profound injury that has permanently deprived a person of his or her capacity to engage in life, taking into account changes in daily practical living, social and leisure activities, the loss of satisfaction from engaging in the occupations of choice, and the loss of internal emotional well-being, constitutes a significant loss to the victim which can be valued in monetary terms. If it is estimated that the victim has lost approximately 25 percent of the ability to experience life's value, it is an entirely valid, reliable and scientific approach to estimate that this person has lost 25 percent of the total value of the enjoyment of life as an estimate of loss due to permanent disability. For an average person of middle age, this figure could be approximately half a million dollars, apart from lost earnings capacity. Jurors are of course free to adjust or reject these and any other figures.

For many years, courts have admitted testimony by economists following an almost identical process of taking into account vocational rehabilitation disability estimates in forming wage loss estimates. This testimony does not invade the province of a jury. It is meant to serve as an aid, a tool, and a guide; it does not dictate a result. In the final analysis, jurors will take into account much more than the words of an economist or of any expert. By withholding from them the enlightening evidence of the value of life, we may risk unduly rewarding some plaintiffs and impoverishing some defendants. We also risk subsidizing some tortfeasors and depriving fair compensation to some of the victims. This is not a hallmark of justice.

It is inevitable that future research will continue to refine measurements of the value of life. How can this research move toward a more personalized estimate of this value? First, in death cases, research may examine factors that might account for variability in the capacity to enjoy life. A number of factors are candidates for study, including different capacities at different ages, wealth levels, discretionary time, family structure, psychological health, and specific personality factors. Second, research is needed to determine how a person's capacity to enjoy life may vary over time. In injury cases, additional work is needed to understand the different impairment levels, both physical and mental. Further, more research into behavior that compensates for injuries and other factors that affect injury recovery rates could greatly assist juries.

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NOTES

1. Robert Cooter and Thomas Ulen, *Law and Economics* (Glenview, IL: Scott, Foresman, 1988), p. 331.
2. For an analysis of precedents, trends, and practical courtroom techniques from a legal perspective, see Monty L. Preiser, Laurence Bodine, and Stanley E. Preiser, *Trial Manual for Proving Hedonic Damages* (Westport, CT: Lawpress Corp., 1992).
3. *Sherrod v. Berry*, 629 F. Supp. 159 (N.D.Ill. 1985); Affm'd, 827 F.2d 195 (7th Cir. 1987); Rev'd on other grounds, 856 F.2d 802 (7th Cir. 1988). For a discussion of this case see Stan V. Smith, "Hedonic Damages in Wrongful Death Cases," *ABA Journal*, 74 (Sept. 1988), 70-74.
4. Larry Bodine, "Hedonic Damages Catch On," *National Law Journal*, March 9, 1992, pp. 27-28. Also see Preiser, Bodine, and Preiser, *Trial Manual for Proving Hedonic Damages*.
5. Larry Bodine, interview, "Recovering for Loss of Enjoyment of Life," *Lawyer's Alert*, 11, No. 22 (November 11, 1991), 11-13, contains a listing of the state and federal circuit rulings.
6. See Michael L. Brookshire and Stan V. Smith, *Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys* (Cincinnati: Anderson Publishing, 1990), chap. 12, Appendix 2, and the 1992/3 Supplement for case citations.
7. *Thompson v. National Railroad Passenger Corp.*, C.A.Tenn., 621 F.2d 814.
8. *McDougald v. Garber*, 73 NY2d 246 (1989).
9. *Ruffino v. United States*, 829 F.2d 354 (2d Cir. 1987).
10. Adam Smith, *The Wealth of Nations* (East Canaan Edition, 1937), pp. 38-39.
11. Richard A. Posner, *Economic Analysis of Law* (Boston: Little, Brown, 1986), p. 182.
12. William M. Landes and Richard A. Posner, *The Economic Structure of Tort Law* (Cambridge, MA: Harvard University Press, 1987), p. 187.
13. Adam Smith, *The Wealth of Nations* (New York: Modern Library, 1937), book I, chap. 10.
14. Thomas Schelling, "The Life You Save May Be Your Own," in *Problems in Public Expenditure Analysis*, edited by S. B. Chase (Washington, DC: Brookings Institution, 1968), pp. 127-162.
15. The fact that these certain risk circumstances typically command far higher life values than low risk circumstances may be accounted for by the willingness to avoid pain, suffering, and mental anguish, factors which may play little or no role in willingness-to-pay values.
16. Joanne Linnerooth, "The Value of Human Life: A Review of the Models," *Economic Inquiry* 17 (January 1979), 52-74.
17. *Regulatory Program of the United States Government*, April 1, 1991-March 31, 1992 (Washington, DC: U. S. Government Printing Office).
18. Before the enactment of the Federal Rules of Evidence (FRE), the rule of *Frye v. United States* (293 F. 1013 D.C. Cir. 1923) required that every expert testimony be based on a methodology enjoying "general acceptance" in its particular field. As litigation became more complex and as technology advanced, it became clear that this form of peer review might block important testimony. Hence the FRE which do not require "general acceptance" were adopted.
19. Ted R. Miller, "Willingness to Pay Comes of Age: Will the System Survive?" *Northwestern Law Review* 83 (Summer 1989), 880.
20. Glenn Blomquist, "The Value of Human Life: An Empirical Perspective," *Economic Inquiry* 19 (January 1981), 157-164.

21. Clayton P. Gillette and Thomas D. Hopkins, "Federal Agency Valuations of Human Life: A Report to the Administrative Conference of the United States" (Washington, DC: U.S. Government Printing Office, April 1988).
22. Ann Fisher, Lauraine G. Chestnut, and Daniel M. Violette, "The Value of Reducing Risks of Death: A Note on New Evidence," *Journal of Policy Analysis and Management* 8, No. 1 (1989), 88-100.
23. Ted R. Miller, "The Plausible Range for the Value of Life: Red Herrings among the Mackerel," *Journal of Forensic Economics* 3, No. 3 (1990), 17-39. This paper and companion papers by W. Kip Viscusi, Stan V. Smith, and William Dickens were presented at the Annual Meeting of the National Association of Forensic Economists in Atlanta, December 1989, and Thomas Harvilesky wrote a short comment after the meeting; all are published in the same volume.
24. Ted R. Miller, "Plausible Range for the Value of Life," p. 18.
25. Gary R. Albrecht, "Issues Affecting the Calculated Value of Life," *Journal of Forensic Economics*, No. 2 (1992), 97-104.
26. See Michael L. Brookshire and Stan V. Smith, *Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys* (Cincinnati: Anderson Publishing, 1990), chap. 9, for sample calculations and questions for direct and cross examination, and chap. 11, Appendix I, for sample testimony.
27. Ed Berla, Michael L. Brookshire, and Stan V. Smith, "Hedonic Damages in Personal Injury: A Conceptual Approach," *Journal of Forensic Economics*, 3, No. 1 (1990), 1-8.
28. *Diagnostic and Statistical Manual of Mental Disorders III R* (Washington, DC: American Psychiatric Association, 1987), pp. 11-12, 18-20.
29. Ted R. Miller, "Plausible Range for the Value of Life," p. 33, and "Willingness to Pay Comes of Age," pp. 897-898.
30. See Michael L. Brookshire, Stan V. Smith, and Charles de Seve, *Economic/Hedonic Damages—1991/2 Supplement* (Cincinnati: Anderson Publishing, 1991), chap. 9, p. 45, contains a table created by Dr. George Parsons, Associates for Psychological Resources, Cincinnati, OH. See also Ed Berla, Michael L. Brookshire, and Stan V. Smith, "Hedonic Damages in Personal Injury," *Journal of Forensic Economics*, 3, No. 1 (1990), 3, for a similar table.
31. See Brookshire, Smith, and de Seve, *Economic/Hedonic Damages—1991/2 Supplement*. Chapter 9 contains a sample calculation; chap. 11 contains sample testimony.
32. Randall R. Bovbjerg, Frank A. Sloan, and James F. Blumstein, "Valuing Life and Limb in Tort: Scheduling 'Pain and Suffering,'" *Northwestern Law Review*, 83 (1989), pp. 908-976.
33. See William T. Dickens, "Assuming the Can Opener: Hedonic Wage Estimates and the Value of Life," *Journal of Forensic Economics*, 3, No. 3 (1990), 51-59.
34. See W. Kip Viscusi, "The Econometric Basis for Estimates of the Value of Life," *Journal of Forensic Economics*, 3, No. 3 (1990), 61-70.
35. See Stan V. Smith, "Hedonic Damages in the Courtroom Setting—A Bridge Over Troubled Waters," *Journal of Forensic Economics*, 3, No. 3 (1990), 41-49.
36. Paul Slovic, Baruch Fischhoff, and Sarah Lichtenstein, "Rating the Risks: The Structure of Expert and Lay Perceptions," *Environment*, 21 (April 1979).
37. Walter Oi, "Safety at Any Price?" *AEI Journal on Government and Society* (Washington, DC: November/December 1977), 18-19.
38. Ronald B. Ehrenberg and Robert S. Smith, *Modern Labor Economics*, 2d ed. (Glenview, IL: Scott Foresman, 1988), pp. 258-281.
39. Ehrenberg and Smith, 4th ed. (1991), p. 360.
40. Joanne Linnerooth, "The Value of Human Life: A Review of the Models," *Economic Inquiry*, 17 (January 1979), 52-74.

41. Statement made by W. Kip Viscusi during the public question-and-answer session following the "Valuing Life in the Courts" program at the annual meeting of the National Association of Forensic Economists/American Economic Association Session, Atlanta, GA, December 29, 1989, 2:30 P.M.
42. Statement made by William T. Dickens during the public question-and-answer session cited in note 41.
43. See Paul H. Rubin, "The Next American Tort Crisis," *Wall Street Journal* (December 28, 1989), A8, C4.
44. Aside from Miller (notes 19 and 23) and Viscusi (note 34), see Lauraine G. Chestnut and Daniel M. Violette, "The Relevance of Willingness-To-Pay Estimates of the Value of a Statistical Life in Determining Wrongful Death Awards," *Journal of Forensic Economics*, 3, No. 3 (1991), 75-89, where the authors argue that such values are potentially useful in placing a dollar figure on the nonfinancial losses to the deceased or to survivors; see also Jerome M. Staller, "Hedonic Damages—How to Assess 'Life's Pleasures,'" *Pennsylvania Law Journal-Reporter*, 8, No. 1 (January 7, 1985), 1, 11. Staller concludes that hedonic damages can be used to measure the loss of seriously injured people.
45. John R. Glennie, "Hedonic Value: Economists Can Assist with Proof," *National Law Journal* (September 5, 1988), 15-17.
46. Charles D. Blount, "Hedonic Damages: Compensation for the Lost Pleasure of Living," *Cooley Law Review*, 5 (1988), 861-886; Thomas E. Courtney, Jr., "Wrongful Death Damages in California: On the Brink of Full Compensation," *San Diego Law Review* 24 (1987), 1003; Patrick Gaughan and Richard Ruth, "Hedonic Damages: Quantifying the Loss," *Supplement-New Jersey Law Journal* (November 22, 1989), 49-59; Pam J. Hermes, "Loss of Enjoyment of Life—Duplication of Damages Versus Full Compensation," *North Dakota Law Review*, 63 (1987), 561-600; Andrew Jay McClurg, "It's a Wonderful Life: The Case for Hedonic Damages in Wrongful Death Cases," *Notre Dame Law Review*, 66 (1989), 57; Erin A. O'Hara, "Hedonic Damages for Wrongful Death: Are Tortfeasors Getting Away With Murder?" *Georgetown Law Journal*, 78 (1990), 1687; John Anthony Williamson, "Hedonic Damages in Section 1983 Cases: A Remedy for the Unconstitutional Deprivation of Life," *Washington and Lee Law Review*, 44 (1987), 321; Robert E. Murdock, "Hedonic Damages in Survival Actions," *Court Review*, 27, No. 4 (Winter 1990), 11-23 (American Judges Association 1990 Law Student Essay Contest winning entry); John C. Wunsch, "Hedonic Damages: Proving the Loss of Enjoyment of Life," *Insurance Settlements Journal* (Winter 1990), 36-42; William J. Gillen and Bruce A. Olson, "Economic and Legal Defenses Against Claims for Hedonic Damages" *For the Defense*, January 1991, pp. 18-25; Thomas A. Moore, "Loss of Enjoyment of Life," *Trial* (September 1989), 58-61.
47. Gary A. Magnarini and Stan V. Smith, "Hedonic Damages, Recoverability, Proof and Valuation in Personal Injury, Survival and Wrongful Death Actions in Wisconsin," *Wisconsin Lawyer*, 64 No. 2 (February 1991), 17-19, 56-58.
48. Michael V. Ciresi and Martha K. Wivell, "Protecting Your Evidence Against 'Junk Science' Attacks," *Trial* (November 1991), 35-40.
49. *Molozof v. United States* No. 90-838, Supreme Court of the United States, 1992 U.S. Lexis 373, November 4, 1991, argued, January 14, 1992 decided.
50. *Flannery v. United States*, 718 F.2d (4th cir. 1983), cert. den'd, 467 U.S. 1226, 104 S. Ct. 2679, 81 L.Ed.2d 874 (1984).
51. *Sherrod v. Berry*, 629 F.Supp. 159,162 (N.D.Ill. 1985).
52. *Sherrod v. Berry*, 827 F.2d 195,206 (7th Cir. 1987).
53. *Sherrod v. Berry*, 856 F.2d 802,807 (7th Cir. 1988).