Toward Gender-Neutral Data for Adjudicating Lost Future Earning Damages: An Evidentiary Perspective

Sherri R. Lamb
TOWARD GENDER-NEUTRAL DATA FOR ADJUDICATING
LOST FUTURE EARNING DAMAGES: AN
EVIDENTIARY PERSPECTIVE

Sherri R. Lamb*

TABLE OF CONTENTS

INTRODUCTION .................................................. 301

I. GENDER BIAS IN LOST FUTURE EARNING AWARDS .... 304
   A. Empirical Studies on Size of Damage Awards ....... 304
   B. Gender Differences Inherent in the Factors Used in
      Calculating Damages .................................. 307
      1. Labor Force Attachment .......................... 309
      2. Earnings Patterns .................................. 312
      3. Nonmarket Services .................................. 314
   C. Judicial Traditions in Calculating Lost Future
      Earning Awards ....................................... 316
   D. A Case Refusing to Rely on Gender Specific Data in
      Determining Damages .................................. 319

II. THE CURRENT METHOD OF INTRODUCING EVIDENCE
    OF LOST EARNING CAPACITY AND ITS APPLICATION TO
    THE FEDERAL RULES OF EVIDENCE .................... 320
    A. Relevance ........................................... 320
       1. Rule 402 ......................................... 321
       2. Rule 403 ......................................... 322
    B. Expert Testimony .................................... 323
       1. Rule 702 ......................................... 324
       2. Rule 703 ......................................... 326

III. AN ALTERNATIVE APPROACH: ACHIEVING GENDER-
     NEUTRALITY WHILE REMAINING CONSISTENT WITH
     THE FEDERAL RULES OF EVIDENCE ................. 328
    A. Relevance .......................................... 329
       1. Determining the Probative Value of the Item of
          Evidence .......................................... 329
       2. Identifying the Countervailing Probative
          Dangers ............................................ 332

* B.A. 1994 University of Illinois, Urbana-Champaign; 1997 J.D. Candidate, Chicago-
   Kent College of Law. The author wishes to thank Professor Anita Bernstein for her assistance in
   the writing and editing of this Note.
3. Striking the Balance Between Probative Value and Probative Dangers ........................................ 334
B. Expert Testimony ........................................ 335
  1. Rule 703 .................................................. 336

CONCLUSION .................................................. 337
INTRODUCTION

The damages phase of civil litigation involves quantifying the loss for which the defendant has been found liable, or, in other words, putting a dollar value on that which has been lost. Of the numerous types of damages to be quantified in court, redress for lost earning capacity remains one of the most difficult to measure, and it raises profound social justice issues. By looking at the particular circumstances of a plaintiff’s situation, an equitable determination of loss of future earning capacity can be made. Acute problems arise, however, when the courts must grapple with injuries to children, women, homemakers, and other individuals who are voluntarily absent from the waged workforce. In these situations, there is no earning pattern on which to base an individualized determination of lost future earning potential. This Note will focus on those cases where there is absent or insufficient work history that would help determine future earnings. When such individualized determinations are not possible, the Note argues that courts and experts should rely on gender-neutral statistical data.

2. Recovery of damages for loss of earning capacity is not merely a recovery for lost wages. Damages should be estimated by the injured person’s ability to earn money, rather than what he actually earned before the injury. See 25 C.J.S. Damages § 40, at 724-26 (1966 & Supp. 1995). Lost earning capacity can be summarized as follows:

   Where the injury is a lasting one, which will cause a loss or lessening of future earning power, a recovery may be had for the probable loss of future earnings. In estimating this, account must be taken of the probable length of plaintiff's life, as indicated by his age, health, and occupation, and the mortality tables, while not controlling, may be considered. The full amount of future earnings which are prevented by the injury cannot be awarded, but only their present worth; the annuity tables may be used, but the jury must be instructed to make allowances for the diminution of wages which advancing years would have brought apart from the injury.

4. See Martha Chamallas, Questioning the Use of Race-Specific and Gender-Specific Data in Tort Litigation: A Constitutional Argument, 63 Fordham L. Rev. 73, 76 (1994).
5. See Cassels, supra note 3, at 445.
6. The courts have already held that the use of gender-based actuarial tables constitutes prohibited discrimination in the assessment of automobile insurance rates, see Hartford Acci-
Resorting to gender-specific data can potentially have enormous consequences for plaintiffs in tort actions. In 1990, for example, Professor Richard Stevenson of the University of Iowa's College of Business Administration calculated the projected lifetime income (discounted to present value) of a female college graduate at $1,174,772, compared to a male college graduate's projected income of $1,815,850.\(^7\) The use of such gender classifications means that if a man and a woman with the same educational prospects were permanently disabled, the woman's award would be only sixty-five percent of the man's, a disparity attributable solely to the plaintiff's gender.\(^8\)

The basic strategy for calculating lost future earning capacity is to compare the amount the plaintiff was capable of earning before the injury to the amount the plaintiff is or was capable of earning after the injury.\(^9\) Generally, the authorities agree that this element of damages is intended to compensate for loss of potential.\(^10\) By focusing on what the plaintiff could have earned, rather than what the plaintiff would have earned, the courts developed a theory that authorizes awards for persons who perform unpaid labor in the home or whose work is not...

7. See Chamallas, supra note 4, at 83-84.
8. See id. at 84. Professor Stevenson had extensive experience as an expert witness on damages. See id. Coincidentally, this 65% rate is roughly the same percentage of men's income that women receive for the same work. See Bureau of Labor Statistics, U.S. Dept of Labor, Bulletin No. 2385, Working Women: A Chartbook 21-22, 44 (1991) [hereinafter Working Women Chartbook].
9. See Chamallas, supra note 4, at 79.
10. See id.; see also 25 C.J.S. DAMAGES § 40, at 724-26 (1966 & Supp. 1995). Damages should be estimated by the injured person’s ability to earn money, rather than what he actually earned before the injury. See id. at § 87, at 952-54; see, e.g., Gordon v. Yellow Cab Co. 100 Pa. Super. 558, 561 (1930) (stating that the standard of compensation is not loss of wages, but deprivation or diminution of earning capacity); see also Southern Coach Lines v. Wilson, 214 S.W.2d 55, 56 (Tenn. Ct. App. 1948), which states that:

It is true this distinction is often not observed. Indeed, it is of no practical importance in some cases. For instance, in a case where the plaintiff was earning and, if he had continued to earn at the same rate during the period of his incapacity, his loss in earnings furnishes practically an accurate measure of his loss in earning capacity. But in other cases the distinction is vital and failure to observe it would lead to an unjust result.
otherwise compensated in the market.\textsuperscript{11} The common starting point for calculating loss of earning capacity is the plaintiff's established earnings record.\textsuperscript{12} When the plaintiff does not have an earnings record, or has only a very limited earnings record, it is necessary to turn to statistical data to determine the level of earnings the plaintiff could have achieved.\textsuperscript{13}

Courts, expert witnesses, and lawyers have relied on statistical data divided into gender classifications to calculate loss of earning capacity\textsuperscript{14} under the assumption that the more factors one uses, the more specific and accurate the damage calculation.\textsuperscript{15} The use of such statistical data, however, perpetuates the disparities between men and women in the distribution of personal income.\textsuperscript{16} Despite federal statutes prohibiting discrimination in pay on the basis of sex,\textsuperscript{17} data indicate that women workers earn less per year than men, even though they are employed in the same occupation.\textsuperscript{18} Thus, the economic

\textsuperscript{11} See Chamallas, supra note 4, at 79.
\textsuperscript{12} See id. at 80.
\textsuperscript{13} See 8 Paul M. Deutsch \& Frederick A. Raffa, Damages in Tort Actions § 110.11[2], at 110-8 (1990).
\textsuperscript{14} See Chamallas, supra note 4, at 75.
\textsuperscript{16} See Chamallas, supra note 4, at 85-89; see infra notes 108-16 and accompanying text. It should be noted that men are harmed by gender-specific tables when their wives are killed since they do not receive full compensation for the loss of their wives' services.
\textsuperscript{17} See Equal Pay Act of 1963, 29 U.S.C. § 206(d) (1994), which provides in pertinent part: No [subject] employer . . . shall discriminate . . . between employees on the basis of sex by paying wages to employees . . . at a rate less than the rate at which he pays wages to employees of the opposite sex . . . for equal work on jobs the performance of which requires equal skill, effort, and responsibility, and which are performed under similar working conditions, except where such payment is made pursuant to (i) a seniority system; (ii) a merit system; (iii) a system which measures earnings by quantity or quality of production; or (iv) a differential based on any other factor other than sex. See also Civil Rights Act of 1964, 42 U.S.C. § 2000e-2(a)(1) (1996), which makes it unlawful for an employer "to discriminate against any individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, or national origin."
value of women is often considered to be less than that of men when determining damages in personal injury and wrongful death cases.\textsuperscript{19} The use of gender-based tables assumes that the current pay gap between men and women will continue in the future, "despite ongoing legal and institutional efforts to make the workplace more diverse and less discriminatory."\textsuperscript{20} This practice magnifies the impact of employment discrimination\textsuperscript{21} and devalues the earning capacity of injured women, resulting in widely varying damage awards of equally situated men and women for the same injury.\textsuperscript{22}

Part I of this Note examines data on gender bias in lost future earning awards,\textsuperscript{23} including statistics showing the difference between damages awarded to female plaintiffs and those awarded to male plaintiffs, as well as jury studies used in determining what factors cause this differential. This Section also examines the gender differences in the factors themselves which are used to calculate lost future earning capacity. Finally, this Section reviews cases that refer to gender when discussing the calculation of lost future earnings. Part II examines the current method of introducing evidence of lost future earnings at trial and the corresponding application of the \textit{Federal Rules of Evidence}.\textsuperscript{24} Part III of this Note recommends an alternative, gender-neutral method for determining lost future earning damages while remaining consistent with the \textit{Federal Rules of Evidence}.\textsuperscript{25}

\section*{I. Gender Bias in Lost Future Earning Awards}

\subsection*{A. Empirical Studies on Size of Damage Awards}

The available empirical data confirms that awards received by women tend to be smaller than those received by men and that the disparity is probably traceable, in part, to lower awards for lost future earning capacity.\textsuperscript{26} Future earnings damages were one of many subjects reviewed by task forces assembled to study gender bias in the courts. By 1994, such task forces had been formed in at least thirty-

\textsuperscript{20} Chamallas, supra note 4, at 75.
\textsuperscript{21} See id.
\textsuperscript{22} See infra notes 42-46 and accompanying text.
\textsuperscript{23} See discussion infra Part I.
\textsuperscript{24} See discussion infra Part II.
\textsuperscript{25} See discussion infra Part III.
eight state court jurisdictions,\textsuperscript{27} and twenty-eight had issued reports.\textsuperscript{28} For example, the Washington State Task Force on Gender and Justice in the Courts studied wrongful death cases between 1984 and 1988 and found that the mean damage award for male decedents was $332,166, while the mean award for female decedents was $214,923.\textsuperscript{29} The authors of the report hypothesized that a "significant factor" producing the disparity was the real difference in the earnings of men and women and the assessment of lower worklife expectancy for women, because of women's lower rates of participation in the labor force.\textsuperscript{30}

The disparities in awards found in the Washington Report on Gender have also been found in other state task force studies. The report from the Illinois Task Force on Gender Bias expressed concerns about reliance on generalizations regarding women's economic potential.\textsuperscript{31} According to the Illinois Report, jurors often assume that women's labor force participation will be less than men's either because women will take substantial time out of the labor force to give birth and care for children or because they will work fewer hours per year than men.\textsuperscript{32} The report expressed the view that such assumptions might prevent jurors from judging the plaintiff as an individual based "on the facts of her particular case, unfiltered through historical or societal biases."\textsuperscript{33} The report also faulted the use of statistics based on past experience to predict future patterns:\textsuperscript{34} Statistical models for predicting women's work habits "fail to capture the rapid, sustained increases in women's labor-force participation, and they underestimate future labor-force participation, especially for younger women."\textsuperscript{35} If assessments of female plaintiffs' future earning capacity "are based upon static assumptions drawn from past employment patterns" that, in fact, are rapidly changing, "damage awards may be unfair not only to the individual plaintiff but also to younger women as a class."\textsuperscript{36}

\textsuperscript{27} See Vicki C. Jackson, Empiricism, Gender, and Legal Pedagogy: An Experiment in a Federal Courts Seminar at Georgetown University Law Center, 83 Geo. L.J. 461, 462 n.5 (1994).

\textsuperscript{28} See id.

\textsuperscript{29} See \textit{Washington Report on Gender}, supra note 19, at 89-90.

\textsuperscript{30} See \textit{id.} at 87.


\textsuperscript{32} See \textit{id.} at 187.

\textsuperscript{33} \textit{id.} at 189-90.

\textsuperscript{34} See \textit{id.} at 190.

\textsuperscript{35} \textit{id.} (quoting \textit{King & Smith}, supra note 26, at 14).

\textsuperscript{36} \textit{Id.; see also} discussion infra note 83 (describing that a fifty-year historical period is used in determining employment patterns).
In addition to the various state studies, a nationwide study by Jury Verdict Research, Inc. examined jury awards in personal injury cases. The results showed that women in all age groups except two (age groups sixty to sixty-four and over eighty) received significantly lower mean and median awards for compensatory damages than did men.\(^{37}\) For ages twenty to twenty-nine, women received an average award of $76,117, compared to $236,869 for men in the same group.\(^{38}\)

Furthermore, a study by the Rand Corporation of damage awards in air crash cases found "strong, consistent differences in loss and compensation by sex."\(^{39}\) The authors concluded that the disparity in awards results largely from "differences between the sexes in income, work-life expectancy, and salary growth."\(^{40}\) Another Rand Corporation study, this one of Cook County civil jury verdicts, is consistent with these findings. With respect to the sex of the plaintiff, the authors concluded that "plaintiffs who were male, worked at skilled, blue collar jobs, and who were between 40 and 59 years of age received larger awards than other plaintiffs" primarily because they had larger lost income claims.\(^{41}\)

Jane Goodman, Elizabeth Loftus, Marian Miller, and Edith Greene have also studied the effects of gender bias and stereotypes on wrongful death damages.\(^{42}\) After reviewing past research on gender bias in civil jury awards of monetary damages and analyzing data from the Washington State Task Force on the Economic Consequences of Gender in Civil Litigation Study, the authors generated their own data by conducting a simulated wrongful death jury study.\(^{43}\) In addition to jury verdict amounts, Goodman and her colleagues collected written


\(^{38}\) Illinois Report, supra note 26, at 180-81.

\(^{39}\) Kmio & Smith, supra note 26, at ix.

\(^{40}\) Id.

\(^{41}\) A. Chin & M. Peterson, Deep Pockets, Empty Pockets: Who Wins in Cook County Jury Trials 44 (1985). The authors note, however, that the difference in verdicts also was the result of the more severe injuries received by male workers in the blue-collar occupational group. On average, sales, clerical, and service workers (fields heavily populated by women) received the smallest awards. See id. at 29.


\(^{43}\) The study used simulated wrongful death cases presented to potential jurors on call at the King County Superior Courthouse. See id. at 270. To maximize the proportion of damage awards, the jurors were informed that liability was undisputed. See id. For simplification, the jurors were told that the decedent had experienced no pain and suffering. See id. Jurors then reviewed one of three written case summaries (product liability, automobile negligence, and medical malpractice) describing the wrongful death of a man or woman, survived by his or her spouse. See id. In each case, the decedent was thirty years old, and self-employed with an annual income of $25,000. See id.
statements from sample jurors explaining how they determined an appropriate sum of damages. The research revealed that a “double standard” persists in jury awards for wrongful death depending upon the sex of the decedent. The authors concluded that “it can be traced most directly to stereotypes about employment remuneration, based on longstanding discrimination against women in the workplace” and to “strong stereotypes about male and female roles in the home.”

Although it is difficult to determine whether a particular award in a particular case is biased, the literature and empirical studies reveal that gender-based attitudes and stereotypes are inherent in the calculation of damages by both economists and jurors. Specifically, actual and perceived differences in wages, based upon past discrimination against women, appear to be the primary reasons for the differential in damage awards.

B. Gender Differences Inherent in the Factors Used in Calculating Damages

The economist-statistician, when calculating damage estimations, takes into consideration assumptions regarding the economic potential of women when he or she relies on data specific to woman. This data is then presented to the jury in the form of expert opinion. Fact finders display gender bias when they conclude that such assumptions are true in a particular case and award a woman less for future income than they would award a similarly situated man with the same injuries.

In determining a plaintiff’s future earning capacity, several factors must be taken into consideration. The expert must look at such factors as the plaintiff’s remaining life expectancy; his or her remaining work life expectancy; the trend or expectancy of future earnings; and the effect of factors such as inflation, economic growth, and in-

The damages awarded in the hypothetical cases were similar to those awarded in actual cases. See id. The median award for male decedents was $750,036. See id. The median award for female decedents was $251,607. See id. The difference in awards by gender of the decedent existed for all three case types. See id.

44. See id. at 271-72, 276, 278-80.
45. See id. at 281.
46. Id. at 281-82.
47. When using such tables, the economist assumes that the woman is only capable of earning the average of women in the past.
49. See ILLINOIS REPORT, supra note 26, at 189.
come taxes. After arriving at a prediction of lost earning capacity for the remainder of the plaintiff's worklife expectancy, the expert must then discount the amount to its present value because the plaintiff will receive lump sum payments.

As a practical matter, the most common starting point for calculating the lost earning capacity of adults is the plaintiff's established earnings record. Current earnings are then used as the basis for projecting future earnings levels. The predicted future earnings are calculated for the remainder of the plaintiff's worklife expectancy. Where the plaintiff does not have an established earnings record, the economist must turn to statistical tables to determine the average earnings of persons with similar characteristics as the plaintiff, such as educational attainment.

In calculating the worklife expectancy of plaintiffs, even for plaintiffs with an established work history, economists often rely upon gender-specific worklife tables, which predict that women will spend fewer years in the labor force. Worklife expectancy and life expectancy are separate inquiries. Worklife expectancy is calculated from the working experience of all persons in the plaintiff's gender group. The worklife tables provide an average for the group, reflecting the historical pattern of actual years worked, incorporating rates of unemployment, both voluntary and involuntary, as well as incorporating an expected retirement age.

The basic techniques for calculating lost earning capacity are not dependent upon the sex of the injured party. In either instance, the economic expert is concerned about rates of wage growth, discount

51. See id.
52. See Zabel, supra note 2, at 259.
53. Fringe benefits, such as pensions, social security, retirement, and profit sharing are included within the future earnings projections. See id. at 259 & n.62.
54. See id.
55. See Deutsch & Raffa, supra note 13, § 110.11[2], at 110-8; see also infra notes 181-186 and accompanying text.
57. See Chamallas, supra note 4, at 81.
58. See Deutsch & Raffa, supra note 13, § 110.13, at 110-24.47.
rates, and employee contributions to fringe benefits. However, "a pattern of differences exists for women as a group in three areas: (1) labor force attachment; (2) earnings patterns; and (3) nonmarket services." Each of these may be important in estimating lost earning capacity.

1. Labor Force Attachment

Because a projection of lost wages is made for the duration of the plaintiff's expected working life, a basic issue in determining damages is the probability that the plaintiff will be participating in the work force and employed at any point in time. To determine participation probability, the working life expectancy of the plaintiff needs to be determined. Typically, the common practice is the use of working life tables published by the United States Bureau of Labor Statistics. These tables provide the expected number of working-life years remaining for men and women at any given age. The tables also provide the expected number of working life years for women according to their marital and child care status. Life rates are higher for women than men. However, the participation rate at any age is lower for women. Past discrimination in the hiring and retention of women has lowered their labor force participation. This makes the employment probability lower for the average woman and, all other things being equal, lowers earning capacity estimations for women as compared to men.

61. See id.; see also Zabel, supra note 2, at 254 (describing the method of calculating lost future earnings).
62. BROOKSHIRE & SMITH, supra note 60, § 7.2, at 118.
63. See id.
64. See Brams & Rives, supra note 56, at 125.
65. See BROOKSHIRE & SMITH, supra note 60, § 7.2, at 118.
66. See id.
67. See Brams & Rives, supra note 56, at 125.
68. See BROOKSHIRE & SMITH, supra note 60, § 7.2, at 118; Chamallas, supra note 4, at 81. See also Lea Britmayer et al., The Efficient Use of Group Averages as Nondiscrimination: A Rejoinder to Professor Benston, 50 U. Chi. L. Rev. 222 (1983), for the argument that employers should use gender-neutral life-expectancy tables in employer-sponsored insurance plans.
69. See BROOKSHIRE & SMITH, supra note 60, § 7.2, at 118; Chamallas, supra note 4, at 81.
70. See Brams & Rives, supra note 56, at 127; Ray Marshall & Beth Paulin, Employment and Earnings of Women: Historical Perspective, in WORKING WOMEN: PAST, PRESENT, FUTURE 1 (Karen Shallcross Koziara et al. eds., 1987) ("The cause of today's male-female occupational and earnings patterns are deeply rooted in history, social attitudes, and power relations between labor and management and between workers themselves—both in the workplace and in society at large.").
71. Interestingly, employment rates for those seeking jobs (participating) are not very different for woman as opposed to men. See BROOKSHIRE & SMITH, supra note 60, § 7.2, at 118.
It is the participation probability which results in the earning capacity difference between men and women. The difference in participation rates may be caused by the belief (both in the past and the continuing belief by some United States subcultures) that men should work for remuneration and women should be housewives. Another possible reason is that women may remain out of the work force during pregnancy and may choose not to work while raising their children. By assuming a norm of withdrawal, courts are provided with a justification for discounting the damage award of female plaintiffs to account for the average woman's childbearing years, or for the "negative" contingency of marriage. In discounting the damage award for child-bearing years or marriage, the courts have deviated from the literal definition of lost earnings as a "capacity."

Because the participation rate for women has been dramatically rising over the past few decades toward the male participation rate,
the current tables underestimate future work life durations for women.\textsuperscript{79} A major implication of the change in the female participation rate is that an economic expert would be conservative in projecting into the future the employment probability for an average woman by using even as much as a ten-year historical average of female participation rates.\textsuperscript{80} The historical average is the time period the economist thinks is appropriate for projecting into the future.\textsuperscript{81} A ten-year historical average would use data from the previous ten years as a basis for projecting into the future. A basis for growth projection requires that sufficient years of documented wage history be used.\textsuperscript{82} However, because the female participation rate is steadily increasing, using data from the past ten years would not accurately reflect the participation rates of present-day and future women.

Actuarial tables are generated from age-based data collected over the fifty years prior to the present date.\textsuperscript{83} In tort, a projection of lost earnings must be able to provide an earnings projection for up to sixty-five years into the future.\textsuperscript{84} The tables on which the future earning projections are based were collected from a period when women had less opportunity for higher education and were “far less likely to be part of the paid labour force, rendering the available statistical pool diminutive and skewed.”\textsuperscript{85} Under these circumstances, the past may not predict the future very well.\textsuperscript{86} If based on inequitable, back-
ward-looking data, the future earning projection maintains the wage disparity between the sexes.\textsuperscript{87} It is not presently known how quickly the equalization of wages will occur, but assumptions of continuing gender inequality are inappropriate.\textsuperscript{88}

To further complicate matters, females "vary further around the average than do males."\textsuperscript{89} According to it, it is more difficult to discuss "statistical averages" for females.\textsuperscript{90} This raises questions about the reliability of actuarial expertise (based on gender as the determinative factor) in assessing losses incurred by injured women—an expertise that is increasingly relied upon in serious personal injury cases.\textsuperscript{91}

\section*{2. Earnings Patterns}

In addition to their lower work force participation rates, women also have lower earning scales than men. Median annual earnings for women are approximately seventy-two percent of the median earnings for men.\textsuperscript{92} Women also, on average, enter and exit the work force at a greater rate than do men.\textsuperscript{93} To the extent that this behavior hurts job seniority, women's irregular work schedules may be a factor in lowering the pay of women versus men.\textsuperscript{94} However, even considering factors such as lower participation rates, sex discrimination appears to

\textsuperscript{87} See Gibson, supra note 77, at 198.
\textsuperscript{88} See id.; Marshall & Paulin, supra note 70, at 46. Marshall and Paulin conclude that younger women are likely to retain a substantial amount of the improvement in their relative earnings as they age. Moreover, the observation that young women are now entering less traditional occupations and are spending more time in the labor market reinforces our conclusion that they are likely to continue faring better than their predecessors at each point of the life cycle. As this occurs, the overall sex gap in earnings, and income, should decline considerably more as earlier cohorts of women with relatively low earnings are replaced by the more recent cohorts with higher earnings.

\textsuperscript{90} See id.
\textsuperscript{91} See Gibson, supra note 77, at 197.
\textsuperscript{92} See Working Women Chartbook, supra note 8, at 21. In 1979, female earnings for full-time workers were 60.2\% of male earnings. Women employed full-time as executives, administrators, and managers had median earnings that were 60.5\% of the earnings for men in 1987. However, the overall relationship of female to male earnings for 1987 was 65\%. See Michael L. Brookshire et al., Economic/Hedonic Damages: The Practice Book For Plaintiff and Defense Attorneys § 7.2, 44 (Supp. 1992/1993).
\textsuperscript{93} See Brookshire & Smith, supra note 60, § 7.2, at 125.
\textsuperscript{94} See id.
remain a factor in explaining the male-female pay gap. Past discrimination in the hiring and retention of women has decreased their labor force participation rates and thus their estimated worklife expectancies.

One study in particular has examined the result of the earning pattern and worklife expectancy differences between men and women. In 1985, the Institute for Civil Justice undertook a detailed study of aviation accident litigation in the United States. The study found that when a woman died in an airline accident, the mean compensation received by her beneficiaries was $218,395. When a man died in an airline accident, the mean compensation paid to his beneficiaries was $458,792—more than double that received by the beneficiaries of women. The disparity between the sexes stems largely from differences in income, worklife expectancy, and salary growth.

The authors of the study found that income differences and worklife expectancies together explain ninety-four percent of the sex differences in economic losses. Salary growth differences explain the remaining six percent of the difference in economic loss awards between men and women. For every year that the men's salary growth rate exceeds the women's, this leads to larger losses. Primarily because men work more hours each year than women, expected male salary growth is larger than women's for every year of age. Consequently, the already large disparities between men and women in base-year incomes become even greater as the decedents age.

96. See Brans & Rives, supra note 56, at 127. Although lower female worklife expectancies can be attributed to reasons other than discrimination, such as the fact many women voluntarily leave the work force to raise children, generally awards to women may be “unjustifiably” lower than awards to men. See id.
97. See King & Smith, supra note 26, at ix.
98. See id. at ix, 45.
99. See id.
100. See id. at ix.
101. See id. at ix, 46.
102. See id.
103. See id. at ix.
104. See id. at 46.
105. See id. It should be noted, however, that the base-level pay gap between men and women is narrowing. Although the Bureau of Labor Statistics cites the difference between women's and men's wages as 74 cents on the dollar, a 1996 salary survey by Working Woman magazine shows that in the 28 fields for which salary information was available by gender, women typically earned 85% to 95% of what men in similar jobs earned. See Diane Harris, How Does Your Pay Stack Up?, Working Woman, Feb. 1996, at 27. The occupational fields listed in the study, however, are mostly higher education positions. See The 1996 Salary Survey, Working Wo-
In specific cases involving the earning capacity of women, the fact that the earnings differential of average women is below that of average men may be of no significance. When the injured or deceased woman has wage history for many years, the future will be projected on the basis of her own earnings and her average annual rate of growth in wage earnings.\(^\text{106}\) However, where the woman does not have an earnings record which can be used as a basis for projecting future losses, the use of the sex-specific data tables reflects and perpetuates these problems.

Earning pattern differences, when projected for a remaining lifespan, produce drastically different outcomes by gender.\(^\text{107}\) The use of these tables produces a grossly inequitable result based on a "fortuitous" circumstance of doubtful relevance: the defendant injured a woman rather than a man.\(^\text{108}\)

3. Nonmarket Services

The final area in which women differ from men in terms of lost earning capacity estimates is the value of their nonmarket services. Damage awards based on market notions of future earning capacity ignore the significant amount of nonmarket labor performed by women.\(^\text{109}\) Household services provided by the wife and/or mother constitute the main category of nonmarket services.\(^\text{110}\) One estimation is that "women's yearly nonmarket hours are nearly twice those of men."\(^\text{111}\) Women may recover lower compensation awards because our system of justice does not accurately value such nonmarket activities.\(^\text{112}\)

Some argue that a plaintiff should be compensated for the value of productive activities such as cooking, shopping, caring for children,

---

\(^\text{106}\) Of course, in situations like this there may be a disparity between women who work (and are paid less than similarly situated men) and women with the same education and career aspirations who are not currently working (and thus could receive a "gender-neutral" award because they have no past earnings to project their future earnings). This results in a situation where equal women may receive unequal damage awards. However, a situation like this is still preferable to the present one where both women would receive the lower award. As time progresses and women's work is paid the same as men's, this disparity will disappear.

\(^\text{107}\) See Gibson, supra note 77, at 199.

\(^\text{108}\) See id.

\(^\text{109}\) See ILLINOIS REPORT, supra note 26, at 190.

\(^\text{110}\) See BROOKSHIRE & SMITH, supra note 60, at 126.

\(^\text{111}\) See KING & SMITH, supra note 26, at 15.

\(^\text{112}\) See ILLINOIS REPORT, supra note 26, at 191.
and caring for the home, which take place outside the formal labor market, yet nonetheless have value. Some states now take into account the value of nonmarket services when evaluating the amount of a husband's loss from the death of his wife. Juries are often instructed to consider the replacement cost of the woman's services. However, the value of a woman's nonmarket labor in the home becomes relevant only when she is dead, not when she is alive and suing to recover on her own behalf.

Legal scholars argue that even the replacement cost method of evaluating an injured woman's lost earnings underestimates the value of her services. Judge Richard A. Posner suggests:

[A] minimum estimate of a disabled housewife's lost earnings is the wage she would have commanded in the market (summed over the estimated period of disability and then discounted to present value at the appropriate interest rate), for if the earnings were less, she would switch from household to market employment.

According to Posner, the replacement cost method ignores the quality dimension of the services performed by the woman herself, compared to someone hired to perform them in her stead. There is an argument, therefore, that the damages awarded to a housewife should take into account the opportunity cost of her having foregone employment in the market economy in order to perform nonmarket work in the home. By doing so, the woman's true earning capacity can be valued.

However, the tables upon which future earnings are determined are based on market values and do not take into account the work performed by women in the home. Thus, determinations of earning capacity based on actuarial tables undercompensate women for their work by ignoring the value of women's nonmarket services.

113. See King & Smith, supra note 26, at 15.
114. See Illinois Report, supra note 26, at 191. In New York, for example, juries are instructed concerning the value of services in the home:

In fixing that value you must take into consideration the circumstances and condition of her husband and children; the services she would have performed for her husband and children in the care and management of the family home, finance and health; the intellectual, moral and physical guidance and assistance she would have given the children had she lived. In fixing the money value of decedent to the widower and children you must consider what it would cost to pay for a substitute for her services, considering both decedent's age and life expectancy of her husband and each of her children.

115. See id.
117. See id.
C. Judicial Traditions in Calculating Lost Future Earning Awards

Courts have traditionally calculated lost future earning awards for women while considering a number of "negative" contingencies. For example, courts have decreased damage estimations by subtracting the time a woman might be out of the workforce to raise children. Similarly, courts have considered the effect of marriage on a woman's working life. *Frankel v. United States*\(^\text{118}\) and *Caron v. United States*\(^\text{119}\) are two examples of the traditional approach used by courts when calculating lost future earning capacity.

The principal plaintiff in *Frankel v. United States* was a nineteen-year-old woman named Marilyn Heym, who suffered severe injuries\(^\text{120}\) as the result of an automobile accident.\(^\text{121}\) In determining Heym's lost future earning capacity, the court noted that one of Heym's brothers was a mechanical engineer and the other was in medical school.\(^\text{122}\) At the time of the accident, Heym had completed two years of a four-year course in commercial art and was expected to graduate and enter a career as a commercial artist.\(^\text{123}\) Heym excelled in art.\(^\text{124}\) However, despite the evidence of her promising future, the court noted that consideration must be given to other factors such as the likelihood of marriage and motherhood, and the effect such occurrences would have on earning capacity:\(^\text{125}\)

Marilyn's life of 19 1/2 years, prior to her devastating injuries, presents a clear picture of prospects for marriage. She was attractive, healthy, talented, well-adjusted, and intelligent. . . . There was a likelihood of marriage and motherhood in her future. Marriage probably would have interrupted her career, but with her training she could have resumed her career, if it had become necessary or desirable during or after marriage.\(^\text{126}\)

119. 548 F.2d 366 (1st Cir. 1976).
120. When taken to the emergency room, Heym was in severe shock and appeared to be near death. *Frankel*, 321 F. Supp. at 1335. Her injuries included a compound fracture of the skull, severe brain damage, severe crush injuries to her left hand and wrist, a comminuted fracture-dislocation of the carpal and metacarpal bones of the left hand, a fracture of the left clavicle, contusions of her kidneys, and symptoms of gross convulsive seizures. See id. at 1335-36. Her entire body was spastic, her arms and legs were extended, her hands were deformed, her eyes were rolled back, she had severe bleeding lacerations, and she was bleeding vaginally and through her ears. See id. at 1336. After the accident, her mental age was 5.13 years and her memory was worse than 98% of the population. See id. Heym became psychotic, obsessed with food, and subject to emotional outbursts. See id.
121. Id. at 1333.
122. See id. at 1337.
123. See id.
124. See id.
125. See id.
126. See id. at 1338.
Although the plaintiff's economist calculated Heym's future earnings at $237,630, based on the income of a commercial artist working continuously until retirement,\textsuperscript{127} the trial court reduced that amount by half, estimating Heym's future income as only $125,000, based on the assumption that she would marry and have children, thus interrupting her career.\textsuperscript{128} The trial court's large discount was upheld on appeal.\textsuperscript{129} The court of appeals stated that the "district court, taking into account evidence of Miss Heym's temperament and personality, deemed it probable that she would have married and borne children, with consequent substantial interruptions of gainful employment. . . . This determination was not arbitrary or unreasonable."\textsuperscript{130} Although the opinion was written twenty-five years ago, \textit{Frankel} authorized diminished awards to women because of the assumption that women will not work as many years as men at compensated work\textsuperscript{131} despite women's longer life expectancy\textsuperscript{132} and despite the fact that loss of earning capacity is supposed to measure potential, rather than probable earnings.\textsuperscript{133}

The court in \textit{Caron v. United States}\textsuperscript{134} also used the traditional mode of calculation in determining lost future earning capacity. The court in \textit{Caron} permitted lower awards to women, even for those years in which the court assumed that the women would work full-time. Monique Caron's injuries resulted from the negligent administration of an adult dosage of several immunizations when she was four months old.\textsuperscript{135} As a result of the injections, Caron was permanently brain damaged.\textsuperscript{136} Although her attorney did not contest the assumption that Caron would probably have married and thus interrupted her working life,\textsuperscript{137} he argued that the damage calculation should be

\begin{itemize}
\item \textsuperscript{127} See \textit{Frankel}, 466 F.2d at 1229.
\item \textsuperscript{128} See \textit{id}. In support of its decision, the district court cited \textit{Vincent v. Philadelphia}, 35 A.2d 65, 67 (Pa. 1944), for the proposition that reduced awards to women are proper because of the "lower rate of wages ordinarily obtainable in the industrial world by women as compared with men, and the likelihood of marriage and motherhood, with their resulting effect on the girl's opportunity and capacity to continue through life as a wage earner."
\item \textsuperscript{129} See \textit{Frankel}, 466 F.2d at 1229.
\item \textsuperscript{130} \textit{id}.
\item \textsuperscript{131} \textit{id}.
\item \textsuperscript{132} See 2 \textit{National Center for Health Statistics, Vital Statistics of the United States}, 1991 \textsuperscript{\textit{supra}} note 10.
\item \textsuperscript{133} \textit{supra} note 10.
\item \textsuperscript{134} 548 F.2d 366 (1st Cir. 1976).
\item \textsuperscript{136} \textit{id}.
\item \textsuperscript{137} In fact, plaintiff's own expert exempted a ten-year period from his computations to account for "the average female's child bearing years." \textit{id} at 398.
\end{itemize}
based on the earnings of an average worker, rather than on the earn-
ings of the average female worker.\textsuperscript{138} In support of using gender-neu-
tral data, plaintiff cited "existing Federal and State legislation and the
present trend towards equality in employment."\textsuperscript{139} The court dis-
agreed, stating:

\begin{quote}
I am constrained to agree with the defense that the present value of
prospective earnings, female wages, before taxes must be used. How-
ever sympathetic this Court may be to equality in employment, it
must look to the reality of the situation and not be controlled by
its own convictions. One does not need expert testimony to con-
clude that there is inequality in the average earnings of the sexes.
There is no criterion to help us predict when this unwarranted con-
dition will be remedied and as a consequence I feel compelled to
adopt the defendant's position . . . .\textsuperscript{140}
\end{quote}

On appeal, the defendant contested the award, claiming the
amount was speculative because there was no showing Caron would
have ever worked.\textsuperscript{141} The court refused to set aside the award for
future earning capacity, stating that Caron could not be blamed for
being unable to prove the exact amount for future earning capacity.\textsuperscript{142}
The court intimated that Caron's award had been unfairly low because
she was a female, citing a case in which an eight-year-old boy had
been awarded an amount almost triple what Caron received for lost
future earning capacity.\textsuperscript{143} The court went on to say, without elabora-
tion, "we see no reason to distinguish between the sexes as the Gov-
ernment indicates."\textsuperscript{144}

\begin{footnotes}
\item[138] See id.
\item[139] See id.
\item[140] Id. In addition to cases endorsing gender-based tables for calculating lost earning ca-
pacity, there are numerous wrongful death cases in which the sex of the child is regarded as a
legitimate factor in determining the amount of the pecuniary loss suffered by the surviving par-
ents. The typical jury instruction requires the jurors to consider "the age, sex and physical and
mental characteristics of the child, supplemented, when available, with evidence as to the posi-
tion in life and earning capacity of the parents, as well as evidence as to the rendition, if any, of
household services by the minor." Chamallas, supra note 4, at 95; see also Immel v. Richards, 93
standard formulation suggests "the sex of the child is relevant because of the assumption that sex
is a good predictor of earning capacity." Chamallas, supra note 4, at 95.
\item[141] See Caron, 548 F.2d at 371.
\item[142] See id.
\item[143] See id. (citing Pierce v. New York Cent. R.R. Co., 409 F.2d 1392 (6th Cir. 1969)).
\item[144] Id.
\end{footnotes}
D. A Case Refusing to Rely on Gender Specific Data in Determining Damages

Although the courts traditionally have not been receptive to the use of gender-neutral data,145 one case is notable for refusing to rely on sex-specific data in determining the lost future earning capacity of the female plaintiffs: Reilly v. United States.146

In Reilly, the plaintiff, Heather Reilly, was a "helpless individual"147 who was "significantly delayed developmentally,"148 and unable to see, walk, talk, or take care of herself in any way.149 Heather's brain damage was the result of severe fetal distress during labor and delivery which was not properly diagnosed or attended to by medical personnel.150 In assessing the propriety of the economists' determinations of lost future earnings, the court noted that all three economists who testified shared certain assumptions: Heather would complete four years of college, she would enter the labor force in the year 2007 at age twenty-two, and her work capacity would extend to the age of seventy.151 However, the defendant's economist further assumed that Heather would not work forty percent of that time.152 This assumption was based on the Bureau of Labor Statistics' work life tables, showing that a woman with fifteen or more years of education would be active in the labor force for twenty-eight years.153 The court, however, rejected the economist's reduction, which was based solely on a survey of women's work histories from 1978 until 1980.154 The court exhibited serious doubt as to the probative value of such statistics with respect to twenty-first century women's labor force patterns, "particularly in light of current, ongoing changes in women's labor force participation rates."155

145. See supra notes 134-40 and accompanying text.
146. Reilly v. United States, 665 F. Supp. 976 (D.R.I. 1987). Interestingly, the opinion in Reilly was written by the same judge who wrote the Caron opinion.
147. Id. at 979.
148. Id.
149. See id.
150. See id. at 979-980.
151. See id. at 995.
152. See id. at 995, 997.
153. See id.
154. See id.
155. Id. See also Wheeler Tarpeh-Doe v. United States, 771 F. Supp. 427 (D.D.C. 1991), rev'd on other grounds, 28 F.3d 120 (D.C. Cir. 1994), a case involving the categorization of a biracial child's earning potential. In Wheeler Tarpeh-Doe, the court stated that "it would be inappropriate to incorporate current discrimination resulting in wage differences between the sexes or races or the potential for any future such discrimination into a calculation for damages resulting from lost wages." Id. at 435. However, in that case, the result of eliminating any nondiscriminatory factors actually lowered the plaintiff's award beyond what even the defendant's expert
II. The Current Method of Introducing Evidence of Lost Earning Capacity and Its Application to the Federal Rules of Evidence

Where appropriate, an attorney representing an injured plaintiff should present testimony of a qualified economist-statistician to assist the trier of fact in arriving at an award which will reflect, as much as possible, the plaintiff's true amount of lost future earning potential as a result of the injury.\textsuperscript{156} Regardless of the type of injury, where the plaintiff has sustained substantial future economic loss, the use of an economist-statistician becomes almost essential.\textsuperscript{157} The economist provides the jury with a detailed opinion of the future earnings, which the plaintiff would have had the capacity to earn if he or she had not been injured or killed.\textsuperscript{158} In assessing the propriety of admitting expert testimony, it is necessary for the court to determine that the evidence is relevant and that the expert is qualified to testify on the subject matter at issue.

A. Relevance

The law of evidence presupposes that, in judging the claims of litigants, it is important to discern the facts underlying the dispute.\textsuperscript{159} In pursuing this objective, the law assumes that the way to determine the truth is to allow the parties to present all evidence that bears on the issue to be decided by the trier of fact.\textsuperscript{160} Unless there is some distinct ground for refusing to hear such evidence, it should be admitted.\textsuperscript{161} Conversely, evidence that lacks probative value\textsuperscript{162} should be had estimated. \textit{See id.} at 456. The average wages for all persons was lower than the average wage for black men because of the incorporation of women's average earnings. \textit{See id.} The court noted this fact but held that "estimating [the child's] future earnings based on the average earnings of all persons appears to be the most accurate means available of eliminating any discriminatory factors." \textit{Id.} 156. \textit{See} O'Connor & Miller, \textit{supra} note 15, at 354. 157. \textit{See id.} 158. \textit{See id.} at 355. 159. \textit{See} Edward W. Cleary, \textit{McCormick on Evidence} § 184, at 540 (3d ed. 1984). 160. \textit{See id.} 161. \textit{See id.} 162. Probative value is a relative concept. Determining the probative value of an item of evidence involves measuring the degree to which the evidence assists the trier of fact in determining whether the particular fact exists and determining the distance from the particular fact to an ultimate issue in the case. \textit{See} Andrew K. Dolan, \textit{Rule 403: The Prejudice Rule in Evidence}, 49 S. Cal. L. Rev. 220, 233 (1976).
Federal Rule of Evidence 402 adopts the axioms of fairness and accuracy.\textsuperscript{164}

1. Rule 402

Rule 402 of the \textit{Federal Rules of Evidence} provides that "[a]ll relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible."\textsuperscript{165}

The main clause of Rule 402 indicates that logically relevant evidence is presumptively admissible. Expert testimony on lost future earning capacity is relevant in that it tends to prove or disprove an issue in the case, i.e., how much the plaintiff would be capable of earning in the future.

An expert's estimate of impaired or lost economic value, particularly in cases involving children or housewives with no demonstrated earning capacity, is often met by the objection that such calculations are too speculative or conjectural to be admissible as relevant evidence.\textsuperscript{166} It is also argued that admitting these calculations into evidence usurps the province of the trier of fact because the jury members are capable of doing the computation themselves.\textsuperscript{167} Typically, this argument is countered by noting that, as with any expert opinion, the calculation of economic loss is meaningful, not necessarily as fact, but as a credible opinion which aids the trier of fact in determining an appropriate compensatory award.\textsuperscript{168}

The question


\textsuperscript{164} FED. R. EVID. 402.

\textsuperscript{165} Id.


\textsuperscript{167} See O'Connor & Miller, supra note 15, at 357. The foundation of Rule 702 is that the testimony must be helpful to the jury. As defined by the Advisory Committee, the helpfulness inquiry is "whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute." FED. R. EVID. 702 advisory committee's note (quoting Mason Ladd, Expert Testimony, 5 VAND. L. REV. 414, 418 (1952)).

\textsuperscript{168} See O'Connor & Miller, supra note 15, at 357. Several courts have noted that merely because a damage theory is, relative to other proof, somewhat uncertain, it is not therefore inadmissible. See, for example, Story Parchment Co. v. Paterson Parchment Paper Co., 282 U.S.
should be "one of weight, not admissibility." To overcome an attack on admissibility, the calculation of impaired or lost economic value must involve methods beyond the competency of laymen and must be within the special province of the expert.

One persuasive decision on the point was rendered by the Supreme Court of Montana. The court noted that an economist's testimony is no more speculative than any other evidence that is used to prove future events. The court explained that the element of conjecture is significantly reduced by the admission of the economist's testimony as to possible future earnings because the economist has studied economic trends and is better qualified to predict future economic trends than jurors. Moreover, according to the court, this kind of expert testimony is not only the best evidence, but the only available evidence to prove future earnings.

Because statistics are necessary for determining future earning capacity when the plaintiff has no earnings record, it is likely the courts will find that testimony by an economist as to the plaintiff's future earnings is relevant.

2. Rule 403

Rule 403 of the Federal Rules of Evidence states that "[a]lthough relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." Rule 403 gives the court the discretion to exclude otherwise admissi-
ble evidence when the probative value\textsuperscript{177} of that evidence is "substantially outweighed" by, among other things, "unfair prejudice."\textsuperscript{178} Thus, Rule 403 authorizes the trial judge to balance the probative value of an item of evidence against its attendant probative dangers, and to exclude relevant evidence when the dangers substantially outweigh the probative value.

Although the judge can exclude statistical data on the ground that it is prejudicial, statistical data may be the only evidence available. Furthermore, many litigants do not argue that the dangers inherent in the use of actuarial tables substantially outweigh their probativeness, despite the fact that gender-specific data is outmoded and often irrelevant and prejudicial to the plaintiff in the instant case.\textsuperscript{179} As a result, sex-specific statistical evidence is usually admitted into evidence.

\textbf{B. Expert Testimony}

In order for expert testimony regarding lost future earning capacity to be allowed at trial, the testimony of the expert must assist the trier of fact and the expert must be qualified to testify. Paul M. Deutsch and Frederick A. Raffa have set forth a detailed procedure for economists to use in calculating lost earning capacity in cases in which the plaintiff has no established earnings record.\textsuperscript{180} The authors describe two methods for calculating the base annual earnings level of the plaintiff. The first method involves an individualized determination of the plaintiff's future educational attainment. The second method relies on statistical averages of educational attainment levels.

The first method requires the economist to predict the level of educational attainment the plaintiff would have achieved.\textsuperscript{181} This prediction sometimes can be accomplished by subjecting the plaintiff to aptitude testing and by taking into consideration the socio-economic status of the family, including the educational level of siblings and parents, as well as the family's ability to finance a higher education.\textsuperscript{182}

\begin{itemize}
  \item \textsuperscript{177} See supra note 162.
  \item \textsuperscript{178} Fed. R. Evid. 403.
  \item \textsuperscript{179} Martha Chamallas notes that her research reveals that it is often the attorney for the female plaintiff who introduces gender-specific data. Chamallas, supra note 4, at 76; cf. Drayton v. Jiffee Chem. Corp., 591 F.2d 352, 362 (6th Cir. 1978) (where the economist for a seven-year-old black female argued the child was entitled to have her projected loss of income measured by the income standards of male college graduates). It is therefore unlikely that the parties will bring to the judge's attention the problems with gender-specific data tables.
  \item \textsuperscript{180} Deutsch & Raffa, supra note 13, § 110.11[2], at 110-8.
  \item \textsuperscript{181} See id.
  \item \textsuperscript{182} See id.
\end{itemize}
The economist must then consult gender-specific government data listing the average earnings of high school or college graduates.\textsuperscript{183} The second method the authors recommend relies even more heavily on explicit gender classifications. Rather than using individualized factors to determine probable educational attainment, the authors state that economists may choose to consult data from the United States Commerce Department that gives the average educational levels according to the sex of the plaintiff.\textsuperscript{184} Just as in the first method, once the probable educational attainment is predicted, reference would be made to gender-based tables to calculate probable earnings.\textsuperscript{185}

Courts have uncritically accepted such methods of damage calculation.\textsuperscript{186} The use of statistical tables by economists in predicting future trends is wide-spread. In the damage calculation context, actuarial tables may be the only evidence available for determining lost future earning capacity.\textsuperscript{187} This being the case, judges almost always allow such data. In addition, the liberality of the \textit{Federal Rules of Evidence} does not provide for a stringent examination of the use of such tables.\textsuperscript{188} As such, courts often find that expert testimony on future earning capacity satisfies the requirements of Rules 702 and 703.\textsuperscript{189}

1. Rule 702

Rule 702 of the \textit{Federal Rules of Evidence} provides that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or other-
Thus, the admissibility of expert testimony requires that two preliminary determinations be made by the court.191

First, the court must decide whether expert testimony could assist the trier of fact in understanding the evidence or determining the fact at issue.192 The court may be required, as an aspect of this inquiry, to determine whether a sufficiently reliable body of scientific, technical, or other specialized knowledge has been developed.193 Calculating future earnings requires factoring in the effect of inflation, income taxes, and economic growth; thus, such computations are often complex.194 Hence, courts routinely find that expert testimony on future earnings assists the trier of fact.

Second, the court must make a preliminary determination under Rule 104(a) that the witness called is properly qualified as an expert.195 Pursuant to Rule 702, the witness may be qualified as an expert on the basis of either knowledge, skill, experience, training, education, or a combination thereof.196 Without such specialized

191. See Coleman v. Parkline Corp., 844 F.2d 863, 865 (D.C. Cir. 1988) ("This court has recognized that Rule 702 prescribes a two-part test. First, the witness must be qualified; i.e., he must have 'knowledge, skill, experience, training, or education' in the field. Second, the witness's testimony must be able to assist the trier of fact."); Beins v. United States, 695 F.2d 591, 609 (D.C. Cir. 1982) (Rule 702 "lays down a two part test for the admissibility of expert testimony: the witness must be qualified and he must be capable of assisting the trier of fact."); Larsen, 87 F.R.D. at 607 (Rule 702 is "a codification of existing federal law and embodies two requirements for expert testimony. The first is that the testimony must assist the trier of fact to understand the evidence. The second is that the witness must be qualified as an expert.").
193. See Sterling v. Velsicol Chem. Corp., 855 F.2d 1188, 1208 (6th Cir. 1988) (The court required, for the admission of expert testimony, that the subject be one which conforms to a "generally accepted explanatory theory." With respect the this criterion, "the principles upon which the scientific evidence is based must be sufficiently established to have gained wide acceptance in the field to which it belongs.").
196. Rule 702 provides that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Fed. R. Evid. 702; see also Will v. Richardson-Merrill, Inc., 647 F. Supp. 544, 548 (S.D. Ga. 1986) (stating that the crucial factors with respect to admissibility of expert testimony are the actual experience of the witness and probative value of his opinion). Because the focus is on the witness' actual qualifications, rather than his or her title, anyone with specialized knowledge may qualify as an expert in that particular area.
knowledge, the testimony would not assist the jury.\textsuperscript{197} Similarly, if no specialized knowledge is needed, the jury will not be aided by the expert testimony which merely involves the same analytical process of which the jurors are capable.\textsuperscript{198} Clearly, economists have specialized knowledge and experience; therefore they satisfy the second part of Rule 702.

2. Rule 703

Rule 703 of the \textit{Federal Rules of Evidence} states:

\begin{quote}
The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inference upon the subject, the facts or data need not be admissible in evidence.\textsuperscript{199}
\end{quote}

Expert testimony is not limited to scientific or technical areas, but includes all areas of specialized knowledge.\textsuperscript{200} The opinion of an expert must be supported by an adequate foundation of relevant facts, data, or opinions.\textsuperscript{201} Absent such a foundation, the judge must disallow the expert’s opinion as speculation or conjecture.\textsuperscript{202} The modern view allows experts to rely on data provided by third parties because experts commonly rely on this type of information in forming an opinion.\textsuperscript{203} In contrast to the common law standard, under which the expert’s opinion was inadmissible if it went beyond the evidence in the case,\textsuperscript{204} Rule 703 allows the opinion to go beyond the evidence admitted at trial as long as the facts or data are of a type reasonably relied upon by experts in the particular field in forming opinions or inferences.\textsuperscript{205}


\textsuperscript{198} See id.

\textsuperscript{199} FED. R. EVID. 703.


\textsuperscript{201} See id. at 29.

\textsuperscript{202} See id.


\textsuperscript{204} See id.

\textsuperscript{205} See FED. R. EVID. 703; see also Mannino v. International Mfg. Co., 650 F.2d 846, 851 (6th Cir. 1981) (stating that an expert can base an opinion on types of data normally relied upon to form similar opinions even if the information is otherwise inadmissible); Baumholser v. Amax Coal Co., 630 F.2d 550, 553 (7th Cir. 1980) (explaining that evidence need not be independently admissible as long as the evidence is of a type reasonably relied upon by other experts in the field); American Bearing Co. v. Litton Indus., 540 F. Supp. 1163 (E.D. Pa. 1982) (stating that expert testimony should be excluded if misleading and speculative and not of a type reasonably relied upon in the particular field), aff’d, 729 F.2d 943 (3d Cir. 1982).
However, the expert must establish that he or she is not using the particular information only for purposes of testifying in a lawsuit.\textsuperscript{206}

Courts differ in their treatment of Rule 703's reasonable reliance requirement.\textsuperscript{207} Some favor the admissibility of expert testimony,\textsuperscript{208} while others take a more restrictive view.\textsuperscript{209} The difference between the liberal and restrictive approaches to Rule 703 is one of emphasis.\textsuperscript{210} Both groups agree that the trial judge must determine whether the data upon which the expert relied is a type upon which others in his field of expertise reasonably rely.\textsuperscript{211} The liberal view advocates admitting the expert testimony if the facts upon which the expert relies are of a type reasonably relied upon by experts in the particular field, thereby allowing jurors to decide whether to accept or reject the basis of the expert's opinion.\textsuperscript{212} The court does not separately determine the trustworthiness of the particular data involved.\textsuperscript{213}

\textsuperscript{206} See J. Weinstein & M. Berger, Weinstein's Evidence § 703[03], at 703-17 (1987) [hereinafter J. Weinstein].

\textsuperscript{207} See Miller, supra note 203, at 1079.

\textsuperscript{208} Illustrative of the liberal camp are Peteet v. Dow Chem. Co., 868 F.2d 1428, 1432 (5th Cir. 1989) ("In making this determination, the trial court should defer to the expert's opinion of what data they find reasonably reliable.") and In re Japanese Elec. Prod., 723 F.2d 238, 277 (3d Cir. 1983) ("In substituting its own opinion as to what constitutes reasonable reliance for that of the experts in the relevant fields the trial court misinterpreted Rule 703.")., rev'd on other grounds, 475 U.S. 574, on remand, 807 F.2d 44 (3d Cir. 1986). For a discussion of the liberal and restrictive approaches, see In re "Agent Orange", 611 F. Supp. 1223, 1243-45 (E.D.N.Y. 1985), aff'd, 818 F.2d 187 (2d Cir. 1987).

\textsuperscript{209} See Graham, supra note 200, § 703.1, at 105 n.14. Those courts that endorse a restrictive approach do so not only in criminal cases, but in civil cases as well. See id. (citing J. Weinstein § 703[03], at 703-717).

Illustrative of the restrictive camp are Viterbo v. Dow Chemical Co., 826 F.2d 420, 422 (5th Cir. 1987) (stating that "[t]hough courts have afforded experts a wide latitude in picking and choosing the sources on which to base opinions, Rule 703 nonetheless requires courts to examine the reliability of those sources." (quoting Soden v. Freightliner Corp., 714 F.2d 498, 505 (5th Cir. 1983)); Shatkin v. McDonnell Douglas Corp., 727 F.2d 202, 208 (2d Cir. 1984) (stating that the district court, in ruling on the admissibility of the proposed testimony, possessed not only the power under Fed.R.Evid. 403 to determine whether it had a propensity for misleading or confusing the jury, ...., but also the discretionary right under Fed.R.Evid. 703 to determine whether the expert acted reasonably in making assumptions of fact upon which he would base his testimony." (citations omitted)). See also Head v. Lithonia Corp., Inc., 881 F.2d 941, 944 (10th Cir. 1989) where the court held that

implicit in [Rule 703], however, is the court's guidance to make a preliminary determination pursuant to Rule 104(a) whether the particular underlying data is of a kind that is reasonably relied upon by experts in the particular field in reaching conclusions. This determination must be made on a case-by-case basis and should focus on the reliability of the opinion and its foundation rather than merely on the fact that it was based, technically speaking, upon hearsay. Thus, the district court may not abdicate its independent responsibilities to decide if the bases meet minimum standards of reliability as a condition of admissibility.

\textsuperscript{210} See Graham, supra note 200, § 703.1, at 105 n.14.

\textsuperscript{211} See id.

\textsuperscript{212} See Miller, supra note 203, at 1079.

\textsuperscript{213} See In re "Agent Orange", 611 F. Supp. at 1243.
In contrast, the restrictive view imposes an additional requirement on the reasonable reliance standard: "[t]he trial judge must reassess the facts, data, or opinions that form the basis of the expert’s opinion to determine if they are sufficiently trustworthy for experts to reasonably rely upon."214 If the court determines that the expert could not reasonably have relied on the material, even though he may rely on it in his working life, it is not admissible.215

Most courts have adopted the liberal approach.216 Thus the courts rarely question the use of gender-specific data by experts because use of such data is firmly entrenched in economic calculations.217

III. AN ALTERNATIVE APPROACH: ACHIEVING GENDER-NEUTRALITY WHILE REMAINING CONSISTENT WITH THE FEDERAL RULES OF EVIDENCE

As noted earlier, the fundamental goals of the Federal Rules are accuracy and fairness.218 It is both more fair and more accurate to use gender-neutral data. The statistical data upon which the gender-based tables are based is inaccurate in that it does not reflect the "rapid, sustained increases in women’s labor-force participation."219 Further-

214. GRAHAM, supra note 200, § 703.1, at 105 n.14; Miller, supra note 203, at 1080. In Zenith Radio Corp. v. Matsushita Electric Industrial Co., the court set forth the following list of factors to be used in determining the reasonableness of an expert’s reliance on inadmissible information under Rule 703, which ultimately was rejected by the court of appeals:

(1) The extent to which the opinion is pervaded or dominated by reliance on materials judicially determined to be inadmissible, on grounds of either relevance or trustworthiness;
(2) The extent to which the opinion is dominated or pervaded by reliance upon other untrustworthy materials;
(3) The extent to which the expert’s assumptions have been shown to be unsupported, speculative, or demonstrably incorrect;
(4) The extent to which the materials on which the expert relied are within his immediate sphere of expertise, are of a kind customarily relied upon by experts in his field in forming opinions or inferences on that subject, and are not used only for litigation purposes;
(5) The extent to which the expert acknowledges the questionable reliability of the underlying information, thus indicating that he has taken that factor into consideration in forming his opinion;
(6) The extent to which reliance on certain material, even if otherwise reasonable, may be unreasonable in the peculiar circumstances of the case.


216. See Miller, supra note 203, at 1080.

217. See Chamallas, supra note 4, at 76-77.


more, the tables reflect past societal discrimination against women in the workforce. Gender-neutral tables better reflect women's increasing participation rates and pay increases. Moreover, the use of gender-neutral tables comports with the objectives of the Federal Rules of Evidence. Gender-neutral statistical data is more relevant to a determination of lost earning capacity than sex-specific data and can be more reasonably relied upon by experts.

A. Relevance

In analyzing whether particular evidence should be admitted, the judge must determine whether its relevance is substantially outweighed by its prejudice. This analysis consists of three steps: (1) determining the probative value of the item of evidence; (2) identifying the countervailing probative dangers (i.e., prejudice); and (3) striking the balance between the probative values and prejudicial dangers.

1. Determining the Probative Value of the Item of Evidence

The concept of probative value allows the trial judge to consider three elements when balancing under Rule 403. These elements are: (1) the facial validity of the proposed testimony; (2) the number of intermediate propositions between the item of evidence and the ultimate fact to be proved; and (3) the strength of the inference from the evidence.

First, a judge may consider the facial validity of the proposed testimony. When the testimony is weak on its face, a judge is permitted to consider that weakness. Using gender-specific tables in determining lost earning capacity for women aggravates the uncertainty and imprecision in any estimation of lost future earnings. By using the historical data contained in the female tables, one assumes that future trends will be identical or similar to past trends—an assumption that is almost certainly erroneous based on the success of the women's movement. Statistical tables "predict" the future only to the extent that the future resembles the past; a predictor is efficient

220. See Fed. R. Evid. 403.
222. See id.
223. See id.
224. See id.
225. See Brilmayer et al., supra note 68, at 247. The authors state that, by definition, a life table is simply a mathematical model of the current experiences of a population. Using a unisex
only if past correlations persist throughout the period in which the predicted event will occur.\textsuperscript{226} As evidence indicates, women's participation rates and wage rates have been steadily increasing.\textsuperscript{227} As such, expert testimony based on gender-specific tables is often imprecise.

Second, a judge may consider the number of intermediate propositions between the item of evidence and the ultimate fact that the item is offered to prove.\textsuperscript{228} The larger the number of intermediate inferences the jury must draw, the greater the probability that the jury will commit some inferential error.\textsuperscript{229} Inferential error occurs when the jury decides that evidence is more probative of a fact or event than it actually is.\textsuperscript{230} Jurors, when presented with statistics given by an expert witness, might assume that this data is, in fact, more probative of the plaintiff's future earning capacity than it actually is.\textsuperscript{231} Thus, it is essential for the judge to determine the relevancy of the expert's methods of calculation, as they apply to the plaintiff. Where it is ap-

\begin{table}[h]
  \centering
  \begin{tabular}{|c|c|}
    \hline
    Age Group & Median Earnings of Women as a Percentage of Men's Median Earnings \\
    \hline
    16-20 & 79.0% \\
    25-34 & 79.0% \\
    35-44 & 75.0% \\
    45-54 & 72.0% \\
    55-65 & 68.0% \\
    \hline
  \end{tabular}
  \caption{Median Earnings of Women as a Percentage of Men's Median Earnings by Age Group}
  \end{table}

Table mirrors the experience of a combined male and female population with no loss of predictability. The authors note that when mortality rates change, a life table will be a poor predictor no matter how the data were classified. Although predicting changes in the mortality of a population is difficult, predicting changes in mortality on the basis of sex is even more difficult. See id.\textsuperscript{226} See id. at 235-36.

\textsuperscript{227} The participation rates of women over age 20 rose from 33.3\% in 1950 to 37.6\% in 1960 and then from 43.3\% in 1970 to 51.3\% in 1980. This participation rate continued to steadily increase through the 1980s. In 1988 the participation rate was 56.8\%, in 1989 it was 57.7\%, in 1990 it was 57.9\%, and in 1991 the participation rate was 57.8\%. See Brookshire et al., supra note 92, § 7.2, at 42; see also Working Women Chartbook, supra note 8, at 21-22. Increases in the women's to men's earnings ratio have occurred across all age groups but have been the greatest for younger women. For example, in 1979, the ratio among 16- to 20-year-old women was 79\%; by 1990, it had risen to 90\%. For 25- to 34-year-old women, median earnings rose from 67\% of men's to 79\%. See id.

\textsuperscript{228} See Imwinkelried, supra note 221, at 885.

\textsuperscript{229} See id.

\textsuperscript{230} See Gold, Rule 403, supra note 218, at 506.

\textsuperscript{231} See People v. Collins, 438 P.2d 33, 33 (Cal. 1968) (stating that mathematics is "a veritable sorcerer in our computerized society" and can "cast a spell" over the trier of fact); see also Victor J. Gold, Limiting Judicial Discretion to Exclude Prejudicial Evidence, 18 U.C. Davis L. Rev. 59, 69 (1984) [hereinafter Gold, Judicial Discretion].

Decision makers are influenced by expert testimony. For example, "[Specific findings from a mock jury study] are consistent with [other] findings and provide evidence that jurors can be strongly influenced by specified requests for damages." Allan Raitz et al., Determining Damages: The Influence of Expert Testimony on Jurors' Decision Making, 14 Law & Hum. Behav. 385, 386-95 (1990). Interestingly, the authors of the study found that "the most frequently occurring award for damages was the precise amount suggested by the plaintiff's expert, and the next most frequent award was the amount cited by the defense." Id.; cf. Terry Lloyd, Effectively Communicating Numbers in Dispute Settings, in Corporate Law (PLI Litig. & Admin. Practice Course Handbook Series No. 901, 1995) ("Unfortunately, jurors will sometimes feel overwhelmed [by numbers] and base decisions on emotions such as "gut feelings" or intuition and not evidence or law, looking to the arguments provided during trial-to substantiate their early-formed opinions.").
parent that a jury may give too much weight to the expert's calculation, the judge should exclude the evidence.232

A judge may consider the length of the chain of inference in deciding whether to admit the evidence.233 The use of gender-neutral averages results in less inferential steps than are necessary when using gender-specific averages. When using tables, one is necessarily concluding that each of the factors used to create those statistics (female wage rate, furlough to rear children, marriage contingency, lower participation rates, etc.) is true of the plaintiff in that case. The use of gender-specific data necessitates inferring that the plaintiff would have only earned the national average wage earnings of women in past years. Moreover, the use of gender-specific tables is based on the assumption that a female does not have the capacity to earn a rate of pay equal to that of a male. A statistical average for college graduates, for example, as a group, and not divided by sex, would impose only one inferential step: that the plaintiff would have fallen somewhere around the average for that educational group and would have been active in the work force for about the same number of years as the average college graduate. Thus, it is more fair to individual female plaintiffs to use data based on statistical averages for an entire educational group, not differentiated by sex.234

Finally, a judge may consider the correlation between the reasonable inference drawn from the evidence and the fact the evidence is intended to prove.235 Inferring that the data in the tables is applicable to the plaintiff, both presently and in the future, is improper. A mere hundred years ago, women were barred from most schools of higher education, and less than twenty years ago most married women did not work outside the home.236 Today, the gap between labor force participation rates for adult men and women has narrowed237 and

233. See Imwinkelried, supra note 221, at 885.
234. See Brilmayer et al., supra note 68, at 234 (Brilmayer argues that because sex is immutable, irrelevant to distinguishing between otherwise identical individuals, and historically abused as a classifier, any use of sex to predict employment-related traits should be forbidden. Whenever race or sex is used as a predictor, some individuals are disadvantaged because of a stereotype that is true of others, but not of themselves); see also Marshall & Paulin, supra note 70, at 44 (stating that education has a "strong positive effect" on the income of both males and females).
235. See Imwinkelried, supra note 221, at 885.
236. See generally Working Women Chartbook, supra note 8.
237. See Peter J. Sepielli & Thomas J. Palumbo, U.S. Dep't of Commerce, Current Population Reports, P23-189, Labor Force and Occupation 38 (1995) (hereinafter Labor Force]; Working Women Chartbook, supra note 8, at 3-4. During the 1980s, the number of women in the labor force increased about 1.2 million a year, on average, as the post-World War II baby-boom generation completed its entry into the labor force. See id. at 3. In 1950, approxi-
there is no statistical difference in the proportions of men and women twenty-five- to twenty-nine-years-old with four or more years of college. Because the tables which are used for damage calculation are outdated, the assumption that a female litigant's future earning potential is the same as the income indicated in the gender-specific tables, is weak. Thus, gender-based tables may misinform the jury as to the true earning capacity of the female plaintiff.

2. Identifying the Countervailing Probative Dangers

A judge, in determining the admissibility of expert testimony on damages, may also consider the prejudiciality of the testimony or evidence offered, and its resultant impact on the jury. The advisory committee's note to Rule 403 defines unfair prejudice as "an undue tendency to suggest decision on an improper basis." The Rule gives the judge control of what information reaches the factfinder, usually the jury, so that the probability of an objectively correct factual determination is maximized. The Rule recognizes that judges must account for the inevitable biases of jurors against classes of people, in addition to considering the bias inherent in the proffered evidence. Not only does Rule 403 guard against misdecision by the trier of fact, it also promotes the institutional goal of fairness in the judicial process.

238. Differences in educational attainment between the sexes have historically been attributed to differences in attainment at the college level. The college completion rates for men and women ages 25 to 29 were 20.0% for men and 12.9% for women in 1970. Since 1970, however, the college gains of young adult women have surpassed those of young adult men. By 1993, there was no significant statistical difference. The rate in 1993 for men was 23.4%; the rate for women was 23.9%. See id. at 18.

239. See Fed. R. Evid. 403.

240. Fed. R. Evid. 403 advisory committee's note. Unfair prejudice is the danger created by evidence having a tendency to promote inferential error. See Gold, Rule 403, supra note 218, at 503, 507. Accuracy is an aspect of fairness. See id. The law contains many rules which, in the name of fairness, exclude highly probative evidence and thus detract from the goal of accuracy. However, accuracy likely remains the most important indicator of fairness under Rule 403. See id. at 507-08.

241. See Dolan, supra note 162, at 226.

242. See id.

243. See id. at 228.
The typical jury represents majoritarian interests. In applying Rule 403, the judge can consider the inevitable biases of lay jurors. In considering the bias of the jurors, the court must take into account that jurors may tend to appraise a woman’s future earning value as less than a man’s future earning value. This is true of both men and women on the jury. Thus, it is likely that a jury will award less to a woman for the same injuries as a man working in the same occupation. Taking this into account, it is more equitable to use gender-neutral data for two reasons: (1) gender-based tables reflect data which is skewed because of past discrimination against women in the workplace; and (2) juror biases and stereotypes might impact the amount awarded. The result is prejudice against the plaintiff on multiple levels.

If other evidence, which does not have the same prejudicial dangers as the offered evidence, could be used to establish the same fact, then the marginal probative value of the proffered evidence is slight or non-existent. Therefore, if it is available, gender-neutral data can better predict lost future earning capacity and is less prejudicial.

244. See Imwinkelried, supra note 221, at 896. A study produced by the Chicago-based Defense Research Institute found that 53% of the people with household incomes above $40,000 have been called for jury duty, compared with 45% of those with lesser means. See Lloyd, supra note 231, at 193 n.9. This is supported by a study of 8,468 jurors surveyed by the National Center for State Courts. The study found that jurors with full-time jobs which paid more than $25,000 a year and with at least one year of college comprised about 50% of the jurors nationwide. See id.

245. See Imwinkelried, supra note 221, at 896.

246. Damages awarded to women are consistently lower than those awarded to men in the same age bracket. See Lisa M. Ruda, Note, Caps on Noneconomic Damages and the Female Plaintiff: Heeding the Warning Signs, 44 CASE W. RES. L. REV. 197, 231 (1993). The disparity is greatest when the plaintiffs are between the ages of 50 and 59. See id. In this age bracket, the average damage award for a man is $423,338, while the average for a woman is $58,074. See id.; see also supra notes 26-46 and accompanying text.

Lately, more research has focused on gender and other biases that jurors may bring to the courtroom. However, a University of Chicago jury study from the late 1950s found that in a wrongful death case for a male decedent, the damages awarded the attractive widow were reduced because the jury thought her chances of remarriage were high. In post-verdict interviews, jurors actually commented that if she failed to remarry, the fault would be hers and not theirs. See Harry Kalven, Jr., The Jury, the Law and the Personal Injury Damage Award, 19 OHIO ST. L. J. 158, 169 (1958).

247. See Goodman, supra note 42, at 272.

248. See id.

249. In one wrongful death case, jurors reported that because the surviving widow was attractive, she would be likely to remarry soon. See id. at 265. The damage award was therefore discounted on the ground that her future husband would take care of her. See id.

250. See Cleary, supra note 159, § 185, at 546 n.35.
3. Striking the Balance Between Probative Value and Probative Dangers

Case law indicates that Rule 403 allows a judge to consider the effect of the admission of evidence on extrinsic social policies, in assessing whether to admit or exclude certain evidence.\(^{251}\) Decisions also suggest that Rule 403 can be used to implement substantive social policies.\(^{252}\) The proponents of this broad reading of the Rule argue that the stated purpose for the exclusion of evidence on these grounds is the pursuit of socially desirable objectives unrelated to the goal of accurate dispute resolution.\(^{253}\) Case law construing Rule 403 strengthens the argument that the term "prejudice" in the Rule empowers the judge to consider injury or prejudice to extrinsic social policies.\(^{254}\) The use of gender-specific data tables for determining lost earning capacity effectively contravenes social policy.

If assessments of a female plaintiff's future earnings are based upon static assumptions drawn from past employment patterns which are rapidly changing, damage awards may be unfair not only to the individual female plaintiff but also to younger women as a class.\(^{255}\) Social policy dictates that women receive the same compensation as

\(^{251}\) See Imwinkelried, supra note 221, at 890 (citing as an example United States Football League v. National Football League, 634 F. Supp. 1155, 1181 (S.D.N.Y. 1986) (holding that under Rule 403, a judge should consider whether the admission of the evidence will tend to chill the exercise of First Amendment rights)).


\(^{253}\) See Imwinkelried, supra note 221, at 891; Arthur H. Travers, Jr., An Essay on the Determination of Relevancy Under the Federal Rules of Evidence, 1977 Ariz. St. L.J. 327, 328-29. The most powerful support for this construction is a statement in the Advisory Committee's Note on Rule 403. See Imwinkelried, supra note 221, at 891. The first paragraph of that Note refers to "[t]he rules which follow this Article . . . ." Article IV includes Rules 407 through 410. Rule 407 bars evidence of subsequent remedial repairs. Rules 408 and 409 ordinarily preclude the admission of statements or payments made incident to compromise negotiations. Rule 410 similarly announces a general prohibition against the introduction of statements made during plea bargaining. As Professor Travers has pointed out, these rules rest primarily on considerations of extrinsic social policy. Travers, supra, at 329, 334, 356-60. This view suggests that the Committee's Note seems to permit a judge to factor extrinsic social policies as well as judicial administration concerns into Rule 403 balancing.

\(^{254}\) See, e.g., United States v. Smith, 750 F.2d 1215, 1220 (4th Cir. 1984) (holding that the judge could not consider the impact that admission of the evidence would have on national security interests), vacated, 780 F.2d 1102 (4th Cir. 1985); United States Football League, 634 F. Supp. at 1181 (holding that a judge should consider whether the admission of the evidence will tend to chill the exercise of First Amendment rights). Rule 501 also provides additional support to this argument. Rule 501 states that privilege law "shall be governed by the principles of common law as they may be interpreted by the courts of the United States in the light of reason and experience." Fed. R. Evid. 501. "The broad authorization to create evidentiary doctrines based on extrinsic social concerns under rule 501 makes it more plausible to construe rule 403 as permitting a judge to consider similar situations." Imwinkelried, supra note 221, at 891.

\(^{255}\) See King & Smith, supra note 26, at ix.
men if the same or similar work is done.\textsuperscript{256} This being the case, economists should not take into account past discrimination in wages when determining future earnings—earnings which are now subject to legislation prohibiting unequal pay between sexes.

When determining the admissibility of damage calculations based on gender-specific data, judges should exclude such calculations because they effectively contravene social policy by perpetuating inequality between the sexes on the basis of income. The judge can strike a balance by allowing statistical tables to be used; however, they should not be gender-specific, but rather gender-neutral. This data is still probative (perhaps even more so), but is not as prejudicial.

\textbf{B. Expert Testimony}

Rule 104(a) allows the trial court to make a preliminary determination as to the admissibility of expert testimony.\textsuperscript{257} However, it is generally the expert who determines whether the facts are reasonably relied upon by others in the field.\textsuperscript{258} If judges took a more active role in this determination, sex-specific data tables may not always be found to be reasonably relied upon.\textsuperscript{259}

\begin{flushleft}
\textsuperscript{256} See \textit{supra} note 17.
\textsuperscript{257} Rule 104(a) provides:

Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.

\textit{Fed. R. Evid. 104(a)}. However, the liberal nature of the Rules indicates that courts generally will resolve all doubts concerning the utility of an expert's testimony in favor of admissibility. See J. \textsc{Weinstein} \textsuperscript{\textsection} 702[02], at 702-14. \textit{But see} Eymard v. Pan Am. World Airways (In re Air Crash Disaster), 795 F.2d 1230, 1234 (5th Cir. 1986) (asserting that courts should refrain from exercising extreme liberality in admitting expert testimony). The rationale for the liberal approach is that the jury is capable of ignoring unhelpful evidence. See Singer Co. v. E.I. du Pont de Nemours & Co., 579 F.2d 433, 443 (8th Cir. 1978) (“It is now for the jury, with the assistance of vigorous cross examination, to measure the worth of the opinion.”); J. \textsc{Weinstein}, \textit{supra}, \textsection 702[02], at 702-14 to -15.

\textsuperscript{258} See sources cited \textit{supra} note 208; see also United States v. Sims, 514 F.2d 147 (9th Cir. 1975); cf. Punnett v. Carter, 621 F.2d 578 (3d Cir. 1980); United States v. Genser, 582 F.2d 292 (3d Cir. 1978).

\textsuperscript{259} See Zenith Radio Corp. v. Matsushita Elec. Indus. Co., 505 F. Supp. 1313, 1325 (E.D.Pa. 1980) (The court noted that the Advisory Committee "plainly contemplated that the trial court, as part of its admissibility judgment [under Rule 703], would inquire into an expert's reasonable reliance. Furthermore, because the court under F.R.E. 702 must assess a witness' qualifications in order to permit his testimony, it follows that when an expert deviates from his area of expertise by basing his opinion upon untrustworthy matters, that assessment must similarly be within the province of the court."). \textit{aff'd in part, rev'd in part, In re Japanese Elec. Prod. Antitrust Litig.}, 723 F.2d 238 (3d Cir. 1983).
1. Rule 703

Facts, data, or opinions which are otherwise admissible in evidence, but would be excluded under Rule 403, do not automatically become admissible if offered solely to form part of the basis of an expert witness' opinion under Rule 703. Rule 703 does not automatically permit an expert to base his opinion upon materials that are otherwise inadmissible by reason of another rule of evidence, unless these materials are of the type reasonably relied upon by others in the field. The term "reasonably," found in Rule 703, implies a judicial determination of trustworthiness. If only routine reliance was intended, the terms "customarily" or "regularly" could have been used. Thus, it is possible that gender-specific data, although regularly relied upon by experts in the field, may not be reasonably relied upon due to its inherent flaws, such as poor predictability of future earning trends. By employing an analysis of the probative dangers of the evidence, a trial judge may conclude that the gender-specific evidence is no longer "reasonably" relied upon.

Statistical data on the success of the women's movement show that the use of gender-specific data in the context of determining future earning capacity is no longer reasonable. Because of the narrowing gap between men and women with regard to participation...

260. See Graham, supra note 200, § 703.1, at 114; see also Rule 704(a), which provides in pertinent part: "[T]estimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided." Fed. R. Evid. 704(a). Rule 704 was intended to abolish the common law rule against testimony regarding ultimate issues of fact. Fed. R. Evid. 704 advisory committee's note.


262. See Graham, supra note 200, § 703.1, at 105 n.13; Gong v. Hirsch, M.D., 913 F.2d 1269, 1272-73 (7th Cir. 1990) (stating that "[i]n applying the requirement of Rule 703 that the information forming the basis of the expert's opinion be of a type reasonably relied upon by experts, ... the trustworthiness of the underlying data is not irrelevant." Barrel of Fun, Inc. v. State Farm Fire & Cas. Co., 739 F.2d 1028, 1033 (5th Cir.1984) (internal citations omitted)); Mannino v. Int'l Mfg. Co., 650 F.2d 846, 849 (6th Cir. 1981) (stating that "Rule 703 is concerned with the trustworthiness of the resulting opinion."); Toys "R" Us, Inc. v. Canarsie Kiddie Shop, Inc., 559 F. Supp. 1189, 1205 (E.D.N.Y. 1983) (excluding expert opinion based on surveys lacking "sufficient indicia of trustworthiness" under Rule 703); Zenith Radio Corp., 505 F. Supp. at 1324 ("We see the 'reasonable reliance' language built into Rule 703 as essentially a shorthand translation of the hearsay rules' trustworthiness element."); Barrel of Fun, Inc., 739 F.2d at 1033 (excluding expert testimony based on the results of a voice stress analyzer because there was insufficient foundation establishing its trustworthiness or its acceptance in the relevant scientific community).

263. See Graham, supra note 200, § 703.1, at 105 n.13.

264. See supra notes 227 and 237 and accompanying text.


266. See sources cited supra note 237.
rates and income, it is necessary for the trial judge to carefully examine expert testimony.267

A trial court may exclude expert opinion if the assumptions upon which damages are based are unfounded or refuted by the literature.268 The assumptions regarding women’s earnings have been refuted by the numerous empirical studies which show that the disparity between damage awards for men and women is traceable to past discrimination.269 The assumption, therefore, that women are going to continue to earn, in proportion to men, the same amount that they did as a group in the past is misplaced. Considering also the rising participation rates of women,270 it is clear that the assumptions upon which damages are based when relying on gender-specific data are becoming less sound. The probative value of gender-specific evidence would have to outweigh its prejudicial effect before an expert witness could base his opinion on it. Thus, considering that the prejudice of using gender-specific evidence on future earnings outweighs its probative value,271 the expert should not be allowed to rely upon sex-specific data in forming his opinion of the plaintiff’s lost earning capacity.

This does not mean, however, that the expert can no longer render an accurate opinion as to the plaintiff’s lost earnings. If particular facts, data, or opinions are excluded from consideration by the expert, the expert may still render his opinion when an adequate basis nevertheless remains.272 In the context of future earnings, the expert could still render an opinion by relying on gender-neutral data to form his opinion.

CONCLUSION

Actuarial tables do not address capacity; they are merely predictions of group income levels.273 Gender-based tables are no longer a reliable method of assessing women’s future earnings. Furthermore,


268. See Davis, supra note 1, at 279.

269. See supra notes 26-46 and accompanying text.

270. See sources cited supra note 78.

271. See supra notes 221-238 and accompanying text.

272. See Graham, supra note 200, § 703.1, at 645-46.

273. See Gibson, supra note 77, at 208.
these tables should not be used in order to enable women's earning capacity to be better reflected in tort judgments.

Given the chance, women are proving themselves capable of achieving or surpassing male accomplishments. Whether or not the current gender wage inequalities are addressed so that wages reflect accomplishment levels instead of gender, women's earning capacity should be viewed as equivalent to that of men.

The source of gender-based influences on personal injury awards may lie, at least in part, "outside the court system, in the very structure and functioning of society, as they are reflected in the minds of fact finders." Courts may therefore be limited in their capacity to altogether eliminate the influence of the unfair application of these factors. Nonetheless, to the extent that stereotypes or biases result in unfair treatment of individual female litigants in civil actions, the judicial system must attempt to prevent this inequity.

The most desirable nondiscriminatory option is to consider each person as equivalent to the average, unless evidence is produced which removes the plaintiff from the normal range. In doing so, courts and economist-statisticians can better accomplish the goals of the Federal Rules of Evidence: fairness and accuracy.

Courts have interpreted the Federal Rules of Evidence in such a manner as to allow experts to testify to virtually anything, provided the expert claims the facts upon which he or she relies are reasonably relied upon by others in the field. Because juries tend to place a lot of weight on such testimony, courts must abandon this extreme approach. The Fifth Circuit Court of Appeals, consistent with this view, has made its position clear:

[W]e adhere to the deferential standard for review of decisions regarding the admission of testimony by experts. Nevertheless, we . . . caution that the standard leaves appellate judges with a considerable task. We will turn to that task with a sharp eye, particularly in those instances, hopefully few, where the record makes it evident that the decision to receive expert testimony was simply tossed off

274. See id.
275. ILLINOIS REPORT, supra note 26, at 178.
276. See id.
277. The Supreme Court of Canada had endorsed this approach with regard to the assessment of contingencies: "A trial judge should consider whether there is any evidence which takes the deceased's situation outside the 'average'; whether there are any features of which no account was taken in the actuarial tables, either because the factor is entirely personal to the individual or, because the 'average is not adapted for the category or class to which the person belongs.'" Lewis v. Todd, 14 C.C.L.T. 294, 313 (1980), cited in Gibson, supra note 77, at 208.
278. See sources cited supra note 218.
279. See Miller, supra note 203, at 1083; see also sources cited supra note 208.
to the jury under a 'let it all in' philosophy. Our message to our able trial colleagues: it is time to take hold of expert testimony in federal trials.\textsuperscript{280}

It is no longer proper for economists to assess future earning capacity using gender-specific statistical data. It is time the courts took a more active role in assessing the propriety of expert testimony on this aspect of damages.

\textsuperscript{280} Eymard v. Pan Am. World Airways (In re Air Crash Disaster), 795 F.2d 1230, 1234 (5th Cir. 1986).
SYMPOSIUM ON
GLOBAL COMPETITION AND
PUBLIC POLICY IN AN ERA OF
TECHNOLOGICAL INTEGRATION

Frederick M. Abbott & David J. Gerber
Symposium Editors
The Library of International Relations at the Chicago-Kent College of Law sponsored its first major international symposium with Global Competition and Public Policy in an Era of Technological Integration. The participants of the symposium, including academic, government, and industry leaders, examined the underlying public policy issues that result from technology-related developments.

The following Symposium is based on those lectures originally given at the Chicago-Kent College of Law, Illinois Institute of Technology, on October 6 & 7, 1995.
INTRODUCTION