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# UNCERTAINTY AND THE LAW OF DAMAGES

ELMER J. SCHAEFER\*

Frequently a plaintiff claims a loss of future earnings but cannot prove with certainty just what those earnings would have been in the absence of his injury. Today the law of damages permits one of two responses in this situation. Either damages for the loss of future earnings are excluded entirely on the ground that their amount is too speculative, or damages are awarded as if the amount of the loss were certain. The all-or-nothing quality of these damages law alternatives has been the subject of considerable criticism by legal writers.<sup>1</sup>

In an economic sense, any opportunity to receive future earnings has an element of uncertainty which makes that opportunity less valuable. For the most part, however, courts have not used the tools of economic and financial analysis developed to analyze the effect of uncertainty on the value of a stream of earnings. This Article proposes that a lesser amount of damages be awarded for a plaintiff's lost opportunity to receive earnings if that opportunity cannot be proven to have been a certainty. This proposal would resolve many of the difficulties presented by the current all-or-nothing dilemma. Moreover, the theory expounded in this Article is not without precedent. Some courts have responded to uncertainty by reducing the amount of damages that otherwise would have been awarded.

## THE THEORY OF DISCOUNTING FOR RISK

A dollar to be paid in the future is worth less than a dollar payable today.<sup>2</sup> Aside from the expected effects of inflation, this is true for two reasons. First, as long as a positive rate of interest prevails, money has a time value. One thousand dollars invested today at five percent interest will yield \$1,050 at the end of the year. Logically, a person given a choice of receiving \$1,000 today or \$1,000 one year

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1. See note 70 *infra* & accompanying text.

2. See V. BRUDNEY & M. CHIRELSTEIN, CASES AND MATERIALS ON CORPORATE FINANCE 34 (1972).

from now invariably will choose to receive the amount today. The availability of a positive rate of interest on money that is certain to be repaid is the result of two forces. People on balance prefer to consume immediately rather than to wait to do so, and resources today can be used to make investments in goods which will increase productivity tomorrow.<sup>3</sup> A second reason why a sum of money payable in the future is less valuable than that same sum payable today is that, as a practical matter, the receipt of a future payment rarely is an absolute certainty.<sup>4</sup> In making investment decisions, most people are risk-averse. Therefore, the present value assigned to amounts that might have been received in the future should be discounted to reflect the uncertainty as to whether they would have been received.<sup>5</sup>

The process of discounting is merely the reverse of compounding interest.<sup>6</sup> A deposit of \$614 in a savings account at five percent interest compounded annually will grow to \$1,000 in ten years or, in other words, the present value of \$1,000 payable in ten years discounted at five percent is \$614. Similar discounting calculations can be done by consulting the appropriate interest tables.<sup>7</sup>

The choice of a discount rate can make a substantial difference in the present value assigned to an income stream. Discounted at five percent, the present value of \$1,000 payable in fifteen years is \$481. By comparison, \$1,000 payable after the same number of years but discounted at twenty percent is not even \$65.<sup>8</sup> Choosing the appropriate discount rate, therefore, involves two major considera-

3. Cf. J. HIRSHLIEFER, INVESTMENT, INTEREST, AND CAPITAL 31-34 (1970).

4. BRUDNEY & CHIRELSTEIN, *supra* note 2, at 33.

5. Because of risk-aversion, an uncertain prospect, the returns on which are immediate, should still be discounted for uncertainty. Cf. note 21 *infra*.

6. BRUDNEY & CHIRELSTEIN, *supra* note 2, at 34. The formula for compounding interest is  $A = p(1+r)^t$ , where  $A$  is the future amount,  $p$  is the principle,  $r$  is the interest rate, and  $t$  is the number of years.

The discounting formula for a single sum is:  $p = \frac{A}{(1+r)^t}$ , where  $p$  is the present value,  $A$  is the future amount,  $r$  is the discount rate, and  $t$  is the number of years until the receipt of  $A$ . *Id.*

The discounting formula for an annual income stream is:  $p = \sum_{t=1}^n \frac{A}{(1+r)^t}$ , where  $p$  is the present value,  $A$  is the annual income,  $r$  is the discount rate, and  $t$  is an index used to identify each time period (year) of the  $n$  total number time periods (years). See Lebrez & Kreidle, *The Present Value of Lost Wages—Explanation and Application*, 64 ILL. B. J. 424, 426 (1976) [hereinafter cited as *Present Value of Lost Wages*].

7. See, e.g., BRUDNEY & CHIRELSTEIN, *supra* note 2, at 35-37. Throughout this Article the discounted and compounded values have been computed from tables on the above pages.

8. See *id.*

tions. First, the rate must reflect the time value of money as measured by the risk-free rate of interest. If relatively riskless investments such as United States Treasury obligations are paying four percent interest, then a future sum of money the payment of which is guaranteed should be discounted at four percent to compute its present value. Certain payment of \$1,000 in ten years would be worth \$676 today because that amount could be invested safely at four percent and, after ten years, would yield \$1,000. Because risky future payments are less valuable than certain future payments, however, the discount rate should be adjusted upward by a "risk premium" to reflect the risk associated with future payments.<sup>9</sup> In the previous example, if the prospect of receiving the \$1,000 at the culmination of ten years is somewhat uncertain, the discount rate should be four percent, plus whatever additional percentage is necessary to reflect that uncertainty. If the risks associated with an opportunity to receive \$1,000 are similar to the risks of a corporate bond paying six percent interest, the discount rate should be increased accordingly to six percent. The present value of \$1,000 payable in ten years and discounted at six percent is \$558, as compared to \$676 if discounted at four percent. Exactly how much the discount rate should be altered to reflect risk is a matter of judgment; clearly, however, the greater the perceived risk, the higher the discount rate and, consequently, the lower the present value.<sup>10</sup>

Several definitions developed for financial analysis can be useful in finding the present value of an uncertain income stream. Uncertainty as to an income stream may be thought of as implying that there are a number of possible outcomes for earnings in any year, some outcomes perhaps more likely to occur than others. What then

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9. Because risky future payments are less valuable than certain ones, it is proper to increase the discount rate and thus reduce the present value of a future payment in proportion to the perceived amount of risk: the greater the risk, the greater the risk premium added to the discount rate.

10. Adding a risk premium to the discount rate to adjust for uncertainty assumes in effect that uncertainty is compounded in each successive year at a steady rate. Because this assumption may be false, strict accuracy would call for separate discounting for uncertainty of each year's expected returns. See Robichek & Myers, *Conceptual Problems in the Use of Risk-Adjusted Discount Rates*, 21 J. FINANCE 727, 727-29 (1966). For most damages problems the assumption that uncertainty increases with each succeeding year is plausible. Using risk-adjusted discounted rates to allow for uncertainty is computationally simple. Moreover, selection of a discount rate in calculating damages can be guided by a comparison with rates assigned in the market to opportunities involving a comparable amount of risk. A body of precedent as to the principles for selecting a discount rate can be expected to develop.

does it mean to say that earnings will be a particular sum of money? Very often in everyday speech future earnings are predicted to be a given amount without any precise idea of the relationship of that amount to the wide range of possible outcomes that the speaker anticipates may occur.<sup>11</sup> Modern financial theory measures the risk in an opportunity to receive earnings by using the "expected value," or "mean earnings," of the opportunity. The expected value is a weighted average of all the possible outcomes, the weight assigned to each outcome being determined by the likelihood of its occurrence.<sup>12</sup> For example, if there is a forty percent chance that earnings would be \$10,000, a thirty percent chance that earnings would be \$20,000, and a thirty percent chance that earnings would be \$30,000, the expected value of this earnings opportunity would be \$19,000.<sup>13</sup> The expected value, which gives due weight to each possible outcome, can be thought of as the "average outcome," a measure of the central tendency of earnings.

An earnings opportunity can be considered risky if there is a significant probability of an outcome that differs dramatically from the central tendency of earnings. A more precise notion of risk can be obtained by again drawing upon modern financial theory to define risk as the "variance" of the possible outcomes in terms of the expected value of these outcomes. Specifically, the variance of an earnings opportunity can be computed by subtracting each possible outcome from the expected value of the opportunity, squaring that difference, and weighting each squared term by the probability of the associated outcome. The weighted sum, called the variance, is a measure of the tendency of the potential earnings to differ from the expected value of the opportunity.<sup>14</sup> This measure very frequently is used to define risk in financial analysis.<sup>15</sup> Its importance

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11. See BRUDNEY & CHIRELSTEIN, *supra* note 2, at 55-56, who point out that the SEC report in *In re Atlas Pipeline Corp.*, 9 S.E.C. 416 (1941), though estimating earnings at \$130,000, exhibits confusion as to whether that estimate represents a maximum, a minimum, or some sort of average of the figures that earnings might have been expected to attain.

12. See, e.g., BRUDNEY & CHIRELSTEIN, *supra* note 2, at 55.

13. The expected value is equal to  $.40 \times \$10,000 + .30 \times \$20,000 + .30 \times \$30,000$ , or \$4,000 + \$6,000 + \$9,000, for a total of \$19,000.

14. See, e.g., J. VAN HORNE, *FINANCIAL MANAGEMENT AND POLICY* 24 (4th ed. 1977). The variance of the earnings opportunity defined at note 13 *supra* and accompanying text may be calculated as follows:  $.40 \times (10,000 - 19,000)^2 + .30 \times (20,000 - 19,000)^2 + .30 \times (30,000 - 19,000)^2$ , which equals 69,000,000.

15. A considerable body of financial analysis holds that the correct measure of risk for an investment opportunity should not be the variance, but "beta," an index of the extent to

in the analysis that follows does not lie in any advantage to be gained from calculating it, but rather in the focus it provides for intuitive notions of riskiness.<sup>16</sup> Judgments about the degree of risk associated with an income opportunity can be made by asking "How much might earnings be expected to fluctuate?" or "How likely is it that earnings will be substantially lower than the mean?"<sup>17</sup> Both the expected value, as a weighted average of possible outcomes, and risk, as a measure of the likelihood of an outcome far from the expected value, play a role in adjusting the value of an income opportunity to account for uncertainty. Suppose that earnings are very likely to be \$20,000, but there is a twenty percent probability that earnings will be only \$10,000. The expected value of this opportunity is not \$20,000; a deduction must be made for the twenty

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which the riskiness of the opportunity cannot be avoided by diversification in the stock market. See VAN HORNE, *supra* note 14, at 59-65; J. LORIE & M. HAMILTON, *THE STOCK MARKET* 204-27 (1973). Because "beta" for an opportunity is hard to assess intuitively, its usefulness in damages cases seems limited.

16. See, e.g., *Aldon Indus., Inc. v. Don Myers & Assocs.*, 517 F.2d 188, 193 (5th Cir. 1975) (significant fluctuations in plaintiff's sales from year to year are a factor suggesting that plaintiff's profits were not reasonably certain); cf. notes 31-34 *infra* & accompanying text (discussing judicial efforts to identify factors that make an opportunity risky).

17. Defining risk by a measure of the likelihood that the earnings actually realized will differ from the mean might seem perverse, because occurrences resulting in income greater than the mean hardly are undesirable. One wishes to avoid only the possibility of unusually low earnings. In response to this objection, models of risk analysis have been developed that use the concept "semi-variance." In computing the semi-variance, a fixed reference point is selected and, for each possible outcome with lower earnings than the fixed reference point, that difference is squared and then multiplied by the probability that the outcome will occur. The reference point can be interpreted as a target figure such that earnings below the target are regarded as undesirable. See H. MARKOWITZ, *PORTFOLIO SELECTION* 188-94 (Cowles Foundation Monograph No. 14, 1959); Mao & Brewster, *An E-Sh Model of Capital Budgeting*, in *PORTFOLIO ANALYSIS* 85 (J. Dickinson ed. 1974) [hereinafter cited as *Capital Budgeting*]. For a generalization of this approach, see Fishburn, *Mean-Risk Analysis with Risk Associated with Below-Target Returns*, 67 AM. ECON. REV. 116 (1977) [hereinafter cited as *Mean-Risk Analysis*]. The author of the seminal work on modern analysis of investment and securities compared the semi-variance and the variance approaches to risk analysis and concluded that measuring risk by the variance of the possible returns had a significant advantage in computational convenience. MARKOWITZ, *supra*, at 193-94. The significance of computational convenience has decreased with the development of computers. See *Capital Budgeting*, *supra*, at 85; *Mean-Risk Analysis*, *supra*, at 116. For expository purposes, however, the mean-variance model probably retains an advantage. Moreover, the mean-variance model is the basis for an extensive body of modern financial theory. See LORIE & HAMILTON, *supra* note 15, at 171-97 *passim*; VAN HORNE, *supra* note 14, at 31. The variance approach and the semi-variance approach lead to similar decisions, especially if the anticipated distribution of potential earnings is roughly symmetrically distributed about the mean. See MARKOWITZ, *supra*, at 194.

percent probability that earnings will be \$10,000. The expected value, thus, is \$18,000.<sup>18</sup> In valuing the opportunity it seems reasonable to use the expected value of the outcome rather than the most likely outcome, that is, to make an allowance for the twenty percent probability that earnings will be only \$10,000 by making an appropriate deduction. Such a deduction, intended to give the plaintiff an award based on the average earnings and giving appropriate weight to all possibilities, will be called an "expected-value deduction" in this Article. As will be shown, when the courts speak of adjusting an estimate of earnings for uncertainty they often have in mind an expected-value deduction. Moreover, so appealing is the idea of an expected-value deduction that courts sometimes make the deduction without explicitly stating that they are doing so. In a personal injury case in which earning capacity has been destroyed completely, courts routinely use the working-life expectancy of the injured party to estimate the value of lost earnings. Use of working-life expectancy is intended to strike a balance between the possibility that earnings will last longer than that expectancy and the possibility that earnings would have been received for a shorter period of time. Working-life expectancy is an expected value, the expected value of the working-life of the injured party.<sup>19</sup>

According to modern financial theory, however, the expected value deduction is not a sufficient allowance for risk. Not only should deductions be made so that the earnings estimate is an approximation of the expected value of the earnings, but further discounting should reflect the extent to which the variance of the estimated earnings demonstrates the undesirable riskiness of the opportunity. Such a further adjustment will be referred to as a "discount for risk." An appropriate means to effect this latter adjustment, corresponding to the adjustment that would occur in the market price of a similar opportunity, is the use of a risk premium described above, with the risk premium reflecting the variance associated with the earnings estimate.

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18. The expected value equals  $.80 \times \$20,000 + .20 \times \$10,000$ , which equals  $\$16,000 + \$2,000$ , or  $\$18,000$ .

19. A careful analysis of future earnings would have to account for the time pattern with which earnings are to be received. In this instance a failure to work until the working-life expectancy was reached would result in the loss of dollars, which, because they would be received earlier, would be more valuable than the dollars which would be received by working beyond the working-life expectancy.

*Discounting for Uncertainty in Damage Law*

This Article proposes that courts deal with uncertainty in estimating the value of a plaintiff's lost earnings<sup>20</sup> by reducing the amount of damages that might otherwise be recovered by the plaintiff. This reduction should include both an expected-value deduction, so that the earnings estimate represents an average of all possible outcomes, and a discount for risk. Typically, when a plaintiff's lost earnings must be estimated for a number of years into the future, discounting for risk can be accomplished by adding a risk premium to the riskless discount rate, which simply measures the extent to which a present certain dollar is more valuable than a future certain dollar.<sup>21</sup>

An example of the range of possibilities commonly associated with an opportunity to receive earnings occurred in *Furrer v. International Health Assurance Co.*<sup>22</sup> Plaintiff had a contract to operate a sales agency for defendant, an insurance company, which defendant breached. One of plaintiff's experts provided three different projections of the present value of his expected future profits, each discounted at 4.5 percent: \$474,000, \$573,000, and \$669,000. The trial court's adoption of the lowest projection was affirmed on appeal. A better approach, however, would have been to choose the median projection but to add to the discount rate of 4.5 percent an appropriate risk premium to take account of the fact that the profit

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20. In this Article the defendant's liability is assumed. Thus, the possibility of adjusting the damages awarded to allow for the certainty of the proof of liability is not discussed. For discussions of the issues presented by the uncertainty of liability, see L. COHEN, *THE PROBABLE AND THE PROVABLE* 74-81 (1977); *A Symposium on Philosophy from Law: Compromise and Decision Making in the Resolution of Controversies*, 58 Nw. U. L. Rev. 731 (1964). Also outside the scope of this Article is the possibility that the degree of the defendant's moral fault in the form of willful or reckless conduct may affect the willingness of a court to find that damages have been established with sufficient certainty or that compensatory damages are not excessive. See Bauer, *The Degree of Moral Guilt as Affecting Defendant's Liability*, 81 U. PA. L. REV. 586 (1933); Bauer, *The Degree of Defendant's Fault as Affecting the Administration of the Law of Excessive Compensatory Damages*, 82 U. PA. L. REV. 583 (1934) [hereinafter cited as *Excessive Compensatory Damages*].

21. Uncertainty is an independent reason for discounting, applicable even if the plaintiff would have received the lost income immediately. In principle, earnings that would have been received before the trial also should be discounted for risk. Cf. *Martin Motor Sales v. Saab-Scania of America, Inc.*, [1978-1] Trade Cas. ¶ 61,907 (S.D.N.Y. 1978) (adjusting figures for 1973 and subsequent years in a 1978 decision). Sometimes there will be less uncertainty about what would have happened in years before trial than about what will happen in the future, in which case the appropriate discount will not be large.

22. 256 Or. 429, \_\_\_, 474 P.2d 759, 766-67 (1970).



of the sales agency might have been closer to the lower projection. This yields a measure of damages which approximates the price that the sales agency could have commanded if the contract right had been sold on the market. Use of the low projection unduly emphasizes the worst possible outcome. The approach adopted in *Furrer* also would lead to an award of zero damages if high profits were very likely but there was a modest possibility of no profits at all.<sup>23</sup>

Adjusting the amount of damages awarded for a lost opportunity to receive income results in a measure of damages that corresponds to the market value of the opportunity.<sup>24</sup> This approach has the additional virtue of avoiding the two unsatisfactory and inaccurate methods of handling uncertainty customarily used by American courts. The first alternative, to make an award based on lost earnings only if these can be proven with sufficient certainty, is unsatisfactory because uncertain opportunities do have a value, often a substantial value.<sup>25</sup> The other alternative is to award damages but to ignore the uncertainty as to the amount of lost earnings in valuing the loss. This alternative generally overcompensates the plaintiff.<sup>26</sup>

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23. The court's approach in *Furrer* is endorsed in an excellent student work. Comment, *Remedies — Lost Profits as Contract Damages for Unestablished Business: The New Business Rule Becomes Outdated*, 56 N. C. L. Rev. 693, 732-33 & n.238 (1978) [hereinafter cited as *New Business Rule*].

24. Dobbs observes that the courts' reluctance to award damages for lost profits may stem from a traditional preoccupation with the protection of capital rather than income. D. DOBBS, *REMEDIES* 143-48, 154 (1973).

Modern financial thought, however, emphasizes cash flows; it views the value of a capital asset as dependent on the probable pattern and the riskiness of the income generated by the asset. See, e.g., VAN HORNE, *supra* note 14, at 76-81. The argument of this Article is essentially that the law of damages should make use of simple financial techniques to estimate the capital value of an income opportunity. If sensibly applied, these techniques will yield answers approximating the values that the income opportunity would command on a market. They should go a long way toward resolving the difficulties described by an English judge, discussing damages in a personal injury case: "No true value can be reached, for there is nothing to establish it, as in the case of the value of goods, of the cost of production or a price reached by the process of supply and demand and the haggling of the market." For a discussion of the application of these techniques in personal injury cases, see notes 35-56 *infra* & accompanying text.

25. This alternative, which tends to result in undercompensation of the plaintiff, frequently is adopted in contract cases because of the "certainty rule." The certainty rule requires that proof of lost profits satisfy a standard, phrased in terms of "reasonable certainty," which is higher than the usual preponderance-of-the-evidence standard in civil litigation. See notes 58-71 *infra* & accompanying text.

26. Discounting for uncertainty may be expected to increase the amount of the plaintiff's award when a defendant proves that opportunities were available for the plaintiff to mitigate damages but those opportunities were uncertain. For an example, see note 57 *infra*.

Confronted by these two extremes, courts have developed formulas to justify choosing the less unsatisfactory one.<sup>27</sup> Although in some circumstances these formulas permit a court considerable latitude in selecting which of the two extremes it will adopt, the choice between all or nothing ends up being made in a way that is only imperfectly controlled by principle and precedent. Application of both an expected-value deduction and a discount for risk would facilitate a simpler and more consistent law of damages.

In rejecting a defendant's argument that no damages should be awarded because the plaintiff's receipt of future income was uncertain, courts often invoke the maxim that a wrongdoer cannot complain about uncertainty resulting from his wrongful act.<sup>28</sup> Reasoning that any risk thereby created should be placed entirely on the defendant, courts have felt compelled to adopt the opposite extreme of awarding the plaintiff the entire amount claimed, thereby ignoring the possibly substantial uncertainty attending the ultimate receipt of this income. These courts have failed to consider that the actual value of an uncertain earnings opportunity is neither zero nor the highest potential amount; rather, the correct amount could be determined only by adjusting the more optimistic amount to reflect the degree of risk to which the amount is subject. Before the defendant's wrongful act, however, the plaintiff bore the riskiness of his earnings, a risk not created by the defendant. Although the defendant's act made it necessary to value the plaintiff's potential earnings judicially, this does not seem sufficient reason to place the plaintiff in a better position than he occupied before the act by

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27. Competing formulas are available to a court weighing the adequacy of plaintiff's proof of damages:

While it is true that the Court may make a just and reasonable estimate of the damage based upon inferential as well as direct proof because the wrongdoer should bear the risk of any uncertainty in computing damages which his wrong has created, nevertheless, damages cannot be based on speculation and guess work even though the defendant by his own wrong has precluded a more precise determination.

Key West Hand Print Fabrics, Inc. v. Serbin, Inc., 269 F. Supp. 605, 614 (S.D. Fla. 1966), *aff'd*, 381 F.2d 735 (5th Cir. 1967). The competing formulas are reminiscent of Karl Llewellyn's demonstration that statutory construction in judicial opinions frequently proceeds at the level of "thrust and counter-thrust" between maxims that would support opposing conclusions on similar facts. K. LLEWELLYN, *THE COMMON LAW TRADITION* 521-35 (1960). For a list of formulas used to award damages even though the proof is uncertain, see C. McCORMICK, *LAW OF DAMAGES* 101-04 (1935).

28. See McCORMICK, *supra* note 27, at 102-03.

making the defendant a virtual insurer of the plaintiff's future income.<sup>29</sup>

Courts already have some experience in making judgments as to the amount of risk attending an earnings opportunity.<sup>30</sup> The certainty rule requires a determination that receipt of the earnings was sufficiently certain to permit their recovery. In making this determination, courts too often exclude certain types of earnings opportunities or enterprises as too uncertain for valuation and fail to look beyond these characterizations to the merits of the individual case and the degree of risk actually involved.

For example, the profits in certain types of business such as theatrical and advertising ventures have been considered inherently too speculative to permit recovery of any damages.<sup>31</sup> Advertising and theatrical ventures may involve a high degree of risk, such that the prospective returns should be heavily discounted, but the opportunities to engage in those industries cannot be said to be worthless.

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29. When the risk has been imposed on the plaintiff by the defendant, the awards should be increased by a sum equal to the premium that persons on the market would pay to avoid such a risk. For example, consider an award for future recurring medical expenses, which is often made in personal injury cases. Compensation is being made for an anticipated loss of future dollars, a loss imposed on the plaintiff by the defendant's wrongful act. Since this loss will not be experienced all at once, it is appropriate to discount it to take account of the fact that compensation is being paid in present dollars, which are more valuable than future dollars. An adjustment for uncertainty also should be made. Here, however, fair compensation seems to call for an addition to the award, rather than a reduction, because the amount of medical expenses later incurred might exceed those which are projected. The uncertainty as to the amount of future medical expenses has been imposed on the plaintiff by the defendant's wrongdoing. By contrast, the uncertainty in a plaintiff's original income opportunity was inherent in that opportunity and reduced its value. The defendant has placed the plaintiff in a position where his opportunity has to be valued, but that fact is usually ignored in assessing damages on the basis of market value. See DOBBS, *supra* note 24, at 144-45. Dobbs points out an interesting exception. In *Juncker v. T.L. James & Co.*, 148 So. 2d 795 (La. App. 1962), the defendant, a good-faith trespasser, took dirt from plaintiff's land and sold it for 15 cents profit per yard. The court awarded 15 cents per yard plus an additional five cents per yard for plaintiff's unwillingness to sell.

The problems created by the uncertainty in forecasting the cost of long-term institutional care were discussed in *Frankel v. United States*, 321 F. Supp. 1331, 1340-41 (E.D. Pa. 1970), *aff'd sub. nom.* *Frankel v. Heym*, 466 F.2d 1226 (3d Cir. 1972), in which the court recognized that the income generated by a lump-sum award sometimes exceeds the actual future outlays and sometimes is less than these outlays.

30. In practice, an expert testifying on the value of lost profits should be asked his opinion as to an appropriate discount rate based on the discount rates applied to comparable opportunities.

31. See cases cited in McCORMICK, *supra* note 27, at 112-13 & n.53; Comment, *Lost Profits as Contract Damages: Problems of Proof and Limitations on Recovery*, 65 YALE L.J. 992, 1014 (1956) [hereinafter cited as *Lost Profits*].

Many investors are willing to pay for those opportunities. Nor are all ventures in those industries alike; some may be less risky than others. This may account for the courts' failure to apply rigorously a rule against recovery of profits in high-risk industries.<sup>32</sup>

Courts also have asserted that the profits from a new business are too speculative to permit their recovery.<sup>33</sup> Here again, the profits of some new businesses may be very uncertain; this would require a substantial discounting of those profits but not a ruling which says, in effect, that the potential profits are worthless.<sup>34</sup>

### DISCOUNTING TO AVOID OVERPAYMENT IN PERSONAL INJURY CASES

Damages for lost future earnings frequently are the largest component of a plaintiff's award in personal injury cases.<sup>35</sup> Economic testi-

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32. See cases cited in McCORMICK, *supra* note 27, at 112-13 n.53; *Lost Profits*, *supra* note 31, at 1014 n.128.

33. See DOBBS, *supra* note 24, at 154-55; *Lost Profits*, *supra* note 31, at 1014; *New Business Rule*, *supra* note 23, *passim*.

The new business rule in contract cases is analogous to the rule in Delaware corporations cases against projecting future earnings of a corporation instead of simply relying on the past earnings of the corporation. See *Application of Delaware Racing Ass'n*, 42 Del. Ch. 406, 213 A.2d 203 (1965). One Delaware court has recognized that the rule does not make sense if blindly followed because other factors in the record may indicate that unadjusted past earnings would be a poor basis for projecting future earnings. *David J. Green & Co. v. Dunhill Int'l, Inc.*, 249 A.2d 427 (Del. Ch. 1968). The prospective earnings of a corporation may also be considered in Delaware when assigning a price-earnings ratio to capitalize past earnings. See *David J. Green & Co. v. Schenley Indus., Inc.*, 281 A.2d 30, 34-35 (Del. Ch. 1971).

34. For a discussion of methods of estimating the lost profits of a new business, see *New Business Rule*, *supra* note 23, at 712-21.

35. See *Present Value of Lost Wages*, *supra* note 6, at 424. Recent economic analysis suggests that considering only lost earnings would be incomplete from a deterrent point of view and, for a living victim, from a compensatory point of view. For example, an individual might pay more than the expected value of his earnings in order to avoid premature death. See Conley, *The Value of Human Life in the Demand for Safety*, 66 AM. ECON. REV. 45 (1976). The cost of personal injury might be measured, for example, by the number of years of life lost in terms of the quality of those years with regard to such characteristics as strength and vigor. See Zeckhauser & Shepard, *Where Now for Saving Lives?*, 40 L. & CONTEMP. PROB. 5 (1976) (suggesting measurement of damage to individuals in terms of "quality-adjusted life years"). See generally M. JONES-LEE, *THE VALUE OF LIFE* (1976); Acton, *Measuring the Monetary Value of Lifesaving Programs*, 40 L. & CONTEMP. PROB. 46 (1976). The deterrent purpose of tort law would be served best by a measure of damages that reflects the value society places on the loss of a life. No damage award is given in American wrongful death cases, however, for the reduction in the decedent's length of life; nor are courts generally permitted to make an award for the reduction of a surviving victim's life expectancy. In the United Kingdom an award is made, but conventionally it is of a modest amount. See DOBBS, *supra* note 24, at 549. In fact, defendants can sometimes obtain a reduction in the amount to be awarded for future medical care on the ground that the victim's life expectancy has been lowered, thereby

mony plays a major role in personal injury litigation,<sup>36</sup> and the use of economic analysis in these cases has been discussed extensively by economists and by lawyers expert in economics.<sup>37</sup> Consequently, courts have taken an increasingly sophisticated approach to the computation of lost earnings.<sup>38</sup>

Generally, courts and commentators have ignored the fact that the injured person's income prospects were risky and have failed to consider the use of a discount rate containing a risk premium.<sup>39</sup> Although most courts require that prospective tort damages be reduced to their present worth,<sup>40</sup> their sole concern is with the time value of money. The general rule is that in ascertaining the discount rate, "[t]he jury should determine from the evidence what interest

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decreasing the period for which that medical care is needed.

36. An example of proposed testimony appears in 16 *Am. Jur. Proof of Facts* 701-24.

37. See, e.g., R. POSNER, *ECONOMIC ANALYSIS OF LAW* 144-49 (2d ed. 1977); Henderson, *The Consideration of Increased Productivity and the Discounting of Future Earnings to Present Value*, 20 S. D. L. REV. 307 (1975).

38. For an example of careful analysis, see *Feldman v. Allegheny Airlines, Inc.*, 382 F. Supp. 1271 (D. Conn. 1974), *aff'd in part, rev'd in part and remanded*, 524 F.2d 384 (2d Cir. 1975).

39. An exception is Peck & Hopkins, *Economics and Impaired Earning Capacity in Personal Injury Cases*, 44 WASH. L. REV. 351, 374 (1969):

[T]he usual instruction directs a jury to determine the present value of lost or impaired earning capacity . . . [T]he statement that the jury should determine the present value of the future earnings of the victim is not entirely accurate, in the sense that the object is not to determine what price might have been received by sale or assignment of that earning capacity in a hypothetical earnings market. There is no such market, and in that sense no present value of future earnings. Indeed, considering the risks that confront wage earners, such a hypothetical market would undoubtedly impose a high discount and thus establish a very low sales price for earning capacities.

Peck and Hopkins argue, however, that the lump sum awarded should be that amount which, when invested at a rate of interest attainable by inexperienced investors, will permit periodic payments of principal and interest equivalent to the lost potential earnings. *Id.* at 374-75. The authors, however, do not discuss the conflict between this standard and that stated in the first sentence of their article: "The major objective of American tort law is to compensate a wrongfully injured person and thereby place him in the position in which he would have been but for the wrong." *Id.* at 351.

Another commentator points out that the terms on which millions of people in the United Kingdom acquire goods on the installment plan often involve an effective rate of interest of 20 percent or more. P. ATIYAH, *ACCIDENTS, COMPENSATION AND THE LAW* 198-99 (1970). Atiyah, however, does not draw from this the inference that the high rates charged on personal loans might be appropriate for discounting future personal earnings. Instead, he regards what he terms "the value of capital sum over the income which it replaces" as compensating, at least in part, for factors, such as disregard of inflation, which may work toward undercompensation of a plaintiff in a personal injury case. *Id.* at 194-99.

40. See DOBBS, *supra* note 24, at 570-75.

could be fairly expected from *safe* investments which a person of ordinary prudence, but without particular financial experience or skill, could make in that locality."<sup>41</sup>

Using the interest rate obtainable on safe investments<sup>42</sup> results in a relatively low discount rate. In effect, courts treat the jury's estimation of the plaintiff's or decedent's future earnings as if it were an absolute certainty. The risk that the victim's earnings might have been less is placed entirely on the defendant. That risk is in many cases significant. Anticipated promotions might not have been realized. A depression in the nation or the industry might have reduced income or caused unemployment. Even in the absence of the injuries caused by defendant, sickness, injury, or early death might still have occurred through the fault of no one.

If compensation is the objective, then the damages awarded to a plaintiff should equal the value of what he lost.<sup>43</sup> The question is

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41. *Southern Pac. Co. v. Klinge*, 65 F.2d 85, 87 (10th Cir. 1933) (citing *Chesapeake & Ohio Ry. v. Kelley*, 241 U.S. 485 (1916)) (emphasis supplied). *Kelley* was the first case to require that prospective tort damages be discounted. The Supreme Court stated:

So far as a verdict is based upon the deprivation of future benefits, it will afford more than compensation if it be made up by aggregating the benefits without taking account of the earning power of the money that is presently to be awarded. It is self-evident that a given sum of money in hand is worth more than the like sum of money payable in the future . . . [a]nd the putting out of money at interest is at this day so common a matter that ordinarily it can not be excluded from consideration in determining the present equivalent of future payments, since a reasonable man, even from selfish motives, would probably gain some money by way of interest upon the money recovered.

241 U.S. at 489-90. Clearly, the Court contemplated only that the time value of money be considered in reducing estimates of future earnings to their present value.

42. As of 1969, an interest rate of 4% frequently was used in federal courts, a rate which DOBBS characterizes as "relatively high" for this purpose. DOBBS, *supra* note 24, at 571. Some insight into the effect of adding a risk premium can be gained by considering the "prime rate," the lowest rate typically charged on business loans to large, well-established, and financially sound companies. VAN HORNE, *supra* note 14, at 450. In 1969, the prime rate reached 8 ½%; in parts of the 1970's, it has gone above 11%. *Id.* at 451. The risk premium on an individual's income should be even higher. In 1957, when the prime rate was approximately 4%, the interest rates charged on personal loans ranged from 12% to 28%. Compare *id.* at 451 with Wilkinson, *Present Values of Lifetime Earnings for Different Occupations*, 74 J. POL. ECON. 556, 561 n.9 (1966) [hereinafter cited as *Present Values of Lifetime Earnings*].

43. The major objective of American tort law is usually said to be compensation of the injured party to restore him to the position that he occupied before the injury. See 1 F. HARPER & F. JAMES, *THE LAW OF TORTS* 1300-01 (1956). See also DOBBS, *supra* note 24, at 540. From this point of view, the failure to take account of the riskiness of the lost potential earnings results in overpayment; the plaintiff is paid as though the earnings were certain even though their riskiness made them less valuable. Recent writers on torts have emphasized that tort

what the earnings he might have made in the future would be worth today. Determining that figure would be easy if there were a market in which the rights to an individual's lifetime earnings could be purchased and sold.<sup>44</sup> A victim's loss would be evidenced by the selling price of his earnings before his injury or by comparison with the market value of the earnings of individuals similarly situated. Buyers in a hypothetical earnings market would consider both the expected value of those earnings and their riskiness.<sup>45</sup> Valuation of

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damages deter conduct that brings about more harm than good. See, e.g., G. CALABRESI, *THE COST OF ACCIDENTS* (1970); POSNER, *supra* note 37, at 143. From this point of view also, the failure to take account of the riskiness of the lost earnings opportunity still results in overpayment. Because the amount of harm is overstated, too heavy a penalty will be imposed on an activity which may have benefits as well as costs. See POSNER, *supra* note 37, at 166; cf. Valavanis, *Traffic Safety from an Economist's Point of View*, 72 Q.J. ECON. 477 (1958) (traffic accidents might be reduced toward zero by expensive roadways and low speed limits, but the gain in safety would not be worth the loss from expense and inconvenience).

44. As to the usefulness of a market in valuing lost earnings, see note 24 *supra*.

45. The economics of human capital analyzes the value of the future earnings of an individual in terms of how the earnings would be valued on a market. Two seminal works are T. SCHULTZ, *THE ECONOMIC VALUE OF EDUCATION* (1963) and G. BECKER, *HUMAN CAPITAL* (1964).

The effect of uncertainty on the present value of individual earnings has been the subject of some discussion in the economics literature. Milton Friedman has pointed out that high earnings in an occupation like movie acting are analogous to the high return for a lottery winner; someone entering the movie-acting business, like someone buying a lottery ticket, has at that moment expected earnings which are far less in amount than the prize a winner would receive. M. FRIEDMAN, *CAPITALISM AND FREEDOM* 162-63 (1962). Friedman implied, but did not elaborate upon, a possible consequence: riskiness of earnings would tend to cause risk-avoiders not to enter the occupation unless payments to those who were successful rose to a higher than normal level.

The need for high interest rates in discounting the potential earnings of an individual is stressed by Thurow, who points to the high variance of earnings in some occupations, the lack of knowledge as to how productive any individual will be, and the lack of "collateral value," in the sense that an individual who is disabled from using a skill effectively cannot sell the skill to someone who wants it. L. THUROW, *INVESTMENT IN HUMAN CAPITAL* 22-24, 70-74, 77-78 (1970). The importance of risk was also acknowledged in a study that attempted to measure the present values of the lifetime earnings for different occupations, using discount rates of 5%, 8%, and 10% to reflect alternative investment opportunities such as government bonds and investment in manufacturing enterprises. The author, however, observed that if the interest rates charged on personal loans were used, a much higher discount rate would become pertinent. He cited studies made by the United States Federal Reserve System in 1957 showing that at that time the charges on personal loans ranged from 12% to 28%. *Present Value of Lifetime Earnings*, *supra* note 42, at 561 n.9. The interest rate charged on personal loans, of course, reflects the weight assigned by the lender to the risk that the buyer will not be able to repay the loan for reasons such as instability of income. For longer term loans higher interest rates would be anticipated to reflect increasing risk. Similarly, in personal injury cases it is frequently necessary to give awards for a loss of income over a considerable period of time, with corresponding riskiness.

lost earnings for purposes of damage law should be based on the same factors that these hypothetical buyers and sellers would consider.

By using the interest rate on safe investments as the discount rate, courts currently are omitting from the calculation the significant factor of risk. That omission not only leads to overcompensation but makes more awkward courts' consideration of evidence concerning such contingencies as inflation,<sup>46</sup> promotions, and wage increases. Allowing testimony about these contingencies without allowing for risk tends further to overcompensate the plaintiff. Ignoring these considerations as well as the risk only serves to omit relevant factors from the computation. The solution lies in admitting evidence of reasonable contingencies together with expert testimony as to an appropriate discount rate, with due regard for risk.<sup>47</sup>

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Weiss has pointed out that scientists working for private companies receive higher average salaries than scientists working for public enterprises and that this corresponds to a greater variance of salaries in private industry than in public service. He argues that risk aversion among scientists may call for higher salaries in private industry to make up for the greater riskiness of employment in private industry. Weiss, *The Risk Element in Educational and Occupational Specialization*, 80 J. POL. ECON. 1203 (1972). For a theoretical discussion of the relationship between the level of salary and the riskiness of salaries, see Levhari & Weiss, *The Effect of Risk on the Investment in Human Capital*, 64 AM. ECON. REV. 950 (1974).

46. Expectations about inflation create complexities that are outside the scope of this Article. It is assumed that inflation will be treated consistently in projecting the lost earnings and in choosing the discount rate. See POSNER, *supra* note 37, at 81-82. For a discussion of the legal controversy over treatment of inflation, see Note, *Torts—Damages—Adjusting Future Earnings for Inflation*, 37 OHIO ST. L.J. 138 (1976).

47. It has been suggested that much uncertainty in personal injury cases as to what loss has been caused by the defendant's wrongful act could be removed if periodic payments, rather than a lump sum payment, were permitted. See ATIYAH, *supra* note 39, at 175-85; S. SCHREIBER, *DAMAGES IN PERSONAL INJURY AND WRONGFUL DEATH CASES* 21-22 (1965). Periodic payments, if permitted, would resolve uncertainty as to such questions as what the future expenses of medical care will be and what the plaintiff in his injured condition will be able to earn in the future. Cf. *Frankel v. United States*, 321 F. Supp. 1331, 1340-41 (E.D. Pa. 1970), *aff'd sub. nom. Frankel v. Heym*, 466 F.2d 1226, 1228-29 (3d Cir. 1972) (periodic payments under a trust fund arrangement would be a desirable way of resolving uncertainty as to the expenses of future medical care for the injured plaintiff, but the court did not have the power to adopt such a remedy under the Federal Tort Claims Act). Any such periodic system has the potential defect of "moral hazard" because a plaintiff whose expenses are paid as long as he incurs them or whose earnings are deducted from a periodic award in place of lost future earnings will have an incentive not to minimize medical expenses or not to maximize his earnings. See, e.g., Marshall, *Moral Hazard*, 66 AM. ECON. REV. 880 (1976). Periodic payments, however, would not help to resolve uncertainty as to hypothetical questions such as what the plaintiff would have been able to earn if the defendant's wrongful act had not occurred. Because the uncertainty with regard to those questions would remain, discounting for uncertainty would be appropriate even if periodic payments were possible.



Because damage awards in personal injury cases sometimes involve estimation of earnings far into the future under conditions of great uncertainty, the failure to discount for uncertainty can result in awarding the plaintiff considerably more money than his earnings opportunity would have been worth on a hypothetical market. For example, in *Drayton v. Jiffee Chemical Corporation*,<sup>48</sup> the plaintiff, eight years old at the time of the trial, had been permanently and grievously disfigured when drain cleaner spilled on her face at the age of one year. The defendant was liable for this disfigurement and any economic losses caused by it. The trial court accepted the testimony of the plaintiff's expert witness, an economist, that the present value of the sum of money which the plaintiff would have earned during her lifetime, had she not been injured, was \$878,951. This calculation was premised on the assumptions that the plaintiff would have graduated from college, would have entered the work force in 1989, and would have worked until 2026. The plaintiff's lifetime earnings were assumed to increase at a rate of twelve percent per year early in her life and by a decreasing rate thereafter until late in her life, at which point they were assumed to increase at an annual rate of 4.03 percent. Plaintiff's starting salary in 1989 as a college graduate was estimated to be \$19,487.04. Using the statistical history of a college graduate's income, the plaintiff's expert projected a salary of \$267,000 for the year 2026 with an additional \$37,000 in fringe benefits, characterizing these earnings as "highly probable."<sup>49</sup>

The discount rate chosen for these projected earnings was a typical rate of return for a liquid, long-term, very safe investment such as long-term government bonds. The discounting procedure was sufficiently complicated to use a sliding scale initially at six percent and decreasing gradually over time to five percent. From the sum of \$878,951 thus calculated, the plaintiff's expert subtracted the present value of the earnings the plaintiff might be expected to make in her disfigured condition, based on the assumption that she would be able to earn the projected minimum wage. The expert's resulting estimate of lost wages was \$608,215, which was close to the

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48. 413 F. Supp. 834 (N.D. Ohio 1976). The opinion of the court on liability, before the court ordered a further hearing at which additional expert economic testimony on damages was taken, is reported at 395 F. Supp. 1081 (N.D. Ohio 1975).

49. 413 F. Supp. at 837.

amount originally awarded by the court.<sup>50</sup>

Some of the court's language in *Drayton* indicated a recognition of the great uncertainty involved in projecting both the future income of the plaintiff had she remained healthy and the alternative income of the plaintiff in her disfigured condition.<sup>51</sup> It referred to the plaintiff's expert's estimate as based on "assumption," and observed that "no one, at this time, can accurately predict what residual earning capacity [plaintiff] has . . . ."<sup>52</sup> Finally, in regard to the computations of plaintiff's expert, the court stated that his projection of plaintiff's earnings absent the disfigurement "might be somewhat optimistic in theory" and that the projection of her actual earnings in her disfigured state "might be somewhat optimistic in fact."<sup>53</sup>

That the opportunity lost by plaintiff in *Drayton* was far from riskless is demonstrated by the number and the uncertainty of the assumptions underlying the plaintiff's expert's computations. The expert's projection was based on the assumption that the plaintiff would attend college, despite his acknowledgment that at that time only seven to eight percent of the black female population graduated from college.<sup>54</sup> To carry out his computations, the plaintiff's expert had to adjust the statistical tables for the worklife expectancy of men because the tables for women were incomplete. He also assumed that males and females would earn the same rates of pay by 1989. His estimate of nonpecuniary fringe benefits was based on the current statewide average for Ohio, although the plaintiff obviously might not live in Ohio during the years 1989 to 2026.

The uncertainty of the plaintiff's future earnings, beginning some nine to thirteen years from the date of the testimony and ending some fifty or so years later, is well illustrated by the three alternative estimates of her earnings, based upon varying sets of circum-

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50. The court stated that the plaintiff's expert's estimate of \$608,215 "represents only a 1.3% upward variance from the court's original award of lost wages." *Id.* at 838.

51. *Id.* at 836.

52. *Id.* at 837-38.

53. *Id.* at 838.

54. The expert's projection of the plaintiff's earnings in her disfigured state was based on the assumption that she would not attend college. In his original opinion the trial judge stated that the assumption that plaintiff's future income absent the disfigurement would have paralleled that of an average college graduate was "a source of some difficulty." He suggested at that time that this assumption might cause the prognostication of the plaintiff's future earnings, absent disfigurement, to fall afoul of the rule that the prediction "must be based on 'reasonable certainty' and not mere possibilities." 395 F. Supp. at 1096.

stances, offered by the defendant's expert. The figures offered involved different assumptions as to the growth of productivity and the rapidity with which discrimination against blacks would be eliminated. Despite this indication of uncertainty, the defendant's own expert followed the usual assumptions and used a discount rate with no risk premium.<sup>55</sup>

Ironically, one of the reasons given by the trial judge for accepting almost completely the testimony of plaintiff's expert, as opposed to that of defendant's expert, was that:

The figures ultimately arrived at [by the plaintiff's expert] were precise and at no time did [he] waver from his position.

[The defendant's expert], on the other hand, could offer only alternative figures, based upon varying sets of circumstances, and, in at least one instance, stated that the answer to the court's question lie [sic] only somewhere within that range of figures.<sup>56</sup>

Thus, the fact that the testimony of the defendant's expert reflected the uncertainty surrounding a projection extending so many years into the future, on the basis of very little specific information, was regarded as a weakness. That uncertainty, however, was an inherent part of the opportunity impaired by the defendant's wrong and diminished the value of that opportunity. Failure to recognize this resulted in overcompensation of the plaintiff.<sup>57</sup>

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55. Lord Denning recognized the great uncertainty of predicting the future earnings of a very young child in *Taylor v. Bristol Omnibus Co.*, [1975] 2 All E.R. 1107, 1113:

At [plaintiff's] very young age [future earnings] are speculative in the extreme. Who can say what a baby boy will do with his life: He may be in charge of a business and make much money. He may get into a mediocre groove and just pay his way. Or he may be another failure. It is even more speculative with a baby girl. She may marry and bring up a large family, but earn nothing herself. Or, she may be a career woman earning wages.

Lord Denning, however, concluded that the current practice of English courts was to attempt to estimate a child's lost earnings. The trial judge had used plaintiff's father's income of £2000 per year as the measure of the child's prospective earnings from age 19 to age 66. His use of a rather conventional multiplier of 16 in this circumstance was approved on appeal. There was no discussion of the possibility of decreasing the multiplier to reflect the high degree of uncertainty attending the prediction of the young plaintiff's future earnings. A multiplier of 16 for a perpetual income stream would correspond to a discount rate of a little more than 6%, a rate with very little risk premium. See note 145 *infra*. For a discussion of the efforts of English courts to account for risk through appropriate selection of a multiplier for predicted earnings, see notes 142-60 *infra* & accompanying text.

56. 413 F. Supp. at 840.

57. The projection of the plaintiff's earnings in her disfigured condition, at minimum wage, may have represented only the minimum amount that she could be expected to earn. Her

## THE CERTAINTY RULE: UNDERCOMPENSATION OR OVERCOMPENSATION

If the plaintiff's proof leaves too much uncertainty as to his earnings absent the defendant's wrongful act, his recovery is denied. The usual standard of proof requires the plaintiff to establish the amount of damages "with reasonable certainty."<sup>58</sup> The effect of the rule is "to increase the injured party's burden of persuasion well beyond the usual one of making out his case by the 'preponderance or greater weight of the evidence.'"<sup>59</sup> "Reasonable certainty," however, may vary from one category of litigation to another. In personal injury cases, lost earnings are routinely awarded, despite great uncertainty as to their amount.<sup>60</sup> Similarly, in antitrust cases, application of the certainty requirement has been eased considerably, in part by the doctrine that once a plaintiff has established the fact of his injury, a reasonable approximation of the amount of injury is sufficient.<sup>61</sup> In contrast, the certainty rule retains considerable im-

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physical and intellectual abilities apparently were not diminished by her disfigurement, although psychological handicaps might have limited her educational and working ability. If, however, the plaintiff's earnings might be expected to fall below the level of her estimated earnings in her disfigured condition, as would be true if an expected value type of estimate were used, then a discount for uncertainty would be appropriate. Discounting the estimated sum that the plaintiff can be expected to earn despite the injury has the effect of increasing the amount of damages awarded to the plaintiff. Similarly, discounting the plaintiff's earnings in his injured state to reflect uncertainty as to their amount would have been appropriate in *Rowden v. Clarke Chapman & Co.*, [1967] 3 All E.R. 608, in which the plaintiff, unable to follow his normal employment, was retraining as a welder. One-fifth of those who took the training course in which the plaintiff was enrolled failed to complete it. Moreover, the average earnings of a welder at different localities varied widely and were affected by the types of welding jobs available.

58. See, e.g., *DOBBS*, *supra* note 24, at 149-50, 798-99.

59. Farnsworth, *Legal Remedies for Breach of Contract*, 70 COLUM. L. REV. 1145, 1210-11 (1970) [hereinafter cited as *Breach of Contract Remedies*].

60. See notes 39-57 *supra* & accompanying text. There is a contrast in treatment between lost profit and lost income from wages and salaries, as illustrated by *Smith v. Corsat*, 260 N.C. 92, 131 S.E.2d 894 (1963), in which evidence as to lost profits in a personal injury case was held to be too speculative to support an award for lost profit yet admissible as evidence of the amount of earnings for personal services that the claimant could have been expected to receive.

Presumably, a policy of compensating tort victims for losses or of deterring torts would be fostered as much by allowing the recovery of lost commercial profits on the basis of "speculative" evidence as by allowing the recovery of lost wages and salaries based on similar evidence. One may question the wisdom of a rule that imposes higher standards of proof in contracts cases than in personal injury cases. Cf. *Excessive Compensatory Damages*, *supra* note 20.

61. *Bigelow v. RKO Radio Pictures, Inc.*, 327 U.S. 251, 264 (1946); *Story Parchment Co. v. Paterson Parchment Paper Co.*, 282 U.S. 555, 563 (1931).

portance in contract cases.

The certainty rule's higher standard of proof increases the likelihood of undercompensation. Such undercompensation occurred in *Eastern Federal Corp. v. Avco-Embassy Pictures, Inc.*<sup>62</sup> The defendant entered into a contract with the plaintiff, a theater operator, granting the plaintiff the exclusive right to show the motion picture "The Graduate" in its Atlanta-area theaters. Following a dispute about playing dates for the film, the defendant awarded the exclusive first-run rights for the picture to one of the plaintiff's competitors.

The court found that the plaintiff had a valid contract with the defendant, which the defendant had breached. On the question of damages, however, the court concluded that the plaintiff could not recover the anticipated profits from one of its three theaters, the Coronet, which was still under construction at the time of the breach. The Coronet opened one week later and could have shown the film, but the court held that "the anticipated profits of the Coronet Theater are necessarily speculative and uncertain, whereas those of the other two theaters are predictable . . . ."<sup>63</sup> The Coronet incurred losses subsequent to its opening, and the court conceded that "the popularity of the moving picture 'The Graduate' was such as to attract substantial patronage and thereby produce some profit at any suitable theatre . . . ."<sup>64</sup> Yet the testimony of plaintiff's expert was dismissed as guesswork.

The court's finding of an added element of risk involved in realizing profits from a new theater as opposed to an established one was correct. Other things being equal, opening a new business is riskier than operating an already profitable one, although the presence of other factors may make a new business a relatively safe venture.<sup>65</sup> But the court's method of dealing with the added uncertainty in *Eastern Federal* by disallowing any recovery, even though some profit concededly would have been earned, was unfair to the plaintiff. The uncertainty diminished the value of plaintiff's opportunity but did not make the opportunity worthless. The court could have

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62. 326 F. Supp. 1280 (N.D. Ga. 1970), *modified*, 331 F. Supp. 1253 (N.D. Ga. 1971). The case is discussed in DOBBS, *supra* note 24, at 152-53.

63. 326 F. Supp. at 1285.

64. *Id.* at 1284.

65. See DOBBS, *supra* note 24, at 154-55; cf. notes 33-34 *supra* & accompanying text for a discussion of the new business rule.

accomplished a more just result by attempting to measure the value of plaintiff's risky opportunity.

The certainty rule does not prevent overcompensation; no allowance for risk is made once the plaintiff proves damages with "reasonable certainty." *Perma Research & Development Co. v. Singer Co.*<sup>66</sup> is a good example of such overcompensation. Plaintiff had entered into a contract granting Singer the rights to the plaintiff's patented anti-skid device for automobiles. The contract was not merely an assignment of a patent, but also implied an obligation on the part of Singer to use its best efforts and purported engineering expertise to perfect and market the device. Because Singer had not used its best efforts for a reasonable time to perfect the apparatus, it breached the contract.

Singer claimed that the device could not be perfected and could not in any event have been successfully sold either as original equipment on automobiles or as an accessory. Evidence showed that the major automobile manufacturers had had little success in marketing anti-skid devices on their 1969-1974 models and that comparable devices available for five years preceding the trial had not sold well as accessories. Moreover, the anti-skid device which Ford had attempted to market was superior to the plaintiff's device. Despite uncertainty whether the device could have been successfully marketed even if perfected, the trial judge awarded damages based on sales projections made by Singer ten years earlier, before it signed the contract.<sup>67</sup> He further adjusted the annual sales estimates upward to reflect expansion of the automobile market during the years during which the contract was to have been effective. The number of units estimated to have been sold each year was then multiplied by the royalty specified in the contract. The result was five million dollars, exclusive of interest and costs amounting to more than one and one-half million dollars. A more satisfactory result would have been reached if the judge had discounted his ultimate estimate of lost royalties to reflect the considerable uncertainty inherent in the original sales forecast.

Generally, commentators have suggested that the policy behind the certainty rule is to limit the possibility of excessive recovery by

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66. 402 F. Supp. 881 (S.D.N.Y. 1975), *aff'd*, 542 F.2d 111 (2d Cir.), *cert. denied*, 429 U.S. 987 (1976).

67. The contract in dispute was entered into in December, 1964; the case was decided in April, 1975.

the plaintiff.<sup>68</sup> The rule, however, operates as only a crude limit on large recoveries. If the plaintiff's damages are uncertain, the damages are not merely limited but rather are excluded entirely. If, however, the plaintiff's proof satisfied the certainty rule, he receives the entire amount demanded, despite the size of the sum or lingering doubts as to whether the plaintiff actually would have earned the entire sum.<sup>69</sup> This all-or-nothing characteristic has led a number of commentators to criticize the rule.<sup>70</sup> The approach proposed in this Article provides an appealing alternative which avoids this all-or-nothing characteristic, permitting a compromise between these extremes, and limits damages in a precise and appropriate way.<sup>71</sup>

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68. See McCORMICK, *supra* note 27, at 105; *Breach of Contract Remedies*, *supra* note 59, at 1212-13. Farnsworth has suggested that "limitation of damages to those that are foreseeable and certain can be viewed as reducing the risk undertaken by entrepreneurs in a system of free enterprise." *Breach of Contract Remedies*, *supra* note 59, at 1216; accord, McCORMICK, *supra* note 27, at 567. In practice, however, the certainty rule may have the effect of increasing the riskiness of a business enterprises. The enterprise will have to bear the losses from illegal conduct if its potential profits are not sufficiently certain. In particular, the riskiness of a new business is increased when "new businesses" are precluded from recovery of lost profits from a wrongdoer. See notes 33-34 *supra* & accompanying text. Limiting the legal protection available to a new business imposes an artificial handicap on a kind of risk-taking that may be especially important to the economy. Cf. Domar & Musgrave, *Proportional Income Taxation and Risk-Taking*, 58 Q.J. ECON. (1944), reprinted in READINGS IN THE ECONOMICS OF TAXATION (R. Musgrave & C. Shoup ed. 1959) (valuable risk-taking is likely to be discouraged by a tax policy that allows the deduction of losses only by companies with prior earnings).

69. Courts in contract cases may find a compromise outcome by awarding damages based on plaintiff's expenses in reliance on the contract. See Fuller & Perdue, *The Reliance Interest in Contract Damages*: 2, 46 YALE L.J. 373, 373-77 (1937). Awarding expectancy damages explicitly discounted for uncertainty, as recommended in this Article, is more likely to serve the policies underlying the award of expectancy damages in contract cases than awarding reliance damages because the plaintiff's expenses are correlated only imperfectly with the economic value of his lost expectancy.

The certainty rule also may operate to limit the plaintiff's damages rather than simply to deny them altogether if the plaintiff is able to satisfy the rule by showing lost earnings on the basis of a past record but is precluded from showing an expected increase in earnings. Even in this case, however, the plaintiff is denied any recovery for the opportunity for increased earnings, even though that opportunity has a value.

70. McCORMICK, *supra* note 27, at 119 (giving all or nothing "seems to result in oscillation between overlavishness and niggardliness"); *Breach of Contract Remedies*, *supra* note 59, at 1214-15 (if alternative lesser measure of damages is not available, the certainty rule imposes "the Draconian choice of all or nothing;" "it is hard to defend a requirement that attempts to cope with the necessity for speculation by denying recovery altogether rather than by resorting to reasonable approximation"); *Lost Profits*, *supra* note 31, at 1017, 1020, 1024.

71. Discussing the new business rule in contract cases, a recent student Note calls for a compromise to permit some recovery by a plaintiff while avoiding an unduly large verdict. *New Business Rule*, *supra* note 23, at 705, 729-33. One suggestion, *id.* at 730-31, that the alternative earnings of plaintiff's freed capital in a riskless investment be deducted from

When the plaintiff's potential earnings are uncertain, damages are awarded, but the amount is reduced to the extent that the uncertainty reduced the value of the potential earnings. The function of the certainty rule in limiting damages is also served; a court confronted with uncertain proof of damages need not permit the plaintiff to recover the full amount demanded but, instead, using well-recognized financial tools, may make an appropriate adjustment for the risk associated with the plaintiff's opportunity. Both undercompensation and overcompensation are thus avoided.

#### PRECEDENT FOR DISCOUNTING FOR RISK

Discounting damages awards for risk would involve a modification of current legal principles. Courts have sometimes responded intuitively to uncertainty by reducing the amount awarded; use of the techniques of financial analysis would yield a more principled approach to uncertainty.

#### *New York Cases Making an Allowance for the Riskiness of an Occupation*

The seminal opinion in a series of New York cases discounting for risk was written by Judge Breitell in *Grayson v. Irumar Realty Corp.*<sup>72</sup> The plaintiff was a twenty-one year old woman who had been preparing for a career as an opera singer. The testimony indicated that she had a superior voice and was preparing for a European debut. Injuries to the plaintiff, caused by the defendant's neg-

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damages, seems to be required by the principle that plaintiff must minimize damage. Cf. *Vandervelde v. Put and Call Brokers and Dealers Ass'n*, 344 F. Supp. 118 (S.D.N.Y. 1972) (deducting the interest in estimating plaintiff's damages). A second suggestion is that an expected-value deduction be made, thereby dividing the risk of failure between the parties. *New Business Rule*, *supra* note 23, at 731. The plaintiff, however, originally bore the riskiness of its earnings possibilities, and the damage award should be calculated so that this risk is not shifted to defendant. The Note also suggests a compromise basing the award on the possible outcome most adverse to the plaintiff, "even though a plaintiff might legitimately ask for damages based on the most likely outcome." *Id.* at 732-33. Awarding the expected value, discounted for risk, seems preferable to an award based on either the worst possible outcome or the most likely outcome. For example, the worse possible outcome of an otherwise very valuable opportunity might be a relatively improbable chance of zero income. An opportunity may be valuable even if there is a possibility of zero or negative income. Finally, the Note suggests that in some circumstances "it is entirely defensible to arrive at some admittedly arbitrary damage figure as a compromise." *Id.* at 733. Discounting for uncertainty, as suggested in this Article, would not be arbitrary.

72. 7 App. Div. 2d 436, 184 N.Y.S.2d 33 (1959).



ligence, included an impairment of pitch, thus limiting her performance. The jury was permitted to consider evidence as to her potential loss of earnings as an opera singer and awarded damages of \$50,000. The defendant appealed, questioning "whether there may be [an award] where the probability of future earnings is not based upon any prior actual engagement in the vocational earning of income."<sup>73</sup>

Identifying cases presenting similar difficulties of predicting a plaintiff's earnings, for example, claims of pecuniary loss from the wrongful death of children,<sup>74</sup> Judge Breitel concluded that the opportunity to develop special talents "may have a pecuniary value which is assessable, albeit without the degree of precision one would require in a commercial case."<sup>75</sup> Thus, the defendant's contention that no damages should be awarded for lost earnings because their amount was too speculative was rejected. The jury's award of \$50,000, however, was excessive; unless the plaintiff accepted a reduced judgment of \$20,000, a new trial was to be granted.<sup>76</sup>

Judge Breitel's reasoning parallels in many respects the economic analysis proposed in this Article by intuitively adjusting the damage award to reflect uncertainty. The problem of valuing the plaintiff's future earnings was identified. In contrast with other occupations in which earnings of at least a median amount is highly probable,<sup>77</sup> opera singing involves a low probability of high earnings and a high probability of low earnings. Thus, the jury could not assume that a young opera student would earn even the income of an average performer. Despite the high uncertainty regarding the amount of the plaintiff's future earnings, however, her opportunity had some pecuniary value.<sup>78</sup> The court computed this value by reducing the

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73. *Id.* at 437, 184 N.Y.S.2d at 34. The defendant's argument resembled that invoked against the award of damages for loss of earnings in a new business. See notes 33-34 *supra* & accompanying text.

74. There is less certainty in predicting the future earnings of one who has been trained for a profession than in predicting earnings in an occupation such as concert musician, professional athlete, or actor. In a profession, the probability of earning at least a medial income is high, whereas for those with rare and special talents seeking to exploit them, "many are called but few are chosen." In such an occupation there is a low probability of high earnings and a high probability of low earnings.

75. 7 App. Div. 2d at 438, 184 N.Y.S.2d at 35.

76. *Id.* at 440-41, 184 N.Y.S.2d at 37-38.

77. Judge Breitel's discussion is reminiscent of Milton Friedman's comparison of an actor's career with a lottery. See note 45 *supra*.

78. 7 App. Div. 2d at 438, 184 N.Y.S.2d at 35.

amount of damages otherwise appropriate. Judge Breitel, however, failed to explain the method used in estimating an appropriate discount for uncertainty. The allowance for risk made in comparable economic situations was not discussed. It is not clear whether the reduction made was an expected-value deduction or a discount for uncertainty or both. Language in the opinion supports either interpretation. References were made to the imprecision attending any pecuniary valuation of plaintiff's opportunities, the future of a would-be opera singer being described as "highly speculative."<sup>79</sup> These observations would support a discount for uncertainty. By contrast, the emphasis on the high probability of low income in such a career would justify an expected-value deduction. Thus, both a discount for uncertainty and an expected-value deduction would have been appropriate.<sup>80</sup>

Judge Breitel extended the *Grayson* analysis in *Zaninovich v. American Airlines, Inc.*,<sup>81</sup> in which expert testimony indicated that the decedent's income would have increased significantly had he survived. These potential earnings, Judge Breitel concluded, "must be discounted, not only financially in determining present value of future funds, but practically in recognizing that potentialities are contingent and subject to unforeseen and unforeseeable vicissitudes."<sup>82</sup> As to sums which might otherwise have been inherited from the decedent, the court suggested that: "[W]ith people as young as those who died here, at the start of their careers, the contingencies for the far future become extremely great and require an all but total discounting of the suggested expectations."<sup>83</sup> In view of this uncertainty as to the decedent's future earnings, Judge Breitel reduced the jury's \$550,000 award for the death of the decedent-husband to \$350,000.

In *Myers v. Town of Harrison*,<sup>84</sup> the Court of Appeals for the

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79. *Id.* at 440, 184 N.Y.S.2d at 37.

80. *Sutherland v. Auch Inter-Borough Transit Co.*, 366 F. Supp. 127 (E.D. Pa. 1973) (applying Pennsylvania law), involved the potential earnings of another opera singer. *Grayson* was distinguished on the ground that the evidence established that plaintiff would have succeeded in becoming a recognized first-rank opera performer. *Id.* at 132. The court apparently held that because success in opera would have been more likely than not, no deduction or discounting of the award should be made to account for the risk that the plaintiff would not have achieved high rewards. *Id.*

81. 26 App. Div. 2d 155, 271 N.Y.S.2d 866 (1966).

82. *Id.* at —, 271 N.Y.S.2d at 871.

83. *Id.* at —, 271 N.Y.S.2d at 872.

84. 438 F.2d 293 (2d Cir. 1971).

Second Circuit, applying New York law, characterized *Grayson* and *Zaninovich* as authorizing the discounting of damage awards "because of the speculative and highly contingent nature of future earning capacity many years hence."<sup>85</sup> Because the decedent was studying for further technical degrees, the court found it "reasonable to expect that he would move up with the company, although any estimate of his expected lifetime earnings is obviously highly speculative."<sup>86</sup> Because the evidence and the instructions failed to provide a sufficient basis for determining how the award was computed or what elements were considered, the court declined to rule on whether the jury award of \$481,250 was excessive. Sample calculations involving plausible discounting for risk suggest that the jury's award overcompensated the plaintiff.<sup>87</sup>

This line of cases identifies various situations in which, notwithstanding the defendant's conduct, the plaintiff's projected future earnings were subject to substantial risk. Although recovery of damages for these lost earnings was permitted, their amount was reduced to reflect that risk. In making this reduction, the court considered the alternative paths that the plaintiff's career might have taken and the resultant impact on his potential earnings; this is analogous to the economic calculation of risk suggested in this Article.

The choice of the appropriate factor by which to reduce damages seems to have been the result of intuition rather than reasoned analysis. The use of discount factors corresponding to those applied by the market to similar risks was not explored. These cases also fail to recognize that some risk is always present in any damage calcula-

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85. *Id.* at 298.

86. *Id.*

87. Make four assumptions favorable to the plaintiff. (1) The plaintiff would have earned \$25,000 per year, beginning in 1964. (In fact, the evidence did not suggest that he would have received more than \$15,000 by the time of the trial in 1969.) (2) Assume his earnings would have gone on forever, so that a shortcut multiplication calculation can be made. See note 145 *infra*. (In fact, decedent's life expectancy in September, 1963 was 41 years. 438 F.2d at 298.) (3) Assume that \$100,000 is awarded for loss of care and guidance. Compare the trial court's instruction, *id.* at 299 n.2 with *Zaninovich v. American Airlines, Inc.*, 26 App. Div.2d 155, 271 N.Y.S.2d 866, 874 (1966). (4) Assume that a discount rate of 10% is used, with a risk premium similar to those used for corporate bonds.

With these four assumptions, the projected earnings of \$25,000 can be multiplied by 10 to yield \$250,000 as the present value of the total earnings of the decedent. If \$100,000 is added for loss of companionship, a sum of \$350,000 results. The jury award of \$481,250 clearly was excessive.

tion and that the same considerations of fairness and efficiency that call for extensive discounting in cases of high risk support moderate discounting in cases in which earnings were only moderately risky. Moreover, the principle applied by the courts does not seem to have been extended beyond tort cases to other cases in which the plaintiff's uncertain earnings opportunity obviously had some economic value, albeit less than it would have been if receipt of future earnings were certain. Finally, the precise basis for the courts' discounting is ambiguous: either an expected-value deduction or a true discounting for risk may have been made.

### *Other American Cases Allowing for Uncertainty*

A few American cases in jurisdictions other than New York have made adjustments in the amount of damages awarded because of uncertainty as to the amount of the plaintiff's earnings absent the defendant's wrongdoing. These cases often failed to discuss any authority supporting the adjustment or to explain why the adjustment was made. In some of these cases, the courts apparently intended to make an expected-value deduction rather than a discount for uncertainty.

In personal injury cases, courts routinely estimate damages with reference to the injured person's life expectancy or working-life expectancy.<sup>88</sup> An expected-value adjustment is implicit in this procedure, and frequently may be made by taking a "middle" or "typical" figure whenever the factfinder must estimate the duration of an income stream. Similarly, Louisiana appellate courts have taken into account the contingency of periodic unemployment in making final determinations of damages.<sup>89</sup> In one case, the magnitude of the allowance suggests that it could not merely be an expected-value deduction but could only be justified by a further discount for uncertainty.<sup>90</sup>

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88. See note 19 *supra* & accompanying text.

89. See, e.g., *Jordan v. Travelers Ins. Co.*, 257 La. 995, —, 245 So. 2d 151, 154-57 (1971) (trial court erred in denying recovery for loss of earnings where corroborative evidence such as income tax returns was not produced by the plaintiff; a carpenter with five more years of working-life expectancy at \$100 per week was awarded \$10,000 by the Louisiana Supreme Court because construction work was not steady throughout the year, interruptions occurred because of labor disputes, and there were intervals between jobs on various construction projects).

90. In *Fontenot v. Grain Dealers Mut. Ins. Co.*, 170 So. 2d 513, 515 (Ct. of App. 1965), the appellate court reduced the award for lost earnings from approximately \$14,500 to approxi-

In *Jordan v. Bero*,<sup>91</sup> the issue was whether the ten-year-old plaintiff's future pain and suffering, future medical costs, and future earnings could be calculated by the jury with reasonable certainty. The boy had suffered a brain injury and, according to the testimony, had approximately a fifty-one percent chance of suffering future headaches. The court held that the evidence supported an award of \$20,000, but was insufficient to support an award of \$6,000 to the father for future medical costs and his interest in his son's earnings. Justice Neely, concurring, suggested that instead of using a "reasonable certainty" standard in this kind of case, "a person . . . confronted with a ten percent, fifteen percent, or twenty percent probability (in the mathematical sense) that he will suffer future injuries should be [permitted] to recover for those future injuries at least in proportion to the probability of such injuries occurring."<sup>92</sup> This suggestion resembles the discount-for-uncertainty approach suggested in this Article, although it is confined to a narrow class of cases and suggests only an expected-value deduction.<sup>93</sup>

Allowances for uncertainty in a commercial context were made in *Bailey v. Meister Brau, Inc.*<sup>94</sup> The plaintiff, a minority shareholder, brought a derivative and personal action alleging, in part, that some of the defendants had tortiously interfered with his contractual right of first refusal to purchase, from the majority shareholders, stock sufficient to give him a controlling interest in the corporation. The plaintiff personally claimed damages for the value of the lost stock and for lost wages and bonuses that, because of his anticipated controlling interest in the company, he may have directed to himself.

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mately \$5,000, because the plaintiff had not produced evidence that would tend to show the extent to which work would have been available. Unless work would have been available only about one-third of the time, this was equivalent to a discount for the uncertainty of the plaintiff's employment. An adverse inference from the plaintiff's failure to produce evidence as to the availability of employment should not be sufficient to support a conclusion that the plaintiff had only a one-third probability of getting work. The extent of the discount might be at least in part a penalty for the plaintiff's failure to produce the needed evidence. See *Martin Motor Sales v. Saab Scania of America, Inc.*, [1978-1] Trade Cas. ¶ 61,907 (S.D.N.Y. 1978), discussed at note 110 *infra*.

91. 210 S.E.2d 618 (W. Va. 1974).

92. *Id.* at 640-41 (Neely, J., concurring).

93. A student Note endorsed Justice Neely's suggestion and proposed some generalizations, none of which, however, extends to the general problems of uncertainty in damages. See Note, *Awarding Damages for Permanent Injuries: A Proposal to Eliminate the Unreasonableness of "Reasonable Certainty" in Jordan v. Bero*, 4 HOFSTRA L. REV. 101, 109-10, 112-14 (1975).

94. 378 F. Supp. 869, 880-81 (N.D. Ill. 1973), *aff'd*, 535 F.2d 982, 990-91 (7th Cir. 1976).

The trial court found that some of the defendants had wrongfully induced the majority shareholders to sell their stock, previously committed to the plaintiff, to them, and agreed to hold the sellers harmless for any suit that may be brought by the plaintiff. In estimating the value of the stock lost by the plaintiff, the court focused upon the price paid by the defendants, including the value of the indemnity agreement given by the defendants to the sellers. Although the defendant's counsel, in a letter to the defendant's creditors, had estimated the maximum exposure under this agreement to be \$180,000, subject to mitigation by the plaintiff, the trial judge found that the fair value of the agreement was \$100,000, rather than the \$180,000 maximum, because the obligation was contingent upon suit by the plaintiff and was subject to mitigation. The judge failed to explain, however, how the adjustment for risk was calculated.<sup>95</sup> Affirming this portion of the award, the Seventh Circuit commented in cursory fashion that "[t]he court below appropriately discounted that figure . . . ."<sup>96</sup>

Regarding the plaintiff's claim for lost wages and bonuses, the court found that the plaintiff's projections of the company's earnings, upon which these bonuses were contingent, were "unrealistically optimistic," especially in view of "somewhat checkered history" of the company.<sup>97</sup> These projections were based on sales growth in new markets in which the profitability was extremely speculative; "any number of unforeseen circumstances might have prevented [plaintiff's] bright hopes from becoming a reality."<sup>98</sup> This uncertainty, however, did not entirely preclude recovery; the court found that an annual bonus of \$15,000, more than twice plaintiff's average for the previous five years, was a fair approximation, given the history of the company and its chances for continuing profitability.<sup>99</sup> This figure appears to be the result of an expected-value deduction, with little discounting for the substantial riskiness of the projected growth in earnings. Again, however, the court failed to articulate the reasons for selecting \$15,000. The Seventh Circuit affirmed, noting that a trial court had "wide latitude" in fixing damages and that the estimate for lost bonuses

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95. *Id.* at 880.

96. *Bailey v. Meister Brau, Inc.*, 535 F.2d 982, 990 (7th Cir. 1976).

97. 378 F. Supp. at 881.

98. *Id.*

99. *Id.*

was supported by the plaintiff's projections.<sup>100</sup>

The equivalent of an expected-value deduction also may have been made by the trial court in *Riley v. General Mills, Inc.*<sup>101</sup> The plaintiffs, insurance agents, had contracted for a promotional campaign whereby an application for a \$1000 school-child accident and health policy was to be inserted between two packages of gingerbread mix marketed by the defendant. The promotion, backed by an extensive advertising program, was intended to augment the sales of the gingerbread mix. When the defendant breached the contract by discontinuing the promotion after only a few months, the plaintiffs based their claim for lost profits on a guaranteed commission of a percentage on the annual net premium and a contingent commission of a certain percentage on the insurance company's profits.<sup>102</sup> The guaranteed commission depended on the purchasers' response rate, estimated by the plaintiffs to be between sixty and ninety percent and by defendant's experts to be only one percent.

The trial judge, rejecting both of these estimates, criticized the defendant's one percent estimate as "incredible" in view of the advertising that was to have backed the promotion. Such a response ratio would have meant a loss for the plaintiffs, something the judge apparently thought unlikely given the plaintiffs' willingness to undertake the project. The plaintiffs' estimate, however, was too high; it was based on experience with school-child accident programs with different characteristics, and, moreover, the gingerbread mix was a slow seller. The judge concluded that public response would have been twenty-five percent<sup>103</sup> and characterized this prediction as a "reasonable approximation."<sup>104</sup>

This characterization suggests that the court may have made an expected-value deduction, striking a balance among the various possible outcomes. It appears unlikely, however, that the twenty-five percent figure chosen by the court included a discount for risk. That substantial risk attended the promotion was indicated by the

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100. 535 F.2d at 991.

101. 226 F. Supp. 780 (E.D. Pa. 1964).

102. Finding-of-Fact 5 suggests that the insurance company's profits were computed according to a specified formula, so that this may have been in effect simply an additional commission on the annual premium. See *id.* at 781. The court, however, treated this commission as contingent on the actual profits of the insurance company. *Id.* at 785.

103. *Id.* at 784.

104. *Id.*

range of predictions made in the testimony of experts in the field of school-child accident insurance.<sup>105</sup> Moreover, the court pointed to the uniqueness of the campaign in rejecting as speculative the plaintiffs' claim for contingent commissions based on the insurer's profits.

The Ninth Circuit apparently adopted the approach advocated in this Article in *Knutson v. Daily Review, Inc.*<sup>106</sup> The district court found the defendants liable on one of several antitrust counts alleged by the plaintiffs, but refused to award damages, because any award based on the evidence offered by the plaintiffs would be speculative. The Ninth Circuit, by a divided panel, remanded the damages issue as to some of the plaintiffs.<sup>107</sup> The majority noted that certainty in the proof of damages is no longer required in antitrust litigation<sup>108</sup> and concluded, without citing any precedent, that "lack of certainty justifies scaling down the award but not total rejection."<sup>109</sup> Recovery was permitted notwithstanding the uncertainty as to the amount of the plaintiffs' lost earnings; the amount awarded, however, was to be reduced because of that uncertainty. The adjustment called for by the court of appeals corresponds to the uncertainty discount advocated in this Article, although the court gave no guidance to the district court concerning the proper method for calculating the amount of the discount. By adopting as the measure of the discount the rate that the market would attach to a similarly uncertain income stream, a desirable degree of predictability would be fostered.<sup>110</sup>

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105. *Id.*

106. 548 F.2d 795 (9th Cir. 1976).

107. *Id.* at 812, 813.

108. See note 61 *supra* & accompanying text.

109. 548 F.2d at 812-13.

110. The approach recommended in this Article also was adopted in a recent decision under the Automotive Dealers' Day in Court Act, 15 U.S.C. §§ 1221-1225 (1970). In *Martin Motor Sales, Inc. v. Saab Scania of America, Inc.*, [1978-1] Trade Cas. ¶ 61,907 (S.D.N.Y. 1978), Judge Motley made 25% and 50% discounts in estimates offered by the plaintiff to support its damage claims because the evidence supporting the estimates was either incomplete or absent, notwithstanding that such evidence had been available in plaintiff's business records. Noting precedent for denying all recovery on the ground that any estimate under these circumstances was necessarily speculative, the court chose instead to discount the plaintiff's estimates; at one point it described the discounting as arriving at an "understated" profit figure. *Id.* at 73,815 n.10. The inadequacy of the evidence compounded the uncertainty of future profits present in any Dealers' Day in Court case, caused by the vagaries of business, fluctuations in the economy, and doubt as to the franchise's future in the absence of the manufacturer's bad faith. In using three and five year averages for the number of cars of the



*Factfinder Discretion to Allow for Uncertainty*

Frequently, courts have stated that the factfinder has considerable discretion in assessing damages<sup>111</sup> within reasonable limits.<sup>112</sup> This discretion frequently may be used to reduce damages in response to uncertainty concerning the amount of the plaintiff's lost earnings. In *Story Parchment Co. v. Patterson Parchment Paper Co.*,<sup>113</sup> one of the leading cases permitting recovery despite uncertainty as to the amount of damages, the court emphasized that the factfinder may respond to this uncertainty by making a reasonable and probable estimate.

Occasionally, courts imply that a factfinder may, or even must, take into account the contingencies regarding the plaintiff's lost earnings when awarding damages.<sup>114</sup> Thus, the defendant may argue

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defendant's brand sold and the average gross profit for each car sold, the court accounted for yearly fluctuations in the plaintiff's business by an adjustment resembling an expected-value calculation. The discounts of 25% and 50% apparently were intended more to allow for uncertainty than to obtain estimates of the expected value. The plaintiff's estimates were risky, but probably were neither 33% nor 100% too high, as would be true if the correct expected value deduction were respectively 25% or 50%. For example, the plaintiff contended that the profit rate on additives was 45%, which was the profit rate for parts. The courts discounted this estimate by half, to 22.5%; yet the court probably did not mean to conclude that the profit rate was as likely to be 0% as it was to be 45%. The court discounted the plaintiff's estimates for 1973, the first year after the defendant's wrongful act, and for subsequent years. Discounting for uncertainty is appropriate for earnings estimated to have been lost prior to trial as well as for earnings expected to have been received in the future. See note 21 *supra*. In general, the court's approach to an uncertain damages situation, awarding more than zero damages but discounting for that certainty, fits well with the thesis advocated in this Article.

111. See, e.g., *Standefor v. United States*, 511 F.2d 101, 106 (5th Cir. 1975).

112. *Channell v. Anthony*, 58 Cal. App. 3d 290, 317, 129 Cal. Rptr. 704, 722 (1976).

113. 282 U.S. 555, 562-67 (1931). The hope that the damages awarded despite great uncertainty will involve some kind of compromise was expressed in a *per curiam* opinion by the Court of Appeals for the Second Circuit: "[the award of damages in a wrongful-death case is] of necessity a speculation . . . yet we do not for that reason turn the plaintiff out of court; rather we subject the defendant to a decision which, though really without foundation as to its amounts, is the best compromise we can reach . . . to avoid a result which of all possible results is sure to be wrong." *Piczonka v. Pullman Co.*, 102 F.2d 432, 434 (2d Cir. 1939). The language may be attributable to Judge Learned Hand, who sat on that panel. He cited the opinion in expressing similar thoughts three months later in a plagiarism case, *Sheldon v. Metro-Goldwyn Pictures Corp.*, 106 F.2d 45, 51 (2d Cir. 1939).

114. But see *Lakota Girl Scout Council v. Havey Fund-Raising Management, Inc.*, 519 F.2d 634, 644-45 (8th Cir. 1975) (Bright, J., dissenting). Judge Bright argued that the plaintiff's proof of lost profits was too speculative, and objected to the jury's award of \$35,000 on the ground that it was inconsistent with the evidence, which, if believed, would have supported an award of at least \$96,000. The possibility that the jury diminished its award to

the uncertainty of the plaintiff's income to the jury,<sup>115</sup> and some plaintiff's arguments have been held to be prejudicial error because they might have misled the jury into regarding the plaintiff's receipt of the earnings as certain.<sup>116</sup> Appellate courts in these cases, however, seem to have contemplated that the factfinder would make an expected-value deduction rather than a discount for uncertainty.<sup>117</sup>

On at least one occasion a trial court has stated explicitly that it reduced a damage award because of the uncertainty surrounding the amount which the plaintiff would have received; this was affirmed on appeal as within the trial court's discretion.<sup>118</sup> Suit had been brought under the Federal Tort Claims Act for injuries caused by a government-owned bus. The plaintiff, a policeman, contended that the present value of his lost earnings, from the date of his involuntary retirement because of the injuries to the date on which he would have been subject to mandatory retirement, was \$91,000.<sup>119</sup> As one of two alternative grounds for awarding the plaintiff only \$20,000, the trial court concluded that the \$91,000 figure was too speculative because it did not allow for "possible trials and tribulations of life and . . . unforeseen exigencies and circumstances."<sup>120</sup> On appeal, the District of Columbia Circuit Court of Appeals held this to be

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reflect the great uncertainty was not considered. As to the difficulty of determining the basis for a jury's award, see notes 127 & 128 *infra* & accompanying text.

115. *Minch v. Local Union No. 370*, 265 P.2d 286, 292 (Wash. 1953) (trial court has discretion to permit defendants to use a blackboard to demonstrate a possible reduction in plaintiff's yearly earnings based upon evidence implying that employment opportunities in the area were less than maximum during the period involved).

116. See, e.g., *Tenore v. Nu Car Carriers, Inc.*, 67 N.J. 466, \_\_\_, 341 A.2d 613, 622 (1975) (error to introduce tables prepared by an expert witness purporting to show the plaintiff's aggregate damages because, along with other incorrect assumptions, the tables assumed that a lapse in the decedent's earning capacity as a result of illness, incapacity, change of jobs, layoffs or other causes of interruption would never occur); *Cross v. Robert E. Lamb, Inc.*, 60 N.J. Super. 53, \_\_\_, 158 A.2d 359, 372-73 (A.D. 1960) (reversible error for plaintiff's counsel to write on the blackboard figures representing the plaintiff's loss of future income which, among other weaknesses, "failed to allow for the almost inescapable statistical probability that plaintiff would have lost some working time over the years by reasons of vacations, lay-off time between job assignments, illnesses, strikes, and the other contingencies of lost time which workmen on hourly employment are necessarily subject").

117. Judge Friendly, concurring *dubitante* in *Feldman v. Allegheny Airlines, Inc.*, 524 F.2d 384, 393 (2d Cir. 1975), suggested that the trial judge should have taken into account possible adverse contingencies, apparently through an expected-value deduction.

118. *Bradshaw v. United States*, 443 F.2d 759, 771-72 (D.C. Cir. 1971).

119. The court noted that policemen could be retired before the date of mandatory retirement at the discretion of the head of the police department. *Id.* at 771 n.26.

120. *Id.*

proper; the trial court had discretion to take into account the riskiness of the future earnings.<sup>121</sup> Assuming that the \$20,000 award included the \$9,000 for pain and suffering originally requested by the plaintiff, only \$11,000 was awarded for lost earnings. Contingencies favorable to the plaintiff, such as the possibility that the plaintiff might be able to find work in some capacity other than as a policeman, indicated to the appellate court that an award of only \$11,000 for lost earnings was not clearly erroneous.

Other appellate courts have upheld the factfinder's discretion to reduce a damage award to allow for uncertainty. In *Standefer v. United States*,<sup>122</sup> a case under the Federal Tort Claims Act, the government introduced expert testimony that the plaintiff's injuries might decrease his life expectancy by ten to fifteen percent, thus reducing his expected medical expenses. The defendant argued that the district court erred in using mortality tables that were not adjusted to account for this possibility. The Fifth Circuit held that the trial court did not abuse its discretion in finding that the potential reduction in medical expenses was counterbalanced by the contingency that the estimated daily cost of medical care would be insufficient to cover any serious medical complications that might occur. The permitted reduction probably reflected an expected-value adjustment rather than a discount for uncertainty.<sup>123</sup>

In *Frankel v. Heym*,<sup>124</sup> the Third Circuit considered the uncertainty of the plaintiff's future earnings in affirming an award of an amount less than that indicated by the plaintiff's expert's testimony, though such an adjustment was not made explicitly by the trial judge in determining the damages. The plaintiff had completed, with outstanding success, two years of a four-year course in commercial art. The trial court found it "convincingly demonstrated" that she would have earned an average of \$5000 a year as a commercial artist for the period beginning two years after the accident until the date of trial. The court also projected, however, that, but for the accident, the plaintiff would have interrupted her

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121. *Id.* at 771-72.

122. 511 F.2d 101, 106 (5th Cir. 1975).

123. It would have been unsound, however, for the trial court to conclude that the two contingencies counterbalanced each other without satisfying itself that each was of similar magnitude.

124. 466 F.2d 1226, 1229 (3d Cir. 1972), *aff'g* Frankel v. United States, 321 F. Supp. 1331, 1337-38 (E.D. Pa. 1970).

earnings to marry and bear children. Her earnings to age 65, thus interrupted, were projected to be \$125,000; when discounted under the Pennsylvania rule at six percent simple interest, the award was \$62,000. On appeal, the plaintiff argued that the trial court erred in not adhering to the expert testimony of an economist that the plaintiff's probable future earnings, absent the disabling accident, would have been \$237,630. Judge Hastie noted, however, that this testimony assumed that the injured woman would have been employed as a successful commercial artist continuously until normal retirement age, contrary to the district court's finding that substantial interruptions of gainful employment in order to have children would have occurred. He added that "the degree of success [the injured woman] would have achieved in the career for which she was preparing, but upon which she had not yet embarked, was an additional uncertainty which the Court could properly take into account."<sup>125</sup>

These cases indicate, however, that some American courts are sensitive to the uncertainties attending prospective earnings and either adjust or permit juries to adjust the damage award to reflect these uncertainties. The frequency with which factfinders exercise their discretion to reduce damages for uncertainty is difficult to determine. Awards of less than the total amount claimed by the plaintiff have been affirmed as permissible findings-of-fact.<sup>126</sup> It is

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125. 466 F.2d at 1229.

126. *Greene v. General Food Corp.*, 517 F.2d 635, 660-66 (5th Cir. 1975) (affirming the admissibility of a damage expert's analysis of lost profits over a challenge that the evidence was speculative, stating "significantly the jury awarded damages of only half the expert's total estimate of approximately \$150,000"); *Laas v. Montana State Highway Comm'n*, 483 P.2d 699, 703, 705 (Mont. 1971) (plaintiff claimed profits for three years in question to the extent of \$250,000, jury award of \$78,000 affirmed despite a contention that the amount of lost profits was speculative).

In *Tenneco Chemicals, Inc. v. Gulf Naval Stores Co.*, 388 F.2d 302, 303-04 (5th Cir. 1968), the defendant breached a contract to pay the plaintiff a commission on a large quantity of sales of naval stores to foreign markets. The court found that the plaintiff had not presented sufficient evidence to show what profits he had lost, especially his failure to show his expenses as a sales agent. Rather than awarding only nominal damages, the court concluded that in all reasonable probability some damages had been suffered and awarded \$7,500 damages; the plaintiff contended that the damages were \$263,503.81. The Fifth Circuit affirmed, pointing out that an award of \$7,500 on a claim of over one-quarter of a million dollars is little more than nominal, and in any event "represents the considered judgment of the trial judge at the termination of this protracted litigation and we are not disposed to disturb it." *Id.* at 304. The award of \$7,500 could be viewed as involving considerable discounting for risk in a situation in which the plaintiff's failure to produce sufficient evidence had left great uncertainty as to the extent of his lost profits.

unclear, however, whether these reductions reflect a genuine allowance for uncertainty or a disbelief by the jury of a portion of the damages claimed,<sup>127</sup> or simply a compromise among the jurors.<sup>128</sup>

### *English and Canadian Cases Allowing for Contingencies*

#### *English Cases*

Authority for reducing damage awards for risk in order to avoid overcompensating the plaintiff also can be found in English law. When compensating for the loss of periodic income payments, English courts explicitly allow for the "vicissitudes of life," such as unemployment, injury, or early death. The method, which has been described as "remarkably unscientific",<sup>129</sup> involves the application of a multiplier to a multiplicand to determine the plaintiff's anticipated annual earnings. The multiplier takes into account the number of years during which earning power will have been lost, but is reduced because a capital sum is received immediately and can be invested to yield an appropriate annual income. This reduction corresponds to the American courts' reduction to present value. In England, however, courts make a further adjustment for contingencies. The multiplier, chosen from within conventional limits, decreases as the contingencies which might have prevented the plaintiff from receiving the projected income increase.<sup>130</sup>

The calculations in *Mitchell v. Mulholland (No. 2)*<sup>131</sup> illustrate the use of multipliers. The plaintiff, thirty-six years old at the time of trial, had been totally disabled; had he been able to work he would have continued with his present employer for twenty-nine more years, until age sixty-five. As a planning engineer, he formerly had

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127. See *Levi Strauss (Australia) Pty Ltd. v. Mayne Nickless Ltd.* (N.S.W. Ct. App. 1976), summarized in 51 AUSTL. L.J. 211, 212 (1977), in which one judge concluded that the trial court could have found that the plaintiff would have been able to get a refund of half the purchase price from a third person if the defendant had carried out his contract to deliver the returned goods in a reasonable time. See also *Laas v. Montana State Highway Comm'n*, 483 P.2d 699, 703 (Mont. 1971) (jury awarded \$78,000 when the plaintiff sought \$250,000, the court stated "the jury agreed with [plaintiff] to the extent of \$78,000").

128. See, e.g., *Eastern Airlines, Inc. v. McDonnell Douglas Corp.*, 532 F.2d 957, 1000 (1976) (in complicated cases an expert's testimony should be cleansed of unsupportable assumptions or clear errors because of the difficulty in determining whether a jury verdict that awarded less than the testimony called for is the result of effective cross-examination on the area in question or of other factors).

129. ATYAH, *supra* note 39, at 187.

130. See generally H. MCGREGOR, MCGREGOR ON DAMAGES §§ 1100-1101, 1114 (13th ed. 1972).

131. [1971] 2 All E.R. 1205.

a substantial chance of being promoted to a position as a section leader and a remote chance of further promotion. The annual income of a planning engineer, including insurance and pension rights, was £ 1325. This figure may have included an increment of approximately fifty pounds to allow for the chance of promotion.<sup>132</sup> The judge adopted a multiplier of fourteen and awarded lost earnings of £ 17,570, the product of the multiplier of fourteen and the multiplicand of £ 1325.

The plaintiff contended that the determination of a lump sum to be awarded in place of his lost earnings should be guided not by the multiplier approach but by the actuarial and economic evidence he introduced. This evidence, associated in England with the term "actuarial approach," involved a calculation of the lump sum that, appropriately invested in equity and fixed income securities, would be required to insure the plaintiff's receipt of an annual income equal to his greatest income. The plaintiff's experts conceded that such contingencies as sickness or unemployment should be considered and for that purpose two percent was deducted in calculating the lump sum recommended. The Court of Appeals, affirming the award, unanimously criticized the actuarial approach, although one judgment indicated that actuarial calculations might be useful as a check for a judge when selecting the appropriate multiplier.<sup>133</sup>

The judgments gave little explanation as to why the trial court's choice of a multiplier of fourteen was acceptable, though one judgment opined that the two percent discount for contingencies recommended by the plaintiff's experts was "both haphazard and too little."<sup>134</sup> This lack of explanation evidences the importance to English trial judges of convention and custom in selecting a multiplier.<sup>135</sup> This typical rule-of-thumb approach in choosing multipliers was described in dictum in *Taylor v. O'Connor*.<sup>136</sup>

There are two quite separate matters involved [in applying a multiplier]—the present value of the series of future payments and the discounting of the present value to allow for the fact that for one reason or another the person receiving the damages might

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132. *Id.* at 1210.

133. *Id.* at 1219 (Sir Gordon Willmer).

134. *Id.* at 1212 (Edmund Davies).

135. Judges, however, have discretion to modify the multiplier, but only to a modest extent. *Id.* at 1218 (Widgery, L.J.).

136. [1971] A.C. 115, 128.

never have enjoyed the whole of the benefit of the dependency. It is quite unnecessary in the ordinary case to deal with these matters separately. Judges and counsel have a wealth of experience which is an adequate guide to the selection of the multiplier and any expert evidence is rightly discouraged.

Although there is little explanation as to how and why the English courts calculate an allowance for contingencies, the allowance resembles an expected-value deduction. Quoting from an Australian case,<sup>137</sup> the court in *Mitchell v. Mulholland (No. 2)*<sup>138</sup> described the nature of the discount:

Allowances must be made for "contingencies" or the "vicissitudes of life", as they are glibly called. But this ought not to be done by ignoring the individual case in making some arbitrary subtraction . . . Each case depends upon its own facts. In some it may seem that the chance of good fortune might have balanced or even outweighed the risk of bad.<sup>139</sup>

Although an expected-value deduction should not be made if the favorable contingencies counterbalance the unfavorable contingencies, a discount for risk is still appropriate; the existence of unfavorable possibilities is undesirable notwithstanding any favorable contingencies, and a risk-averting public would discount the price offered for any investment accompanied by such contingencies.<sup>140</sup> Moreover, the English process has been described as multiplying the projected income by the probability that it will be received.<sup>141</sup> Another commentator has attempted to measure the average number of days lost per year from strikes, unemployment,

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137. *Bresatz v. Przibilla*, [1962] 32 ALJR 212, 213.

138. [1971] 2 All E.R. 1205, 1212.

139. In stating that the actuarial evidence provided for too small a discount for contingencies, the court in *Mitchell* did not criticize the actuarial expert's use of an expected-value deduction to allow for contingencies. 2 All E.R. at 1212. The views espoused in this expert's testimony are presented in *Prevett, Actuarial Assessment of Damages: The Thalidomide Case—I*, 35 MOD. L. REV. 140, 150 (1972) [hereinafter cited as *Thalidomide Case*]. Arguably, in criticizing the actuarial conclusion favoring an expected-value deduction of only two percent for illness and unemployment, the court effectively made a discount for uncertainty. The court, however, seems to have indicated that a larger deduction for expected value should be made rather than that the uncertainties surrounding receipt of future income called for a discount in addition to an expected-value deduction.

140. That an expected-value deduction is intended should not be obscured by courts' references to "discounting" to account for contingencies. See, e.g., *Taylor v. O'Connor*, [1971] A.C. 115, 128.

141. *Kidner & Richards, Compensation to Defendants of Accident Victims*, 84 ECON. J. 130, 134 (1974).

sickness, and disability and to use that figure to calculate the fraction of the risk-free lump sum which should be deducted to allow for these contingencies.<sup>142</sup> Clearly, this is an expected-value deduction.

The expected-value deduction resulting from the English courts' use of multipliers typically is quite modest.<sup>143</sup> In *Mitchell v. Mulholland* (No. 2), the multiplier of fourteen approved by the Court of Appeals was applied to an annual income figure which apparently included an upward adjustment for what was only "a fair chance" of promotion.<sup>144</sup> A multiplier of fourteen corresponds to a discount rate of seven percent if the annual earnings were expected to continue in to perpetuity.<sup>145</sup> A discount rate that included an appropriate risk premium, reflecting such hazards as loss of employment and other potential disabilities, would have been much higher.<sup>146</sup>

The relatively small size of the adjustment made for contingencies may result from failure by the court or counsel to recognize all

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142. STREET, PRINCIPLES OF DAMAGES Ch. 5, cited in ATIYAH, *supra* note 39, at 195; *Thalidomide Case*, *supra* note 139.

143. Street, *supra* note 142, concluded that a reduction of two percent to six percent would be appropriate and estimated that courts generally deduct more, perhaps about 10%. He did not, however, consider uncertainties in estimating the level of the injured person's future income.

144. [1971] 2 All E.R. 1205, 1210.

145. Because the earnings in *Mitchell* were expected to last only 39 years, the implicit discount rate was somewhat smaller than seven percent. Use of a multiplier as a substitute for discounting a stream of income that is not perpetual necessarily results in some overstatement; for a stream of income expected to last for a brief period of years, the inaccuracy can be substantial. A multiplier of 14 for a perpetual income stream is approximately equivalent to a seven percent discount rate because discounting a perpetual stream by a discount rate of  $R\%$  is mathematically equivalent to multiplying the income stream by  $100/R$ , according to the mathematics of geometric series. See S. SALAS & E. HILLE, *CALCULUS* 488-89 (2d ed. 1974).

Another way of estimating the discount rate implicit in the multiplier approach is the following: the trial judge used a multiplier of 14; when applied to the annual earnings figure accepted as correct, £ 1,325, an award of £ 18,500 resulted. [1971] 2 All E.R. at 1221. The judge also assumed that the plaintiff would have been employed for another 30 years, had it not been for his injuries. The present value of one pound per year for 30 years, discounted at six percent, is £ 13.8. See BRUDNEY & CHIRELSTEIN, *supra* note 2, at 37. Thus a multiplier of 14 is approximately equivalent to a discount rate of six percent. If a discount rate of 15% had been used, the award would be £ 8,705.25, less than half that computed with a six percent rate or a multiplier of 14.

Lord Widgery commented that the conventional multiplier used by the trial judge did not lead to strikingly different results from those arrived at by the plaintiff's expert, who used a discounting approach. The plaintiff's expert had used low discount rates. [1971] 2 All E.R. at 1211, 1217.

146. Cf. notes 39-57 *supra* & accompanying text.



the contingencies that may endanger the prospective earnings of an individual. In *Taylor v. O'Connor*,<sup>147</sup> the damages included an estimate of the value of support payments which the decedent would have made to his wife. In the years preceding his death, the decedent's share as a partner in an architecture firm had been £ 7281, £ 9135, £ 11,295, £ 14,890, £ 16,848 and £ 17,167. One of the decedent's partners asserted that, according to the partnership's plans, fee income would have doubled during the next ten years so that the total gross income of the decedent for the twelve years prior to his retirement would have been £ 265,000.<sup>148</sup> The court agreed that, during the twelve years prior to his retirement, the decedent's annual gross earnings would have been £ 21,000,<sup>149</sup> and this figure was used in the court's subsequent calculations.<sup>150</sup>

Despite the steady growth of income realized by the decedent in the six years preceding his death, the prediction that his income would have continued to grow to an average of £ 21,000 per year during the next 12 years was uncertain. His partner's statement that this income would have doubled may be questioned; not all plans and goals of a firm are realized, and continued growth for any firm is subject to risks and fluctuations. Nevertheless, Lord Reid stated that "any discount for contingencies should be comparatively small."<sup>151</sup> This failure to account for the contingency that earnings might not grow as planned may be explained in part by the defense counsel's concurrence with the plaintiff's estimation of the decedent's future income, which recognized only the possibility of sickness as a relevant contingency. Although the defendant's counsel noted that the decedent might have left more to his daughter than

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147. [1971] A.C. 109 (1970).

148. *Id.* at 117.

149. *Id.* at 127.

150. *Id.* Averaging high and low years leads to inaccuracies if discounting is appropriate, because earnings in a more remote year are less valuable than earnings in a current year:

Since averaging transfers money from the years of high contributions to the years of low contributions, it would have no effect on the award at all if all years were treated alike. But it is the purpose of discounting present value to treat different years differently; discounted . . . at 3 ½ percent . . . , a dollar which would have been contributed at the time of the judgment is worth a dollar, one which would have been contributed 10 years later is worth about 71 cents, and one which would have been contributed 29 years later is worth only about 37 cents.

*LeRoy v. Sabena Belgian World Airlines*, 344 F.2d 266, 278 (2d Cir. 1965).

151. [1971] A.C. at 128.

to the plaintiff-wife, he failed to emphasize other relevant contingencies to which the decedent's future income was subject.

Thus, in their approach to uncertainty, the English cases correspond only partially to the approach recommended in this Article. English courts take note of only some of the adverse contingencies that usually accompany the prospects of future earnings, failing particularly to consider the uncertainty of possible increases in potential future income. Moreover, these courts seem to make only an expected-value deduction, not a genuine risk discount of the sort necessary in a market to make a risky investment attractive to a risk-averse public.

### *Canadian Cases*

Canadian courts make allowances for contingencies when awarding damages in torts cases, but in so doing follow an actuarial approach rather than the rule-of-thumb multiplier approach adopted by the English courts.<sup>152</sup> Canadian courts permit actuarial evidence and discuss probabilities, life expectancy, and discounting to present value. Allowances for contingencies have ranged from ten percent to thirty-seven percent.<sup>153</sup> Use of the actuarial approach has led to much greater allowances for contingencies in Canadian than in the English cases.<sup>154</sup>

Although Canadian courts speak favorably of the actuarial approach, they often fail to explain how an allowance for contingencies is calculated.<sup>155</sup> Similarly, although they recognize contingencies such as ill health or unemployment,<sup>156</sup> Canadian courts frequently fail to consider the uncertainty inherent in predicting what the injured person's income would have been.<sup>157</sup> Some recent decisions,

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152. Charles, *Justice in Personal Injury Awards: The Continuing Search for Guidelines*, in *STUDIES IN CANADIAN TORT LAW* 58-60 (L. Klar ed. 1977).

153. *Id.* at 59-60 & n.107.

154. *See* note 145 *supra*.

155. *See, e.g.*, Keizer v. Hanna, 64 D.L.R.3d 193, 198-201 (Ont. Ct. App. 1975); White v. Parkin, 46 D.L.R.3d 411, 419-20, 423 (B.C. 1974); Hawrigluk v. Hodgins, 29 D.L.R.3d 403, 407, 409-10 (Ont. Ct. App. 1972); Spurr v. Naugler, 50 D.L.R.3d 105, 113-15 (N.S.S. Ct. Trial Div. 1974).

156. *See, e.g.*, Jackson v. Millar, 59 D.L.R.3d 246, 256-57 (Sup. Ct. Can. 1975).

157. Teno v. Arnold, 67 D.L.R.3d 9, 12, 26, 30 (Ont. Ct. App. 1976), involved brain-damage injuries to a four-year-old plaintiff. Without these injuries, the court found, she would have earned \$10,000 per year, her mother's income, from age 19 to age 65. A five-percent discount rate was used; discussion of contingencies included illness or disability from other sources, but not the possibility that she would have earned less than her mother.

In *Keizer v. Hanna*, 64 D.L.R.3d 193 (Ont. Ct. App. 1975), the decedent had been earning about \$10,000 per year, but the trial court accepted with "little doubt" the projection of the decedent's foreman that those earnings would have risen to \$13,500 within two years. *Keizer v. Hanna*, 55 D.L.R.3d 171, 177 (Ont. Ct. App. 1975). The appellate court held that the trial court erred in declining to make deductions for such contingencies as accident or illness on the ground that they were unlikely to occur. 64 D.L.R.3d at 200. The court, however, did not discuss the possibility than an increase in earnings to \$13,500 might not have occurred. See also *White v. Parkin*, 46 D.L.R.3d 411 (B.C. 1974), in which an actuary testified to the present value of plaintiff's lost wages, assuming a four percent annual increase; the court held that an allowance must be made for contingencies such as illness or unemployment, but did not mention the contingency that wages might not grow at a rate of four percent. *Id.* at 419.

158. In *Andrews v. Grand & Toy Alberta Ltd.*, 64 D.L.R.3d 663 (Alta. 1975), *leave to appeal to Supreme Court of Canada on damages issues granted* (April 1, 1976), the plaintiff's wages had been \$830 per month at the time of the accident. His foreman testified that he was a good apprentice and that, before the accident, he had a very good chance for promotion to a supervisory position, with earnings between \$1,115 and \$1,750 per month. The appellate court reasoned that an assessment somewhere between the potential maximum of \$1,750 and \$830 would have been "realistic." *Id.* at 690-91. Thus, the trial judge should have assessed the decedent's earnings at the "more realistic, albeit arbitrary, . . . figure of approximately \$1,200 per month" rather than \$830 per month. *Id.* at 691. The trial judge's deduction of 20% for contingencies was approved, although the appellate court's projection of a figure that reflected the probabilities of promotion was riskier than that used by the trial judge. Similarly, in *Spurr v. Naugler*, 50 D.L.R.3d 105, 107, 109, 113-14 (N.S.S. Ct. Trial Div. 1974), the judge made an expected-value adjustment by increasing the assumed income of a decedent whose salary probably would have increased. The possibility of receiving a higher or lower salary was a contingency to be considered, although the selection of the allowance for contingencies was not explained.

In *Babineau v. MacDonald* (No.2), 59 D.L.R.3d 671, 674-77 (N.B. App. Div. 1975), the trial judge based his calculation on testimony which assumed that the decedent, a traveling salesman, would have received an earnings increase of seven percent per year; he reduced the award by 35% because of various contingencies. The appellate court did not accept the projection of seven percent yearly but used a figure for pecuniary benefits available to dependents that was 20% higher than the decedent's contributions at the time of death. Use of a more conservative figure for earnings growth reduced the risk that the decedent's earnings were overestimated; the appellate court did not discuss this fact, but its allowance for contingencies was approximately 15,000 or only about 16%.

95,000

In *Willey v. Cambridge Leasehold Ltd.*, 57 D.L.R.3d 550, 563-71 (P.E.I. 1975), the court's attention was drawn to the uncertainty of the decedent's future income because the uncertainty was dramatically high. Decedent was a retired professor of education with a pension. He had been working for the University of Prince Edward Island at a salary of \$10,000 per year for one year; testimony showed that he probably would have been retained for further years and perhaps would have taught in summer school, with a maximum salary of \$12,000. The trial court applied a higher multiplier to the pension figure than to the outside earnings as a university teacher because the latter was much more uncertain. The trial court reasoned that the extra income was potentially \$12,000 and that it was possible for the decedent to earn such extra income for a period of 12 more years. It adjusted for uncertainty by treating his income as averaging \$6000 over a period of 8 years. The appellate court made a further reduction and assumed that the extra earnings would last for five years. With these adjustments capitalization took place at an interest rate of six percent per year.

however, have made explicit or implicit allowance for this major source of uncertainty,<sup>158</sup> though they are indications that only an expected-value deduction was intended.<sup>159</sup>

### *Value-of-the-Chance Cases*

In the "value-of-the-chance" category of cases, recovery of damages is permitted although the proof fails to establish that the plaintiff had a greater-than-even chance of having any earnings. The classic example is an English case, *Chaplin v. Hicks*.<sup>160</sup> The defendant, a theater manager, was to choose twelve prize-winners from

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159. *Andrews v. Grand & Toy Alberta Ltd.*, 64 D.L.R.3d 663, 690-91 (Atla. App. Div. 1975), *leave to appeal to Supreme Court of Canada on damages issues granted* (April 1, 1976) (uncertainty as to the decedent's future income accounted for by use of a figure less than the projected maximum but more than earnings at time of death); *Thornton v. Board of School Trustees*, 57 D.L.R.3d 438, 462-63 (B.C. 1975) (possible beneficial contingencies, such as salary increases, had been equal in likelihood to adverse contingencies, such as unemployment or alcoholism, so no deduction was made for contingencies); *Keizer v. Hanna*, 64 D.L.R.3d 193, 200 (Ont. Ct. of App. 1975) (reductions from the maximum possible damages must be based on the probability of each adverse contingency).

The difference between the Canadian approach to uncertainty and the discount-rate procedure recommended in this Article is illustrated in *Haley v. Richardson*, 60 D.L.R.3d 480 (N.B. 1975). The trial court based its determination of the decedent's prospective contribution to his dependent's support on projected future earnings, using as its basis the decedent's average earnings for the three years preceding his death. The appellate court revised this estimated annual contribution figure to \$6000. The appellate court also concluded that the decedent would have been employed for an additional 16 years, and discounted the annual contribution, at \$6000 for 16 years, by six percent, yielding a present value of \$60,635. To account for contingencies, such as ill health, accident or business competition, or the possibility that the decedent's wife would remarry, the appellate court deducted an additional \$10,000 from this estimate, a reduction of almost 17 percent. In contrast, use of a risk premium of nine percent, added to the six percent present-value discount applied by the court, would have yielded a total discount of 15 percent, or a total present value, for \$6000 earned over 16 years, of \$35,760. Thus, the expected-value deduction typically made by the Canadian courts may result in an ultimate figure much higher than the value of a similar opportunity if it were sold on a hypothetical market.

160. [1911] 2 K.B. 786. Simple calculations indicate that, on the assumption that each contestant had a chance of about one-in-four, the jury in *Chaplin v. Hicks* seems to have made a discount for uncertainty. The award of £ 100 was less than the expected value of the prize that plaintiff would have received on the assumption that her chances were as good as those of the other 49 contestants. Of those prizes, one-third consisted of employment for wages of £ 260 per year for three years, one-third consisted of wages of £ 200 per year for three years, and one-third consisted of £ 156 per year for three years. Thus, the expected value of the prize was £ 208 per year, for three years. With a one-in-four chance of winning a prize, the plaintiff's expected gain was £ 52 per year for three years. Only with a discount rate over 20% would this sum fail to be more than £ 100. See the tables in BRUDNEY & CHIRELSTEIN, *supra* note 2, at 37. Thus, the jury in effect applied a discount rate with a substantial risk premium to the plaintiff's expected gains.

among fifty finalists in a beauty contest. The plaintiff was among the fifty finalists. The prize for each of the twelve winners was to be theatrical employment for three years. The first four were to be paid five pounds per week; the second four, four pounds per week; and the last four, three pounds per week. The defendant was held liable for breach of contract for failing to notify the plaintiff to be present for the final judging. The jury valued the plaintiff's lost opportunity at £ 100. The judgment was affirmed unanimously in the Court of Appeals, despite the great uncertainty in assessing the plaintiff's chance of victory and, therefore, her pecuniary loss. The court reasoned that the average chance of each competitor was about one in four. Although none of the fifty competitors could have sold her opportunity, a jury might be able to value the opportunity on the basis of the price which might have been paid for it in a hypothetical market.

The value-of-the-chance approach resembles that suggested in this Article. If an opportunity to make profits has been lost, some recovery should be permitted even if the gains are very uncertain. Cases involving contests, applying both an expected-value deduction and a discount for uncertainty, may be generalized to support an approach to damage law which recognizes that, although uncertainty diminishes the value of an opportunity, it does not render it worthless.<sup>161</sup>

One argument supporting such an extension to cases involving lost profits compares a contest to a potential sale by a business. Repeated sales efforts should lead to a predictable number of sales even if many attempted sales are unsuccessful.<sup>162</sup> A second argument is that the opportunity to make profits may have a market value on which an award of damages may be based.<sup>163</sup> This argument was adopted by the court in *Chaplin*, though the market re-

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161. See DOBBS, *supra* note 24, at 155-57 (limiting the approach to cases in which one can assign "capital value by reason of profits that would result with reasonable certainty from the value of the chance," *id.* at 156); McCORMICK, *supra* note 27, at 117-19, 123 (limiting the approach to situations in which the amount of the potential prize is fixed). But see MCGREGOR, *supra* note 130, at §§ 254, 266-71 (suggesting considerable scope in the United Kingdom for the value-of-the-chance approach).

162. McCORMICK, *supra* note 27, at 118-19. The argument seems to correspond to what probabilists know as the law of large numbers. With repeated trials of a risky opportunity, the average number of successes should correspond very closely to the expected value of the outcome of one trial. See 1 W. FELLER, AN INTRODUCTION TO PROBABILITY THEORY AND ITS APPLICATIONS 243 (3d ed. 1968).

163. See DOBBS, *supra* note 24, at 156.

ferred to by the court, and thus the market value of the contestant's opportunity, was hypothetical only. Any risky opportunity has at least a hypothetical market value that can be established not only by evidence as to what buyers and sellers actually have paid for similar opportunities but by rough projections based on what buyers and sellers pay for earning prospects subject to similar risks.

Courts and commentators, however, have been cautious in extending the value-of-the-chance approach to non-contest situations. This reluctance remains despite the fact that the value-of-the-chance approach prevents undercompensation by allowing a plaintiff to recover though the amount of his losses is uncertain and prevents overcompensation by awarding a plaintiff less than the most optimistic sums.

Commentators who have advocated the extension of the value-of-the-chance approach have suggested that it be extended only to limited classes of cases. Dobbs suggests that the approach be extended only to situations in which a market value can be established for the lost opportunity.<sup>164</sup> McCormick has suggested limiting any extension to cases in which there was either no chance of actual loss by the plaintiff or the chance of success was greater than the chance of loss.<sup>165</sup> Limiting the value-of-the-chance approach also is proposed in Section 332 of the Restatement of Contracts,<sup>166</sup> which suggests that the promisee should recover damages measured by the value of his opportunity, but limits the principle to situations in which performance by the promisor might never have occurred and in which determining with reasonable certainty whether the per-

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164. *Id.*

165. McCormick, note 26 *supra*, at 120-23; *cf.* *Sykes v. Midland Bank Ex'r and Trustee Co.*, [1971] 1 Q.B. 113, 130 (no damages awarded when it was more probable than not that the plaintiffs would have failed to take advantage of the opportunity they would have had if defendant-solicitor had given them the correct advice). Such a restriction is arbitrary. The possibility of a loss does not imply that an opportunity is not valuable, perhaps very valuable. In fact, an opportunity in which the chance of success is very small may be quite valuable if the prize is great. In the classic contest cases, such as *Chaplin v. Hicks*, the probability of winning a prize is often less than 50%. In fact, if an entry fee has been paid, such a contest could be viewed as one in which a loss will occur more than 50% of the time. In many business opportunities, for example in the exploration for oil, the probability of success is less than the probability of failure, and yet the opportunity is viewed in the market place as valuable. See C.J. GRAYSON, DECISIONS UNDER UNCERTAINTY: DRILLING DECISIONS BY OIL AND GAS OPERATORS 61, 103 n.25, 157, 160, 170, 251 (1960) (drilling often is undertaken with chances of success less than one-half; for representative years, drilling of "new field wildcats" has been successful much less than half the time).

166. RESTATEMENT OF CONTRACTS § 332 (1932).

formance by the promisor would have been required is impossible. Yet, uncertainty as to whether the defendant's performance would have been required does not differ in any significant way from other uncertainties.

Courts are also reluctant to follow the value-of-the-chance approach of awarding less than the maximum amount that the plaintiff might have received to account for uncertainty regarding the plaintiff's opportunity. For example, in *Sykes v. Midland Bank Executor and Trustee Co. Ltd.*,<sup>167</sup> both parties attempted to extend the value-of-the-chance approach to the negligent failure of a solicitor to give correct advice as to the meaning of a clause in the plaintiffs' lease. It was uncertain whether the plaintiffs would have attempted to obtain a reduction in the rent had they known of the correct and disadvantageous construction of the clause. The defendant urged that any damages awarded should be reduced to reflect the chance that the plaintiffs would not have acted differently had they been advised correctly. Upon appeal, the plaintiffs' counsel relied on the value-of-the-chance approach, arguing that despite this uncertainty some damages should be awarded to compensate for the loss of the opportunity to negotiate with a correct understanding of the applicable law. English courts have been more willing to extend the value-of-the-chance approach to non-contest cases than American courts,<sup>168</sup> albeit only in limited classes of cases.<sup>169</sup> Lord Justice Salmon, in his judgment, was unwilling to award damages to the plaintiff; he thought it more probable than not that the plaintiffs would have acted just as they did even with the correct legal advice. He added that, if the plaintiffs had succeeded in establishing that they would have taken corrective action if given careful

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167. [1971] 1 Q.B. 113, 130.

168. See, e.g., *Developments in the Law, Damages 1935-1937*, 61 HARV. L. REV. 113, 123 (1947). Although the statement is still correct, an exception is *Lakota Girl Scout Council, Inc. v. Havey Fund-Raising Management, Inc.*, 519 F.2d 634, 640 (8th Cir. 1975), which permitted recovery of lost profits despite uncertainty, citing a contest case, *Wachtel v. National Alfalfa Journal Co.*, 190 Iowa 1293, 176 N.W. 801 (1920). A number of non-contest Iowa cases, however, also were cited to support recovery of lost profits if a reasonable approximation of the loss was possible. The jury exercised its discretion to award a sum considerably less than the maximum amount supported by plaintiff's evidence. Cf. note 170 *infra*. The jury may have made a reduction for the riskiness of the plaintiff's potential gains.

169. MCGREGOR, *supra* note 130, at §§ 253, 264-71 (suggesting that the value-of-the-chance approach is more often used in connection with "one-shot" opportunities, as when a solicitor negligently handles a matter for a client, than when an opportunity to receive profits over a period of time has been lost).

advice, then no discount should be made, and an award equal to the sum which it would have saved should be given. In effect, Lord Justice Salmon concluded that the value-of-the-chance approach should not be used to reduce damages because of uncertainty if the plaintiff can establish that it would have received the sum in question.<sup>170</sup>

A somewhat different distinction was made in a recent Australian case. In *Levi Strauss Pty. Ltd. v. Mayne Nickless Ltd.*,<sup>171</sup> the defendant had contracted with the plaintiff to return certain goods to the vendor within a reasonable time but failed to do so. The plaintiff alleged that the vendor had agreed to refund the purchase price if the goods were shipped within thirty days of their arrival in Australia. The trial judge found that shipment within forty-five days would have been within a reasonable time and that if the defendant had shipped the goods within that period the vendor would in fact have accepted them and would have refunded to the plaintiff half the price. Although the appellate court held that the evidence supported the trial court's finding, the court noted that the award could have been based alternatively on a conclusion that one half the purchase price was equal to the value of the refund opportunity.<sup>172</sup> The judgment added, however, that, if the trial court was satisfied that the plaintiff definitely would have received a particular sum, then no allowance for uncertainty should be made.<sup>173</sup> Under this

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170. A failure to adjust for uncertainty occurred in the jury award in an American contest case. Jane Blalock brought a treble-damages suit against the Ladies Professional Golfers Association, alleging that her disqualification from the 1972 Lady Carling tournament violated the antitrust laws. The plaintiff's expert, in an elaborate analysis, noted that in the first nine tournaments in 1972 Blalock had finished on the average 7.9 strokes out of first place. He concluded that the odds against her winning the Lady Carling tournament were 285 to 1 but that the odds were 23 to 1 that she would have won something and that there was a better than even chance that she would have won at least \$1,427.50. He also concluded that she had about the same chance of winning the \$4,500 first prize money as any of her nine principal rivals. The jury awarded \$4,500.00, which was then trebled under the provisions of the antitrust laws. The jury award thus exceeded the expected value of Blalock's lost opportunity in that there was neither an expected-value deduction nor a discount for risk. See Levy, *Antitrust and the Links: Estimating a Tournament Golfer's Score*, *Interfaces* 5, 7, 11, 14 (May, 1976). The district court decision is reported in *Blalock v. Ladies Professional Golf Ass'n*, 359 F. Supp. 1260 (N.D. Ga. 1973).

171. (N.S.W. Ct. App. 1976) (Mahoney, J.A.), summarized in 51 *AUSTL. L.J.* 211 (1977).

172. Clearly the appellate court must have made only an expected-value deduction because an award of 50% of the purchase price can only take place, under the court's theory, if the probability of receiving the purchase price was 50%. If the probability were greater than 50%, the whole purchase price should have been awarded.

173. A commentator on the case points out that the standard English practice of making



view, if a court is satisfied that it is more likely than not that a specific sum probably would have been obtained but for the defendant's wrongdoing, no deduction is to be made for uncertainty. If, however, it is more likely than not that the sum would not have been obtained, then the sum awarded is to be discounted to reflect this uncertainty.

Apparently adopting a similar approach, Professor Dobbs describes the recovery of the market or contract value of the chance as an alternative available to a plaintiff who is unable to satisfy the certainty rule with regard to the profit he claims to have lost.<sup>174</sup> If no discount for uncertainty is made in valuing lost profits when the evidence satisfies the certainty rule, however, overcompensation will take place, and the damages awarded for lost profits will exceed the hypothetical market value of the opportunity to make those profits.

That the principles underlying the value-of-the-chance approach have broad applicability is demonstrated in *Air Technology Corp. v. General Electric Co.*,<sup>175</sup> in which it was uncertain whether the defendant would ever have had to perform its contract. Although the court specifically cited both Section 332 of the Restatement of Contracts and *Chaplin v. Hicks*,<sup>176</sup> its broad language would be applicable to any breach of contract that causes the plaintiff to lose an opportunity for profit. Because the defendant failed to comply with his agreement to subcontract with the plaintiff, the plaintiff lost a valuable business opportunity with the Air Force. The court held that, although damages could be determined with adequate certainty on the basis of the value of that opportunity,<sup>177</sup> the plaintiff's last offer of terms to the defendant could not be viewed as the

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adjustments for the vicissitudes of life in personal injury cases is inconsistent with the approach suggested by the court. Any distinction between the loss of a chance and the loss of an identifiable thing seems illusory since the judge can find a fact to be established, such as the "fact" that an identifiable thing would have been recovered, merely on the balance of probability. *Damages - Breach of Contract - Probabilities as to Events which have not Occurred - Loss of a Chance - Event Foreseeable and Not Unlikely to Result*, 51 AUSTL. L.J. 211, 212 (1977). A finding that there was a 55% chance that a plaintiff would have received \$10,000 and a 45% chance that a plaintiff would have received nothing seems equivalent for all practical purposes to a finding that a plaintiff had a 55% chance of receiving \$10,000 and a 45% chance of receiving nothing.

174. DOBBS, *supra* note 24, at 156.

175. 347 Mass. 613, 627-28, 199 N.E.2d 538, 548-49 (1964).

176. [1911] 2 K.B. 786; see note 160 *supra* & accompanying text.

177. 347 Mass. at 627-28, 199 N.E.2d at 549.

ultimate terms of the parties' unfinalized contract. The defendant might have bargained for better terms; moreover, the Air Force might not have approved the subcontract. Therefore, an appropriate measure of damages would have to reflect the fair value of the plaintiff's opportunity, subject to these contingencies. This approach is consistent with that advocated in this Article.

### VALUING BUSINESSES AND CONTRACTS

By envisioning the plaintiff's income opportunity as marketable, a court will be better able to appreciate the logic of discounting for uncertainty. Unless the court discounts for risk, the plaintiff will be overcompensated if his lost earnings are assumed to be certain, and he will be undercompensated if the opportunity is viewed as valueless.

If the plaintiff's claim is for the destruction of or damage to a business, courts often will discount the anticipated earnings at a rate which includes a risk premium.<sup>178</sup> Discounting for risk comes more naturally because businesses are sold frequently, and most buyers, valuing a business for the earnings it can generate, regard risk as one factor reducing the business' financial attractiveness.<sup>179</sup>

This result is illustrated by the valuation in *Vandervelde v. Put and Call, Broker & Dealers Association*,<sup>180</sup> in which the court held that even a business with uncertain earnings nevertheless has value, though the business' value was discounted for risk. The court

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178. Although Dobbs has suggested that the relaxation of the uncertainty approach to damages in antitrust cases reflects the strength of the policies of the antitrust laws, Dobbs, *supra* note 24, at 152-53, it also may be due to the tendency towards phrasing antitrust claims in terms of the destruction of a business rather than the loss of a business opportunity. The standing requirement of § 4 of the Clayton Act, that the plaintiff must have been "injured in this business or property," 15 U.S.C. § 15 (1970), may be the cause of this choice of language. Courts probably are more familiar with the use of capitalization-of-expected-income techniques to value an enterprise than with the use of the same techniques to analyze an investment opportunity.

179. [T]he discount rate applied [in valuing a business destroyed by an antitrust violation] should vary according to the amount of confidence the trier of fact has in the likelihood that the earnings level he has predicted actually would have been maintained: a low rate to produce a higher award where the business had a stable profit capacity; a high rate to minimize the damages where the firm was less likely to produce a continuing return.

Note, *Private Treble-Damage Antitrust Suits: Measure of Damages for Destruction of All or Part of a Business*, 80 HARV. L. REV. 1566, 1577 (1967). Cf. Greenwold, *Capitalized Pricing of Injury to Capital in Treble Damage Suits*, 45 CORNELL L. REV. 84, 85 (1959).

180. 344 F. Supp. 118 (S.D.N.Y. 1972).

pointed out that the plaintiff's "business [had] potential for profit earnings, and the loss of that opportunity is the focus of [plaintiff's] recovery."<sup>181</sup> Damages were measured by the amount a willing buyer might have paid the plaintiff for the capitalized value of this earnings stream. The court applied a multiplier system widely used by courts and financial analysts in valuing corporations,<sup>182</sup> which involves the use of lower multipliers for businesses whose earnings are uncertain. The stability of an earnings stream, the court emphasized, depends upon the economic outlook in general, the prognosis of the specific industry involved, and the extent to which the business in question might be expected to participate in any future industry success. Under the valuation formula applied by the court, an industrial business that depends on the special skill of its manager in a highly competitive industry should be valued at twice its earnings stream; personal service businesses requiring special skill might be valued at only the value of a single year's earnings.<sup>183</sup> In selecting a multiplier the court analyzed various weaknesses in the plaintiff's business that would have decreased its value to a hypothetical buyer.<sup>184</sup> Despite these uncertainties, the court ultimately selected a relatively high multiplier by which to value the plaintiff's lost business.<sup>185</sup>

A similar allowance for uncertainty was made in estimating the salary that the plaintiff had lost as a result of the defendant's anti-trust violation. The court observed that the plaintiff's salary varied according to the financial condition of the business. Moreover, estimation of the ultimate duration of the plaintiff's business was difficult. The court therefore made an award of one year's average salary, discounting more severely for uncertainty than in the case of the corporation's profits.<sup>186</sup>

Contracts can be sold as well as corporations. Comparison with market transactions may permit recovery by a plaintiff, subject to an allowance for uncertainty resembling the allowance that would be made on the market.<sup>187</sup> Thus, reviewing a case involving an alle-

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181. *Id.* at 145.

182. *Id.* at 150-53.

183. *Id.* at 151.

184. *Id.* at 151, 152.

185. *Id.* at 152.

186. *Id.* at 154.

187. See DOBBS, *supra* note 24, at 143 n.19; MCCORMICK, *supra* note 27, at 103-04.

gation that the defendant's negligent burning of the plaintiff's basket factory prevented the performance of a contract to sell berry crates for a fixed profit of \$3500,<sup>188</sup> the appellate court concluded that recovery of lost profits from the contract should be permitted. The court reasoned that the value of the contract would have been considered by the plaintiffs in appraising an offer to buy their factory together with its outstanding contracts, but the risk of unsuccessful performance by the plaintiffs would also have been considered in valuing the contract.<sup>189</sup> On remand the jury would be permitted to assess damages at an amount lower than \$3500 if the evidence showed that contingencies, such as possible insolvency of the buyer, rendered the contract less valuable. This valuation of the contractual opportunity closely resembles the value-of-the-chance approach discussed previously.<sup>190</sup>

### *Conclusion*

Failure to make an expected-value deduction and a further discount for uncertainty often overcompensates the plaintiff; damages are awarded as though this opportunity had been risk-free and therefore more valuable than it actually was. Courts, perhaps sensing this result, have developed doctrines that may deny the plaintiff any recovery for his lost income opportunity. This is unsatisfactory because it results in undercompensation. Widely used tools of financial analysis are available to achieve more accurate valuation of opportunities for future earnings and thus to avoid this all-or-nothing dilemma. Although courts generally have failed to employ these principles, a number of cases indicate judicial willingness to adjust for uncertainty in valuing lost earnings.

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188. *A.F. Johnson & Son v. Atlantic Coast Line R.R.*, 140 N.C. 574, 576, 53 S.E. 362, 364 (1906).

189. *Id.* The court refused, however, to permit recovery for profits not covered by contracts, pointing out that many contingencies, such as shifts in demand for crates, might cause profits to be higher or lower than the best estimate of the factfinder. Because those contingencies were regarded as significant, the court held that any estimate of lost profits would be speculative. *Id.* at 580, 53 S.E. at 364. The possibility of discounting such an estimate for uncertainty more sharply than the more certain estimate of profits obtainable under the contract was not considered by the court.

190. See notes 40-60 *supra* & accompanying text.