

The Law and Economics of Tort Damages

By Mark A. Glick

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It has become fashionable these days to rebuke the tort system for overcompensating the victims of accidents. "Runaway litigation," it is said, is increasing costs to businesses, and, in particular, insurance costs. In my opinion, economic analysis can support an opposite view. The approach taken by most courts, including Utah courts, to computing tort damages inherently undercompensates victims of accidents. Such undercompensation also encourages socially inefficient behavior and thus subverts a fundamental goal of the tort system.

An example will illustrate the basic problem. Suppose that a law professor earning \$100,000 is offered a position at a downtown law firm at a salary of \$200,000. He decides to turn down the offer because he values the lifestyle he has established at the university. At the university, the professor works 40 hours per week, but at the law firm, at least 70 hours would be expected. Unfortunately, shortly following his decision to stay at the university he is killed by a negligent driver. At trial, economic testimony establishes that the value of this life is \$1 million, based on the fact that he had ten additional years to live (i.e., $10 \times \$100,000$, and ignoring discounting). His spouse is therefore awarded \$1 million. However, had the professor accepted the downtown job, the very job that he believed would have reduced the value of his life, the value of the professor's life for purposes of compensation would have been calculated at \$2 million ($10 \times \$200,000$). Obviously, something is wrong! What is wrong is that the economic testimony in my example valued only the 40 hours per week that the professor worked, and did not include any value for the 128 hours that he did not work. Put differently, the general method of damage



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calculation accepted by Utah courts underestimates the real value of life by failing to include the value of non-work related activities. Thus, under current law, an important individual interest, "the enjoyment of life" lacks an adequate legal and economic basis for compensation. See Neil Komesar, *Toward a General Theory of Personal Injury Loss*, 3 J. Leg. Stu. 457 (1974).

This typical approach to valuing injuries or valuing life clearly conflicts with a central objective of the tort system itself. One fundamental goal of the tort system is to deter risky or dangerous behavior by creating incentives to take proper precautions. Economic analysis suggests that precaution should be taken up to the point where the

cost of any additional precaution is equal to the expected damage that would result in the absence of such precaution. For example, suppose that increasing driving speed from 50 to 60 MPH results in a .001 increased probability of an accident causing \$10,000 of damage. The expected damage is therefore \$10 ($.001 \times \$10,000$). If the cost to the driver of reaching his destination a few minutes late is \$8, then it is socially efficient for him to drive slower.

The law of negligence embodies this very logic. In *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947), Judge Hand held that an injurer is negligent only if the cost of precaution "B" is less than the probability of injury "P" multiplied by the amount of the potential damage "L", or when $B < PL$.¹ Utah courts have adopted this approach to negligence. See *Shute v. Moon Lake Electric Assn.*, 899 F.2d 999, 1003 (10th Cir. 1990) (quoting *Little v. Utah State Div. of Family Services*, 667 P.2d 49, 54-55 (Utah 1983)) (applying Hand formula to determination of duty). The integrity of the tort system in Utah depends on whether actual damages awarded in negligence cases closely approximate "L". Undercompensation of victims results in inadequate social incentives to undertake the proper level of precaution.²

CALCULATION OF DAMAGES IN INJURY

At present, an injured plaintiff in Utah can recover for (1) out of pocket expenses such as medical costs, property damages and the cost of household help, (2) lost income, (3) pain and suffering, and (4) disfigurement or loss of bodily functions. See *Duffy v. Union Pac. R.R. Co.*, 218 P.2d 1080 (Utah 1950); *Paul v. Kirkendall*, 261 P.2d 670 (Utah 1953).³ Under Utah law there is no recovery for loss of consortium. Utah Code Ann. §30-2-4 (1995); *Hackford v. Utah Power & Light Co.*, 741 P.2d 1281 (Utah 1987).

The focus of the damage phase in most accident cases is lost income. My experience has been that even the calculation of lost income is typically not performed in an appropriate fashion. The approach endorsed by most labor economists begins with the construction of an "age-earnings profile." Studies of lifetime earnings reveal that income and productivity rise at a diminishing rate to a point and then decline, reflecting the fact that productivity is related in part to experience and training. Specific age earning profiles vary from job to job. In some occupations, work experience adds very little to an individual's skills after a relatively short initial period of learning. Other jobs (think trial attorney) provide valuable learning experiences over many years, resulting in continued earning increases.

Moreover, it is improper to assume that injured persons would have remained in a single occupation. Occupational data reveal definite patterns of movement between occupations, and these patterns should be taken into account in calculating lost income. Probably the best source of data for constructing age-earnings profiles

and accounting for occupational mobility comes from the Census of Population. A 5% sample of the census is available that provides the relevant information for a wide variety of occupations and worker characteristics.⁴ One shortcoming of this data is that it does not include fringe benefits. A good complementary source of data for fringe benefits is the Utah State Compensation Survey, available from the Utah Department of Employment Security. The survey estimates that the average level of fringe benefits in Utah is approximately 32% of wages.

The source of most controversy among contending experts is typically the procedure for discounting earnings, despite the fact that most studies find that discounting procedures and discount rates make very little difference to the bottom line. See, e.g., Michael Brody, Note, *Inflation, Productivity, and the Total Offset Method of Calculating Damages for Lost Future Earnings*, 49 Univ. of Chi. L. Rev. 1002 (1982); Gary Anderson and David Roberts, *Economic Theory and the Present Value of Future Lost Earnings: An Integration, Unification, and Simplifica-*

tion of Court Adopted Methodologies, 39 Univ. of Miami L. Rev. 723 (1985). Since the age-earnings profile takes account of future productivity, the only further adjustments that must be made to obtain an accurate lost income estimate are an inflation adjustment and an adjustment for the time value of money. See *Jones & Laughlin Steel Corp. v. Pfeifer*, 462 U.S. 523 (1983) (considering the effects of inflation and interest rates on damage awards); Ralph Brown and Dennis Johnson, *Wrongful Death and Personal Injury: Economics and the Law*, 29 South Dakota L. Rev. 1 (1983).

The inflation adjustment is simple, and requires only the consistent application of nominal or real variables. If real income estimates are used to estimate lost future income, then the real interest rate must also be used to discount future earnings to present dollars (thereby adjusting both income and the discount rate for inflation). If nominal income estimates are employed, then the nominal interest rate should be used to discount earnings (and therefore inflation cancels out because it is contained in both the numerator and denominator of the equation).

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Discounting of future earnings to present dollars is important because by investing his lump sum award and drawing interest, a plaintiff could be overcompensated. The discounting process eliminates the interest component of the award, taking into account the fact that the plaintiff can and will invest the damage award. It is important to recognize that there is no "correct" discount rate to use in this process. Since the victim's receipt of income was risky (such as losing his job) had he not been injured, the discount rate employed should not be a riskless rate of interest.

Which interest rate to use, however, is a matter of judgment. Economists often quibble over whether one should take an average of past interest rates or use the current rate of interest (for the appropriate term of investment) to discount lost earnings. The answer depends on whether or not you believe that financial markets are efficient. If you believe that markets are efficient, then the current interest rate should best predict the future rates at which the plaintiff's money will draw interest. If you believe they are not, then

some average of past behavior will best predict the future. See Kurt Kreuger and John Ward, *The Fallacy of Fairness & the Plight of Prediction in Discounting Future Dollars* (1996) (unpublished manuscript). Finally, even though compensatory damages are exempt from income tax, Utah courts have directed that pretax, not posttax, lost earnings should be awarded. See *Davidson v. Prince*, 813 P.2d 1225 (Utah App. 1991).

Even an accurately calculated award based solely on lost income undercompensates an injury victim. The reason is that, as a result of the injury, the victim will derive less utility or enjoyment from an identical level of income compared to the pre-injury situation. Accordingly, the victim should receive additional income to compensate for this loss of utility. Specifically, full compensation ideally makes the victim indifferent between the situation before the injury and the situation after the injury. See Robert Cooter and Thomas Ulen, *Law and Economics* 346 (1988). It is unlikely that this additional income will be properly estimated or awarded under the remaining categories of pain and suffering or household services cognizable by the Utah courts.

can then be used to approximate the value of the household services that are now lost because of the injury. See Cathleen Zick and W. Keith Bryant, *Alternative Strategies for Pricing Home Work Time*, 12 Home Econ. Res. J. 133 (1983).

Moreover, despite claims by Utah courts to the contrary, enjoyment of life is a concept distinct from pain and suffering. See *Judd v. Rowley's Cherry Hill Orchards, Inc.* 611 P.2d 1216, 1221 (Utah 1980) ("[i]ncluded in mental pain and suffering is the diminished enjoyment of life"). The problem with pain and suffering is that both concepts are closely tied to the injury itself. The level of physical pain that the victim can be expected to experience is closely linked to the nature of the injury. In the eyes of the juror, the answer to the question "how much does it hurt" will likely come from consideration of the injury itself. The concept of suffering is closely connected to the concept of pain, but may include mental suffering as well. Again, as a practical matter, jury assessments of the intensity and duration of suffering closely associate it with the corporeal injury. Moreover, the categories of proof for enjoyment of life and pain and suffering are distinct. For example, compare the case of two artists of equal talent, each of whom loses an arm as a result of negligence. The first artist has an arm surgically severed by mistake at the hospital, while the second has an arm mangled in an auto accident. The loss of enjoyment of life would focus on the activities of life before the injuries, while the pain and suffering analysis focuses on the physical and mental response to the injury itself. When these separate categories are combined inevitably, the second artist is likely to receive the larger award for pain and suffering regardless of the pre-injury evidence.

WRONGFUL DEATH

The difficulties described above are amplified in wrongful death actions. The common law rule was that there was no recovery for wrongful death.⁵ The Utah Constitution reversed this rule providing that the "right of action to recover damages for injuries resulting in death, shall never be abrogated . . ." Utah Const. Art. XVI, § 5. Two Utah statutes further provide for the right to recover for wrongful death. Section 78-11-6 allows suit by a parent or guardian in the case of injury or death of a child,



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"Moreover . . . enjoyment of life is a concept distinct from pain and suffering."

Awarding compensation for lost household services will certainly not do the trick. Household services are valued by forcing them into one of the two legal categories, out-of-pocket expenses or lost income. To resolve household services into out-of-pocket expenses, one values household services as the cost of hiring such services in the market. To pigeonhole household services into the lost income category, household services are alternatively valued according to the "opportunity cost" method. The opportunity cost method values household services as the value of the next best opportunity the household worker had to forego. For example, if a lawyer voluntarily leaves practice to work at home, he or she obviously values the experience at home higher than the lost income from the law practice. The foregone law practice income

and Section 78-11-7 permits recovery by an heir or personal representative in the event of the death of an adult. Utah Code §§ 78-11-6 - 7 (1992 & Supp. 1995). The categories of recovery in Utah for wrongful death are summarized most succinctly in *Allen v. United States*, 588 F. Supp. 247, 445 (D. Utah, 1984), *rev'd on other grounds*, 816 F.2d 1417 (10th Cir. 1987):

In summary, it appears that four elements are ordinarily considered in determining compensation to survivors in wrongful death actions in Utah: (1) loss of support; (2) loss of assistance and service to the family; (3) loss of society, companionship and happiness of associations; and (4) loss of the possibility of inheritance, if the decedent is an adult. Survivors are not entitled to recover compensation for the pain and suffering of the decedent.

Id. at 445.

In wrongful death cases, judicial analysis typically focuses on the survivor, not the value of the life of the person killed. It is this misconception that leads to a thicket of problems. The calculation of damages in a wrongful death case usually begins with an estimate of the size of loss of support. The loss of support calculation starts with the analysis of lost income described above, but then deducts the expenses that would have been consumed by the decedent. Expenditures on "public goods" that can be simultaneously consumed by the decedent and the survivors should not be deducted. Public goods account on average for 41.6% of household income. See Xiaojing Jessie Fan, *Ethnic Differences in Preference Structure and Budget Allocation Patterns* (1993) (unpublished Ph.D. dissertation, Ohio State University). The remaining income is then split between the decedent and the survivors. This calculation also takes account of any inheritance because it awards to the survivors any income not consumed by the decedent. Loss of assistance and service to the family and loss of society and companionship are categories not typically subject to economic analysis and usually linked to the income loss quantity.

From an economic point of view the *Allen* approach is seared with ambiguity. First, no account is taken of the fact that the survivor will probably remarry. Why should we assume that the decedent was

not replaceable? Second, the analysis focuses only on what economists would call the positive externalities of the decedent's life on the survivors. As morbid as it seems, there could be benefits to the survivors of the death of the decedent as well. Perhaps most significantly, the focus on income promotes a kind of caste system branding the lives of low or no wage earners as worth less than higher income individuals. Moreover, the present approach to wrongful death seriously impairs the tort system's effort to create efficient incentives. For example, consider the perverse incentives created solely by the fact that the recovery from wrongful death may very likely be smaller than the recovery for a serious injury. This result sends the economic message that one should take less precaution to avoid killing someone than to avoid permanently injuring them. Similarly, the rational injurer should take less precaution to avoid killing a child (with no income) than a working adult.

"From an economic point of view, the Allen approach is seared with ambiguity."

The remedy to these inconsistencies is to remove the focus of the analysis from the survivors and place it directly on the value of the loss of life that was taken. Indeed, many courts have already recognized the infirmities of the traditional wrongful death approach and have allowed hedonic damages, or the damages resulting from the loss of life to the decedent, as a separate category of damages in wrongful death cases. See, e.g., *Feldman v. Allegheny Airlines, Inc.*, 452 F. Supp. 151 (D. Conn. 1978) (loss of earning capacity and loss of the capacity to carry on life's nonremunerative activities must be valued independently); *Sherrod v. Berry*, 827 F.2d 195 (7th Cir. 1987) (42 U.S.C.A. § 1983 permits recovery for the hedonic value of human life), *rev'd on other grounds*, 856 F.2d 802 (7th Cir. 1988). Utah should follow this trend.

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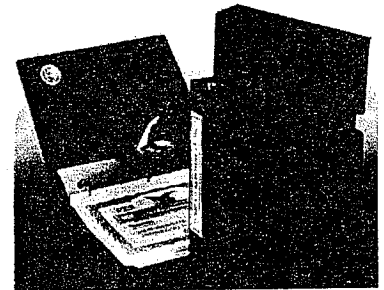
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loss of the enjoyment of life. This literature has steadily advanced in sophistication every decade. In the 1970s, research was primarily directed at developing a meaningful economic analysis of life. During the 1980s, economists began to perfect the econometric issues involved in performing empirical analysis, and then used the resulting empirical findings for policy making. Indeed, the value of life approach is now mandated by the Office of Management and Budget as the standard analysis for all new major federal regulations. Executive Order No. 12,498, 50 Fed. Reg. 35,989 (1985). Curiously, this literature has not found its way into the court room.

There are two methods of directly estimating the value of life or serious injuries: (i) market statistical studies, and (ii) contingent valuation surveys. Market statistical studies of the value of life or injuries rely on inferences from the observations of how people react to variation in the risk of death or serious injury. For example, suppose that it is observed that the average worker demands \$20 additional salary to accept a job that increases the risk of death by 1/100,000. This means that if there are 100,000 workers, each is willing to pay \$20 to accept the death of one worker. Accordingly, the value of that life must be \$2 million (\$20 x 100,000). By studying the market behavior of people when making consumption or labor market decisions in the face of quantifiable risks, economists have produced a wide range of studies of how we implicitly value life.⁶

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The majority of estimates for the value of life fall within a range of \$3 to \$7 million. See W. Kip Viscusi, *The Value of Risks to Life and Health*, 31 J. of Econ. Lit. 1912 (1993) (surveying the studies). Using the same methodology, economists have also placed values on a wide range of specific injuries. *Id.*

Market statistical studies suffer from several shortcomings. Chief among them is that people often systematically misunderstand risk or fail to act in a rational manner. There is a pronounced tendency to overestimate low-probability events (I do this every time I get on an airplane) and underestimate some larger risks (failure to use seat belts or smoking). While these errors tend to be systematic, economists have only recently attempted to incorporate such factors into their analysis.⁷

“ . . . victims in Utah are being systematically undercompensated [not] overcompensated. . . ”

An alternative method of obtaining information concerning the value of life or an injury is called the contingent valuation method. Contingent valuation involves the use of sample surveys to gauge the willingness of respondents to pay to avoid risk of injury or death. The name of the method derives from the fact that the values revealed by respondents are contingent upon the simulated market situation presented in the survey. On theoretical grounds this method is superior to the market statistical method because it can take account of all of the intervening factors that can potentially bias the real life situation. In this respect it resembles a laboratory experiment. The principal drawback of the method is that there is no assurance that the investigator will receive reliable responses from the survey. However, economists have become very sophisticated in their survey approaches, and today most experts in the area believe that information from contingent valuation methods are reliable.⁸ The estimates of the value of life resulting from contingent valuation studies also appear to fall within a similar range as the results of the market statistical studies. Like the market statistical studies,

several contingent valuation studies have also focused on the value of particular injuries. In Utah, one of the most common injuries is to a victim's back and neck. The author is currently in the process of developing a contingent valuation study of back and neck patients at the University of Utah hospital and will make the results available to the Utah Bar once the study is concluded.⁹

While the findings of economists studying value of life and of particular injuries is not flawless, these results are conceptually superior to the methods currently employed to calculate damages in Utah. Moreover, the intellectual technology in this area continues to advance. Particularly striking is the fact that even the lowest bound of the results derived from either market statistical studies or contingent valuation surveys produce much higher damage estimates for injured plaintiffs or the value of a decedent's life than does the traditional income approach. One can only infer from the numbers that victims in Utah are being systematically undercompensated, rather than overcompensated as popular belief would have it.

¹ Actually, the correct standard compares marginal rather than absolute quantities as Hand suggests. However, since record evidence is usually only available for small changes in these quantities, the Hand formula closely approximates the correct economic formula in practice.

² The fact that people are deterred by the threat of liability is evidenced by taking appropriate steps that assure that their diagnosis is accurate (often referred to as “defensive medicine”). See also “Tame Aggressive Drivers” *Salt Lake Tribune*, Aug. 11, 1996, page AA-7 (asserting that drivers in Salt Lake City take insufficient care while driving).

³ Because none of these courts asserted that the four categories of recovery are exclusive, additional areas of recovery may be possible. See *Cruz v. Montoya*, 660 P.2d 723, 726 (Utah 1983).

⁴ U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, 1993 *Census Catalogue and Guide* 237.

⁵ The rule stemmed from Lord Ellenborough's infamous dictum in *Baker v. Bolton*, 170 Eng. Rep. 1033 (1808) (“[i]n a civil court, the death of a human being could not be complained of as an injury”).

⁶ If you believe that there is no price that can be put on life, that life should not be traded at any price, ask yourself whether you would give your life for your country, your children, or the greater good.

⁷ In addition, these studies are limited by the availability of appropriate data.

⁸ For example, the Department of Commerce asked two Nobel laureates, Kenneth Arrow and Robert Solow if they would chair a panel of experts to answer the following question: Is the contingent valuation method capable of providing reliable estimates of damages in the natural resource context. The report was published in the *Federal Register* on January 15, 1993. It concluded that contingent valuation studies provide reliable enough estimates to be a starting point of a judicial process of damage assessment. 58 Fed. Reg. 4601 (1993).

⁹ Indeed, the value of life approach and the traditional income base approach to valuing injuries or life need not be inconsistent. Counsel may want to employ an expert to provide traditional damage calculations and supplement such testimony with an economist who can explain that such calculations are a floor, at best, to the true level of compensatory damages.