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How to Prove Reduction to Present Worth

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The scope of this article will extend beyond a simple “how” to prove reduction to present worth, and will include a consideration of the following topics: (1) the theory and purpose of reduction to present worth; (2) the application of such principle to personal injury and wrongful death cases, and some of the errors inherent therein; (3) the tactical considerations in presenting such proof at trial; and (4) the mechanics of proof, including demonstrative evidence.

THE THEORY AND PURPOSE OF REDUCTION TO PRESENT WORTH

The very simple theory behind reduction to present worth is that in our society it is well known, and judicially noticed, that a lump sum of money in hand will beget money through investment, whether such investment be the most conservative and safe one such as a bank savings account, or a less safe and more remunerative one. The law therefore recognizes that a lump sum paid now for future loss is worth more to the recipient than future payments made as the prospective loss occurs. As one court said: “It is self-evident that a given sum of money in hand is worth more than the like sum of money payable in the future.”

The law, by reason of practical necessity, permits and requires the present assessment of future loss and damage, even though a computation of future loss necessarily involves gross uncertainties, especially when such things as length of life, future employment and earnings and future physical condition, are involved. But having permitted such an assessment the law then must, and does, recognize the earning power of money and requires a reduction commensurate with such earning power. This is referred to as reduction to present worth. It is rather obvious that in any given case the uncertainties surrounding the span of life of the party, his future employment and earnings, and his future physical condition, and the like, are far greater than those surrounding the present and future earning power of money in the area where the party lives and in which the case is being tried.

Of course the purpose of reduction to present worth is to equalize, as much as possible, the loss to the defendant and the unwarranted windfall to the plaintiff arising from the present assessment and payment, in a lump sum, of future and prospective loss and damage.

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Reduction to Present Worth in Personal Injury and Wrongful Death Cases

Application of Principal to Various Items of Damage

What items of damage must be reduced to present worth?

In a personal injury action there are usually involved the following items of damage: (1) the loss of time and consequent loss of earnings actually suffered up to the date of trial; (2) the diminution or loss of earning capacity during plaintiff's future life reasonably certain to follow from the injury; (3) an allowance for the physical and mental pain and suffering endured to the date of trial as a direct result of the injury sustained; (4) an allowance for any future physical and mental pain and suffering reasonably certain to occur as a result of the injury; (5) medical expenses actually incurred and those reasonably certain to be incurred in the future.4

In a wrongful death action the recovery by the appropriate beneficiaries is usually limited by the wrongful death statute involved to the "pecuniary injury" to the designated beneficiaries resulting from the death.5 Pecuniary injury is equivalent to "money loss."6 But such loss consists not only of the loss of financial assistance which the beneficiaries would with reasonable certainty have received from the deceased had his life not been shortened, but also the loss of other things which have a pecuniary value. The principal things recognized as having a pecuniary value are: the loss of financial assistance from the decedent, the loss of services of the deceased, and the loss of parental, filial or marital care, counsel and education.7 The amount that the decedent would with reasonable certainty have saved during his lifetime and left to his beneficiaries upon his death is also an item of pecuniary loss.8 Such things as the loss of the society, companionship, and kindness (as distinguished from services) of the deceased, are generally not deemed to have pecuniary value, nor is the mental anguish and suffering of the beneficiaries as the result of the death a recoverable item.9

Generally speaking all items of damage reasonably certain to arise in the future by reason of the injury or death should be reduced

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5 Ohio Rev. Code § 2125.02 (1953); 45 U.S.C. § 51 (1939); 25 C.J.S. "Death" §§ 95, 100 (1955).
8 16 Ohio Jur.2d "Death" § 130 (1955).
to present value by the trier of the facts because the loss is prospective and the plaintiff is in effect being prepaid for such loss. The earning power of money would thus produce an overpayment at the time the prospective loss actually occurs unless the award had been reduced. However, it is generally stated that an award for future pain and suffering need not be reduced to its present value.\textsuperscript{10} The reason for this is stated as follows in \textit{Chicago & N.W. Ry. Co. v. Candler}:\textsuperscript{11}

\begin{quote}
. . . At the best the allowance [for future pain and suffering] is an estimated sum determined by the intelligence and conscience of the jury, and we are convinced that a jury would be much more likely to return a just verdict, considering the estimated life as one single period, than if it should attempt to reach a verdict by dividing the life into yearly periods, setting down yearly estimates, and then reducing the estimates to their present value. The arbitrariness and artificiality of such a method is so apparent that to require a jury to apply it would, we think, be an absurdity.
\end{quote}

And the supreme court of Pennsylvania has stated, without giving any reason, that an award for future medical expenses need not be reduced to present value.\textsuperscript{12}

Such holdings seem to ignore the basic premise and purpose of reduction to present worth. The reasoning where given is not convincing. The damages recoverable for a tort are such as will fairly compensate the plaintiff for the wrong done. Although an award for pain and suffering is not subject to computation by any precise mathematical formula, yet it is in the nature of compensatory, not exemplary, damages.\textsuperscript{13} And compensatory damages are defined to be such damages as measure the actual loss, and are allowed as amends therefor.\textsuperscript{14}

In an Ohio case\textsuperscript{15} the purpose to be served by an award of money for pain and suffering is stated as follows:

\begin{quote}
. . . An award of money damages can in no sense make the plaintiff whole, nor undo the suffering which has been undergone. Money can in no sense be considered an equivalent for pain and suffering. The theory of money compensation for pain and suffering and physical injury must therefore be founded upon the fact that a money judgment operates to afford the plaintiff feelings of satis-
\end{quote}

\begin{footnotes}


\item[14] 16 Ohio Jur.2d "Damages" \S 7-10 (1955).

\end{footnotes}
faction, pleasure or gratification which, in the eyes of the law, will operate to offset the pain which has been undergone. In other words, the possession, control, ownership and purchasing power of money is deemed to afford the plaintiff the power of gratifying other desires and of pursuing happiness, and of resulting in feelings of contentment or of an otherwise pleasurable nature.

From the foregoing it would appear more reasonable to require an award for future physical and mental pain and suffering, as well as for all other future compensatory damage and losses, to be reduced to present value. Otherwise the defendant is unduly and improperly penalized by being required to pay a sum worth more than the amount computed by the jury as necessary to fully compensate the plaintiff as the future loss occurs, and the plaintiff in effect is being overpaid.

Common Errors Inherent in the Application

Whenever items of future loss or damage are to be reduced to present worth, some mathematical computation must be made by the jury under proper instructions by the court. The usual and proper approach is first to determine two things: (1) the length of time over which the future loss or damage will occur, and (2) the total amount of the loss or damage. Then the earning power of money must be determined and the total amount discounted accordingly.

If the physical condition giving rise to the loss is only temporary, the overall problem is diminished. However, most serious cases of personal injury involve some testimony of a permanent partial disability. In most such cases there will be medical testimony wherein the physician gives his opinion of the percentage of permanent partial disability of the plaintiff due to his injury, and it may range in a given case from ten to one hundred per cent. The jury must then ultimately determine what, if any, effect this disability will have upon the plaintiff's future earnings. A common error often enters a case at this point. Due to the natural inclination of a jury to arrive at a percentage of permanent disability, say fifty per cent, based on the medical opinion so expressed, the jury then applies that percentage literally to the plaintiff's prospective earning power, and thereby arrives at a figure which it deems to be this plaintiff's loss of future earnings. To do so wholly ignores the much more important factors, such as the plaintiff's intelligence, education, work experience, line of work, and other such factors. For example, if an uneducated laborer has an injured back his future earnings may be almost wholly lost thereby, whereas an educated sedentary worker with the same injury will probably experience little or no loss of earnings therefrom. And yet the testifying doctor may well give the same percentage of permanent partial disability to each. This is because the doctor in expressing such a percentage looks primarily to the person's decreased ability to perform
all physical acts as compared to all other persons of the same age and sex and does not take into account the plaintiff's particular line of work. Every effort must be made by the attorney to bring this fact out with the doctor and to impress it upon the jury, if this is in fact what the doctor is doing in expressing an opinion of percentage of disability. Otherwise serious injustice will result, and it may penalize either party depending upon the circumstance of the particular case.

Another common error often enters the case in the jury's consideration of the "length of time" element, i.e. the time that the loss will continue. The tendency in both permanent injury and death cases is for the jury and counsel to rely almost entirely on life expectancy tables once they are introduced. If the loss or damage is of the kind that will continue as long as the person lives, such as physical and mental pain and suffering due to the injury, this would be appropriate, assuming of course that the person was in normal health prior to injury. However, in most injury and in practically all death cases a very substantial item of damage is loss of future earnings or support. Here the key fact is not so much the life expectancy of the person, but his work and earning expectancy. These are substantially different things when the usual fact of decreased earnings in later life (whether by retirement or illness) is considered. It is obvious that if an inaccurate multiplier is used the result is bound to be inaccurate.

All the mortality tables appearing in the Appendix to the Revised Code of Ohio are life expectancy tables, and all of the "present value of life annuity" tables appearing there are based upon life expectancy tables. There are in existence authoritative work expectancy tables.

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16 McBride, Disability Evaluation 1 (5th ed. 1953), wherein "disability" is defined as follows: "Disability is a term that implies a transformation of body structures which results in a depreciation of normal ability to perform the functions of established physical accomplishments."

17 Haase v. Ryan, 100 Ohio App. 285, 136 N.E.2d 406 (1955), involving a seven-year-old child with permanent facial scar and loss of front teeth. For a full discussion of work and life expectancy tables, and for specific work expectancies as shown by the United States Population Tables, see 19 Ohio St. L.J. 240, 253.

18 For cases emphasizing the importance of the distinction between length of life expectancy and length of earning expectancy, see: Thompson v. Camp, 163 F.2d 396, 403 (6th Cir. 1947); Wetherbee v. Elgin, J. & E. Ry., 191 F.2d 302, 309 (7th Cir. 1951); City of Key West v. Baldwin, 69 Fla. 136, 67 So. 808, 813 (1915); Greer v. Louisville & N.R.R., 94 Ky. 169, 21 S.W. 649, 651 (1893); Illinois Cent. R.R. v. Houchins, 121 Ky. 136, 89 S.W. 530, 532-533 (1905), cited and followed in Fifield's Admr. v. Town of Rochester, 89 Vt. 329, 95 Atl. 675, 676 (1915).

which are much more accurate for determining earning expectancy than are the mortality tables.\textsuperscript{20}

Another chronic error that enters into a jury’s computation of damages seems to lie in the jury’s almost holy regard for the inflexible accuracy of the mortality or work expectancy table regardless of the plaintiff’s particular physical condition and consequent expectancy. This is particularly noticeable in aggravation cases where the plaintiff or decedent admittedly suffered from a serious and probably life-shortening condition before the injury, such as cancer or cardiovascular disease. And the same erroneous factor is present even where the injury to a healthy plaintiff is a life-shortening one, because the defendant may expect a wrongful death action later on. Once an expectancy table is introduced, even though offered as a guide only under proper charge of the court, the tendency of the jury too often is to take the expectancy given in the table and to ignore the particulars of the case before them. Quaere—Should the admission of expectancy tables be denied in certain cases, particularly where the testifying doctors have estimated the plaintiff’s life expectancy with particularity? Where experience of long duration and due judicial consideration shows a certain kind of evidence, though logically relevant, to be, in practical effect, harmful, [as tending to produce a confusion in the mind of the jury], it may be excluded.\textsuperscript{21}

Perhaps the most prevalent error in this era of higher verdicts is the simple failure of the jury, even though properly and fully instructed, to reduce to present value the items of damage required to be so reduced. It can only be assumed that the jury either is not fully aware of what is required or does not know how to accomplish it. It is therefore incumbent upon the trial lawyer to see to it that the jury is made fully conscious of its duty, and is given simple and usable tools with which to work.

Every proper and permissible effort should also be made to test the verdict on the subject of damages.\textsuperscript{22} If it is proper by interrogatory

\textsuperscript{20} See C. W. Krohl & J. R. Wolfe, “Work-Life Expectancy” 26 Ins. Counsel J. 190-192 (April 1959) and 15 J. Missouri B. 369-379, 396-412 (August-September, 1959). The authors point out convincingly that the Smith & Griffin table is based on the work expectancy of all employees in the entire railroad industry, including executives, all non-operating employees including women, as well as train crews—of which the train operating employees are less than 25\% of the whole; that the group included represents a diversified cross-section of our industrial population as a whole; and that this comes closer to being an accurate guide for work expectancy of all industrial employees than does a length of life (mortality) table.


\textsuperscript{22} As to what interrogatories are permissible on this subject see 89 C.J.S. “Trial”
to determine the content of a defendant’s negligence as found by the jury, it would seem logical to permit interrogatories designed to determine the content of plaintiff’s total damages as found by the jury where several elements or items of damage are sought, i.e., loss of earnings, medical expense, pain and suffering, and the like. It is only in this way that the jury’s finding of amount, which is just as important a part of the verdict as the finding of liability, can be tested and the legal rights of each party fully protected.

TACTICAL CONSIDERATIONS IN PRESENTING PROOF OF REDUCTION TO PRESENT WORTH

From the plaintiff’s standpoint the prime hazard involved in presenting specific proof of reduction to present worth lies in the simple fact that the net is always less than the gross. While the defendant gains conversely, he must take care to avoid giving the jury the impression that the only real issue in the case is “how much.” This psychological factor is substantial in certain cases, particularly where the liability is in serious dispute.

Where jurors in the county of trial are believed to be well aware, usually by reason of prior newspaper publicity, that very substantial verdicts have been returned in the recent past by their neighbors in cases of death or serious permanent injury, the plaintiff’s attorney is not likely to present evidence, at least in chief, of reduction to present worth. He will rely instead upon the simple facts of the plaintiff’s or decedent’s earning power, the life expectancy table, and the doctor’s percentage estimate of permanent disability in case of permanent injury, and make his calculations accordingly in his argument to the jury, thereby shifting all possible burden of any reduction to the defendant. But if trial is being had in a heretofore small verdict county he may choose to call live witnesses to the stand on the subject of the cost of annuities and other matters relating to reduction to present worth in an effort to impress upon the jury’s collective mind the sheer magnitude of the loss in that particular case, and the right to a very large verdict even when all loss figures are presented in the light most favorable to the defendant. For example, at the time Bartlebaugh v. Pennsylvania R.R., was tried in Franklin County in 1947, the highest verdict in that county had been one for 30,000 dollars in a


death case. Bartlebaugh was aged twenty-three years and eight months, had suffered a double amputation above the knees, was a wheelchair case, and would need the care of an attendant and probably a specially built and equipped home in the future. The plaintiff in his case in chief called a personable Certified Life Underwriter who testified as to the cost of annuities returning various annual amounts for life within the range that plaintiff claimed would be necessary to reimburse him for his future loss of wages and defray the additional expenses made necessary by his condition. The defendant presented several expert witnesses who testified on the same subject but presented somewhat lower figures. But all figures, when added to even a conservative allowance for past loss and damage and future physical and mental suffering, were in six figures. The verdict was for 225,000 dollars—later reduced by remittitur by the Ohio Supreme Court to 150,000 dollars which was paid. It is interesting to note that Bartlebaugh invested his money wisely in real estate, died suddenly from a heart attack several years after the judgment was paid, and left his widow very well fixed indeed.

In Cuyahoga County, where six figure verdicts are well known, the plaintiff's attorney will rarely, even in rebuttal, present evidence on the subject of reduction to present worth. As recently as January 29, 1960, a jury gave a verdict of 175,000 dollars to a married lady in her late forties for facial cuts and scars, where no such evidence was presented. And her attorney did not even give a blackboard "chalk talk" to the jury on damages, but simply told the jury that the suit was for a quarter million, that her disfigurement was permanent and she had to live with it, and that the jury should return whatever amount it deemed proper.

The public consciousness at the locale of trial, and the seriousness of the liability question, would seem to be the principal factors involved in deciding whether witness testimony on reduction to present worth should be presented.

THE MECHANICS OF PROOF

Assuming that the case is one involving a claim for future medical expenses and decreased earning capacity (or decreased contributions in case of wrongful death), direct evidence of the nature, extent and estimated cost of future medical expenses will have been introduced,


26 Bartlebaugh v. Pennsylvania R.R. Co., 150 Ohio St. 387, 82 N.E.2d 853 (1948), wherein the court held that the cost of a refund annuity is improper evidence of the present worth of plaintiff's future earnings, but that the cost of a straight annuity (no refund upon premature death) is proper evidence.
and evidence of the future earnings or contributions "but for" the
injury or death will have been presented. The latter is accomplished by
showing the past work record and future work and earning prospects
of the person involved. If the defendant takes the position that this
particular plaintiff's (decedent's) life or work expectancy was sub-
stantially shorter than average by reason of his illness or disease de-
fendant will have presented medical evidence of this fact (usually con-
sisting of a doctor's opinion as to this plaintiff's expectancy with ex-
planatory reasons) and will probably wish to rely on that estimate
alone without reference to life or work expectancy tables. But regard-
less of this the plaintiff will probably wish to introduce a life ex-
pectancy table that will show the longest life expectancy. And absent
medical testimony of a shorter life or work expectancy of the particular
plaintiff or decedent, the defendant will probably wish to present a
work expectancy table or a life expectancy table that is more favorable
to defendant's position on damages.

Once such evidence is presented it is then relevant and important
to turn attention to the earning power of money. This involves the
interest rates returned on various investments. Bank and savings de-
posits, straight annuity policies, government or "blue chip" bonds, and
real estate investments are among those best known to and easily
understood by the jury, and most obviously usable by a plaintiff in-
experienced in business and financial matters.

Simplicity of fact and presentation is the keynote. If the defense
attorney is successful in impressing upon the jury two basic things:
(1) the jury's duty to reduce certain items of damage to present value,
and (2) a simple mechanical means by which to do it, he will have
served his client well.

Actuarial tables, life or work expectancy tables, and evidence of
the rates of return on investments, can be introduced in a number of
ways. Most courts will take judicial notice of life expectancy tables,
annuity tables, and of the simple fact that a sum of money in hand
possesses earning power. A court will also take judicial notice of the
simple rules of mathematics. It is also suggested that a court may
take judicial notice of such generally known facts as the then existing
rates of return on government bonds and bank and savings and loan
deposits in the area where the court is sitting. However, work expect-
ancy tables and the rates of return on other types of investments may
not be judicially noticeable. An actuary may be called to testify to any
or all of the foregoing subjects.

If counsel wishes to emphasize with particularity the element of
reduction to present worth he will probably call an actuary and have
certain charts ready for use as demonstrative evidence, or a black-
board can be used for the purpose. The defendant will probably wish to use neutral figures to assist the jury. And there is authority to the effect that the actuary should use neutral figures, and not actual figures, in his testimony.\textsuperscript{27} Other cases have approved the use of actual figures by an actuary.\textsuperscript{28} There is divergence of judicial opinion as to whether it is proper to introduce evidence of annuity costs\textsuperscript{29} or present-worth tables\textsuperscript{30} to aid the jury in reducing to present worth the loss of future earnings or contributions. These are generally held admissible in Ohio.\textsuperscript{31}

Some simple tables of neutral figures would be as follows:

<table>
<thead>
<tr>
<th>Present and Future Value of Money Payable at 5%</th>
<th>Present Value</th>
<th>Future Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound Interest</td>
<td>$ .95</td>
<td>$1.00</td>
</tr>
<tr>
<td>$1.00 payable in 1 year</td>
<td>$ .61</td>
<td>1.00</td>
</tr>
<tr>
<td>$1.00 payable in 10 years</td>
<td>$ .38</td>
<td>1.00</td>
</tr>
<tr>
<td>$1.00 payable in 20 years</td>
<td>$ .14</td>
<td>1.00</td>
</tr>
<tr>
<td>$1.00 payable in 40 years</td>
<td>.05</td>
<td>1.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Present and Future Value of Monthly Annuities</th>
<th>Present Value</th>
<th>Future Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.00 per month for 1 year at 5%</td>
<td>$11.42</td>
<td>$12.00</td>
</tr>
<tr>
<td>$1.00 per month for 10 years at 5%</td>
<td>92.66</td>
<td>120.00</td>
</tr>
<tr>
<td>$1.00 per month for 20 years at 5%</td>
<td>149.55</td>
<td>240.00</td>
</tr>
<tr>
<td>$1.00 per month for 40 years at 5%</td>
<td>205.91</td>
<td>480.00</td>
</tr>
<tr>
<td>$1.00 per month for 60 years at 5%</td>
<td>227.15</td>
<td>720.00</td>
</tr>
</tbody>
</table>

Other neutral figures (such as $10, $100, or $1,000), or actual figures, may be used if desired. If counsel desires to combine life expectancy, interest rate and monthly annuity amounts in one table, it could be done as follows:

**Present Value of a Monthly Annuity Payment for Life at Age 51, Based on American Experience Table (Expectancy of 20.2 Years)—Invested at 3½%**

<table>
<thead>
<tr>
<th>Monthly Annuity</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 1.00</td>
<td>164.95</td>
</tr>
<tr>
<td>10.00</td>
<td>1,649.50</td>
</tr>
<tr>
<td>100.00</td>
<td>16,495.00</td>
</tr>
<tr>
<td>200.00</td>
<td>32,990.00</td>
</tr>
<tr>
<td>300.00</td>
<td>49,485.00</td>
</tr>
</tbody>
</table>


\textsuperscript{31} 16 Ohio Jur.2d "Damages" § 177 (1955).
Or if the annuity were to stop at age sixty-five, on the theory that the party would stop work at that time, for a plaintiff aged fifty-one, at three and one-half per cent the foregoing figures would be:

<table>
<thead>
<tr>
<th>Monthly Annuity</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.00</td>
<td>$118.40</td>
</tr>
<tr>
<td>10.00</td>
<td>1,184.00</td>
</tr>
<tr>
<td>100.00</td>
<td>11,840.00</td>
</tr>
<tr>
<td>200.00</td>
<td>23,680.00</td>
</tr>
<tr>
<td>300.00</td>
<td>35,520.00</td>
</tr>
</tbody>
</table>

If the future values are desired for comparative purposes, they can be easily computed and entered in a parallel column headed "Future Value." This simple comparison can be very impressive.

Whenever evidence is presented on the subject of reduction to present worth it is well to bear in mind that the court should give a cautionary instruction to the effect that such evidence is not conclusive as to the amount to be awarded as damages but is only one of several elements to be considered in determining the amount to be awarded.\(^32\)

If for tactical reasons counsel does not wish to submit actuarial testimony with or without demonstrative evidence, use can still be made in oral argument of matters of common knowledge, such as the fact that work expectancy is less than life expectancy, the fact of average life expectancy at a given age, the fact of earning power of deposits in financial institutions in the locality, and facts of simple mathematical calculations based thereon including compound discount tables. In this way either counsel can still present the fundamental facts and principles involved in reduction to present worth without any live witness or demonstrative aids, if that course is deemed best in the particular case being tried. By using a compound discount table\(^33\) the present value of one dollar per annum payable at the end of each year can be shown. Thus, as an example, it could be easily pointed out to the jury that fifteen dollars in hand today, invested at five per cent and the principal reduced annually, will produce one dollar per year for twenty-eight and one-half years, or a total of twenty-eight dollars and fifty cents—nearly twice as much as awarded. Conversely, a plaintiff would have to be awarded only approximately one-half of his future loss to be made whole in that instance. Other comparisons can be worked out to fit the case at hand.


On the subject of the proper interest rate to be used as representing the earning power of money, the matter is usually left to the sound discretion of the jury. However, it has been stated that the legal rate of interest is the proper rate of discount to be used, and it has been held that to use any less than four per cent is erroneous.

The duty of the jury to reduce certain items of damage to present worth is mandatory. It behooves counsel, therefore, to use the means at hand, and the means best suited to the particular case, to impress that fact upon the jury and to give them some simple tools with which to carry out their duty.

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