CALCULATING DAMAGES FOR PAIN AND SUFFERING: THE MATHEMATICAL FORMULA DEVICE

Because personal injury actions comprise about seventy percent of all litigation,¹ courts must regularly confront the problem of assessing damages for pain and suffering.² A source of difficulty is the fact that pain and suffering are subjective in nature and hence insusceptible of objective evaluation in terms of money. Hypothesizing that the basic objective of tort damages is the substantial restoration of the victim to the position he enjoyed prior to the occurrence of the tort, the question remains whether criteria can be established to aid in determining the monetary equivalent of his resultant pain and suffering.

When a chattel is lost as the result of a tort, the jury can be guided by reasonably definite standards, for most chattels are easily replaced, and their value readily determined. In a situation involving pain and suffering, however, not only is restoration in specie impossible, but it is also unrealistic for a court to instruct a jury to award as compensation the cost of having a reasonable man undergo plaintiff's pain and suffering.³ Indeed, if such a criterion were literally applied, verdicts would reach astronomical proportions, for no reasonable man would undergo pain and suffering for any amount of money.

In an effort to cope with this dilemma, the courts have applied the test of what is "fair and reasonable compensation" under the circumstances.⁴ But this nebulous test, like all standards based on reasonableness, suffers inherent difficulties in administration, for the jury, in determining what is "reasonable," is left to its own devices, and the basis, if any, of the resulting verdict is rarely ascertainable. The only checks on the jury award in such cases are: (1) the trial judge's power to set aside an award and grant a new trial where the award was "so grossly excessive as to show that it was actuated by passion, prejudice, or partiality, or was based on some mistake as to the law or facts,"⁵ or, (2) the vague principles of *increscitur* and *remittitur*,⁶ whereby the appellate court either increases or decreases the judgment

- 5. McCormick, Damages § 18, at 71 (1935).
- 6. See generally McCormick, Damages § 19 (1935).

^{1.} Belli, Demonstrative Evidence And The Adequate Award, 22 Miss. L.J. 284, 286 (1951) [hereinafter cited as Belli].

^{2.} For a brief, general discussion of this problem see McCormick, Damages § 88 (1935).

^{3.} See, e.g., Goodhart v. Pennsylvania R.R., 177 Pa. 1, 35 Atl. 191 (1896).

^{4.} See, e.g., Faught v. Washam, 329 S.W.2d 588, 602 (Mo. 1959).

below or commands either a partial (on the issues of damages only) or complete retrial of the controversy.

As a consequence of this underlying uncertainty, there is increasing disagreement on the question of what opposing counsel may include in their presentation to the jury. Since, as noted above, damages for pain and suffering are not susceptible to reduction to monetary value, it follows that the plaintiff, in an action for pain and suffering need not prove the extent or equivalent in money damages of his loss or injury —as in the case of pecuniary damage. Possibly because of this decreased burden of proof, evidence allowed in to sustain the burden is limited. For example, opinions or estimates of witnesses as to amount of damages have often been held inadmissible.⁷ Generally, if counsel is permitted at all to persuade the jurors to accept what he believes to be a reasonable figure, it must be in the oral argument.⁸

This note will discuss generally what arguments in terms of the size of an award for pain and suffering can be directed to a jury. More specifically, an evaluation will be made of a technique of recent origin which presents to the panel a mathematical basis for calculating damages for pain and suffering.

A striking example of the utilization of the mathematical formula device is seen in *Braddock v. Seaboard Air Line R.R.*,⁹ where counsel argued from the following chart:¹⁰

"Mike" Braddock		
Age 9	Expectancy 56 years	
Pain and Suffering to date Experience of accident Hospital 3/25—4/5/52 First 30 days at home To date 353 days	395 days 5,000.00 1,200.00 300.00 700.00	
Inability to Lead Normal Life 3/25-5/31/52 crutches 6/110/31/52 pylon 11/1/25 to date artificial limb	340.00 459.00 348.00	
Humiliation and Embarrassment	1,915.00	
	10,262.00	

7. See McCormick, Damages § 14 (1935).

8. This conclusion follows from an appreciation of the restrictions imposed upon admissible evidence as set out by McCormick, Damages § 14 (1935).

9. 80 So. 2d 662 (Fla. 1955).

10. Seaboard Airline R.R. v. Braddock, 96 So. 2d 127, 129 (1957).

20,440 days	Future 56 yrs.
Medical	
Checkup by doctor once a year Artificial legs Repairs and Maintenance Stump socks Extra pants, shoes and socks Limb adjustment every 2 weeks	440.00 3,600.00 2,640.00 985.00 4,400.00 2,912.00
	14,977.00
Pain and Suffering 20,440 days	20,440.00
Humiliation and Embarrassment 20,440 days	40,880.00
Inability to Lead a Normal Life 20,440 days	40,880.00
Loss of Earning Capacity	121,000.00
oou x ou % x oo Total	248,439.0011

In practice this mathematical technique works roughly as follows. Either at the outset of the trial, in his opening statement, or in the final summation after each party has rested its case, plaintiff's attorney will display to the jury a chart similar to that in the *Braddock* situation. Written at the top is usually plaintiff's name, age and life expectancy based on actuarial tables,¹² followed by an itemized list of damages or alleged damages. In the pain and suffering category the usual tactic is a breakdown of the life expectancy of the victim into month, weeks, days, hours or even seconds. Thus a life expectancy of 56 years may be represented as 20,440 days, as in the *Braddock* case, 490,560 hours or 1,760,016,000 seconds. Following this computation, counsel will typically suggest the following hypothetical question:

"Ladies and gentlemen of the jury. . . . Let's take Pat, my client, down to the waterfront. He sees Mike, an old friend. He goes up to him and says, 'Mike, I've got a job for you. It's a perfect job. You're not going to have to work any more for the rest of your life and the best part of this job is once you agree to take it, you'll never lose it. As a matter of fact, you can't lose it. You don't have to do any work and you get five bucks a day for the rest of your life. . . All you have to do is trade me your good back for my bad one and I'll give you five dollars a day for the rest of your life.

12. Belli at 316.

^{11.} The items in the chart labelled "Pain and Suffering, Humiliation and Embarrassment," and "Inability to Lead a Normal Life" are all to be discussed under the general heading of "Pain and Suffering" in this note. The total of these damages is \$102,200 (plus \$7,000 for "Experience of accident" and other items under the first heading of the chart). This amount is computed by assessing five dollars per day for 20,440 days or 56 years.

Do you know what five dollars a day for the rest of your life is? Why that's 60,000! I realize that . . . you're going to have to have excruciating *pain* and *suffering* with this job, thirty-one million seconds a year, and once you take it on, you'll never be able to relieve yourself of this, but you get 60,000."¹³

As a follow-up the jurors are then asked whether they think "Mike" would accept the proposition.¹⁴

Besides the usual chart illustration, skilled practitioners will use a blackboard and carry out each calculation in minute detail.¹⁵ Indeed, attorneys often intentionally miscalculate to a lower figure in hopes that the jury will "follow the complete computation in their own minds" and catch the mistake.¹⁶ The important effect of such minute calculation is illustrated by the fact that jurors have been observed copying figures presented by plaintiff's counsel,¹⁷ and some judges have prohibited such practice.¹⁸

Despite increasing utilization of the formulary approach, however, its propriety is currently a subject of much debate, with the writers and courts disagreeing on whether the method should be tolerated.¹⁹

13. Id. at 319. This is referred to as the "job offer" method. See, e.g., Faught v. Washam, supra note 4.

14. Belli at 319. It should be pointed out that attorneys in some states are not permitted to ask the jury "Would you change places with the plaintiff for 20¢ per hour?" Id. at 322.

15. Belli at 313.

16. Id. at 322.

17. Bradford, How to Talk Dollars and Cents to the Jury, 1959 Ins. L.J. 567, 573.

18. Ibid.

19. The following cases and articles approve of and lend support to the formulary approach: McLaney v. Turner, 267 Ala. 588, 104 So. 2d 315 (1958) (with qualifications); Ratner v. Arrington, 111 So. 2d 82 (Fla. Dist. Ct. App. 1959); Braddock v. Seaboard Airline R.R., 80 So. 2d 662 (Fla. 1955) (where in spite of language to the contrary, in the ultimate decision the court endorsed use of a blackboard); Aetna Oil Co. v. Metcalf, 298 Ky. 706, 183 S.W.2d 637 (1944) (dictum); Flaherty v. Minneapolis & St. Louis R.R., 251 Minn. 345, 87 N.W.2d 633 (1958); Boutang v. Twin City Motor Bus Co., 248 Minn. 240, 80 N.W.2d 30 (1956) (use "for purely illustrative purposes" permitted); 4-County Elec. Power Ass'n v. Clardy, 221 Miss. 403, 73 So. 2d 144 (1954). See Belli, Demonstrative Evidence And The Adequate Award, 22 Miss. L.J. 284 (1951); Comment, 36 Dicta 373 (1959); Comment, 12 Rutgers L. Rev. 522 (1958); Comment, 4 Vill. L. Rev. 137 (1959). But see the following cases and secondary authorities which do not approve of the "formulary approach": Henne v. Balick 146 A.2d 394 (Del. 1958); Ahlstrom v. Minneapolis, St. Paul & Sault Ste. Marie R.R., 244 Minn. 1, 68 N.W.2d 873 (1955); Botta v. Brunner, 26 N.J. 82, 138 A.2d 713 (1958); Warren Petroleum Corp. v. Pyeat, 275 S.W.2d 216 (Tex. Civ. App. 1955). See Bradford, How to Talk Dollars and Cents to the Jury, 1959 Ins. L.J. 567 [hereinafter cited as Bradford]; Comment, 19 Ohio St. L.J. 780 (1959); Comment, 61 W.Va. L. Rev. 302 (1959). It should be noted that Pennsylvania may be considered as a state rejecting the formulary approach, since the courts there have uniformly permitted

Several arguments have been advanced in opposition to the use of such a technique: (1) If an "expert witness" were to offer an opinion on the amount to be awarded for pain and suffering such testimony clearly would be inadmissible as a usurpation of the jury function, and therefore expression of counsel's opinion via the formula device should likewise be inadmissible.²⁰ (2) There is real danger that if the per diem (or other mathematical) approach is permitted, the calculations will become, in the eyes of the jury, "kissing cousins of evidence."21 (3) Defense counsel is placed in the unfair position of having to rebut that which has no basis in fact.²² Assuming the defendant attempts to negate a proposed valuation, "he must necessarily inject as further factual suggestions valuations which again are incapable of proof. By doing so, he fortifies his adversary's implication that the law recognizes pain and suffering as having been evaluated and as capable of being evaluated on such basis."23 (4) The breakdown into days, hours or seconds tends to mislead the jury as to the resulting total amount of the verdict.²⁴ An award of one-dollar an hour, for example, does not seem so great an amount as a total of \$262,080, the lump sump payment on the basis of a 30 year life expectancy.²⁵ (5) The value of pain and suffering cannot be estimated on a per diem basis because "the degree thereof differs in individuals. In the same individual pain is not consistent but varies from day to day."26 (6) The jury is instructed by the court to use its own judgment in deciding the amount to be awarded, yet where the mathematical device is permitted the judgment of counsel tends to control in-

20. See, e.g., Faught v. Washam, supra note 4, where the court expressed dislike of the per diem basis but refused to reverse solely on that ground.

21. Bradford at 571. See, e.g., Ahlstrom v. Minneapolis, St. Paul & Sault Ste. Marie R.R., supra note 19. Also, it can be argued logically here that if the defense fails to refute satisfactorily the rate proposed, the jury might conceivably consider itself bound by plaintiff's "undisputed evidence."

22. Botta v. Brunner, 26 N.J. 82, 138 A.2d 713 (1958).

23. Id. at 724.

24. This is merely a suggested argument, and no authority could be found to support it.

25. If a flat figure of \$262,080 were suggested for pain and suffering conceivably it could appear excessive, especially since compensation for medical expenses and other actual monetary loss is prayed for in addition.

26. Henne v. Balick, supra note 19.

no mention of money to the jury. See, e.g., Goodhart v. Pennsylvania R.R., 177 Pa. 1, 35 Atl. 191 (1896). There are some cases cited as upholding the formula device, however, which should not be cited for that proposition. See e.g., Imperial Oil, Ltd. v. Drlik, 234 F.2d 4, 11 (6th Cir. 1956), where the case was tried without a jury and the appellate tribunal merely held that the use of the device was not "manifestly unjust" as a matter of law.

stead.²⁷ (7) The blackboard with detailed calculations, a procedural characteristic of the approach, produces highly detrimental effects, for it serves to place per diem estimates in a more persuasive position than admissible evidence by attracting two senses rather than one. When employed in the opening argument the "blackboard" formula remains more firmly implanted in the juror's memory than much of the evidence subsequently introduced.²⁸ Also, if blackboard calculations of plaintiff's counsel remain in sight during the defense argument, the effect would closely resemble the former standing behind defense counsel and making faces.²⁹

On the other hand, proponents of the device contend: (1) Universally the appraisal of damages is within the jury's province, but the verdict must be consistent with the evidence.³⁰ Hence it follows that any decision must be inferable from the evidence, and therefore, since counsel possess the right to argue reasonable inferences from the evidence,³¹ their comments or opinions regarding the monetary value of pain and suffering are permissible.³² (2) Since these damages are incapable of accurate measurement, some guidance should be afforded the jury by counsel, and any danger that such guidance will be mistaken for evidence can be obviated by proper instruction.³³ (3) The formula technique is exploited merely for illustrative purposes and is not offered as evidence.³⁴ (4) Inasmuch as defendant is a tortfeasor,³⁵ a valuable criterion for jury decision should not be eliminated in def-

27. A precise illustration of this tendency is seen in Braddock v. Seaboard Airline R.R., 80 So. 2d 662 (Fla. 1955), where the jury returned a verdict of \$248,439, the exact figure calculated on plaintiff's chart. This seems to have horrified the New Jersey court in Botta v. Brunner, supra note 22, and the Missouri court in the Faught case, supra note 4. See also Bradford at 572.

28. See, e.g., 4-County Elec. Power Ass'n v. Clardy, 224 Miss. 403, 433, 73 So. 2d 144, 152 (1954) (dissenting opinion).

29. Hinshaw, Use and Abuse of Demonstrative Evidence: The Art of Jury Persuasion, 40 A.B.A.J. 479, 542 (1954). The relevance of this argument is illustrated in the 4-County case, supra note 28, where the court said that charts used by plaintiff's counsel should not remain in view of the jury during defendant's opening argument or subsequent testimony. 73 So. 2d at 151.

30. See McCormick, Damages §18 (1935).

31. See 6 Wigmore, Evidence § 1806 (3d ed. 1940).

32. See, e.g., 4-County Elec. Power Ass'n v. Clardy, supra note 28. See also Comment, 12 Rutgers L. Rev. 522, 524 (1958).

33. See, e.g., Imperial Oil, Ltd. v. Drlik, 234 F.2d 4 (6th Cir. 1956), cert. denied,
352 U.S. 941 (1956). See also Comment, 12 Rutgers L. Rev. 522, 523 (1958);
Mills, Damages—Pain and Suffering—Per Diem Argument to Jury, 36 Dicta 373,
374 (1959).

34. See Boutang v. Twin City Motor Bus Co., 248 Minn. 240, 80 N.W.2d 30 (1956). See also Mills, Damages—Pain and Suffering—Per Diem Argument to Jury, 36 Dicta 373, 374 (1959).

35. See Comment, 12 Rutgers L. Rev. 522, 524 (1958).

erence to him, especially since defense counsel can employ his own chart or formula.³⁶ In short, it is really not unfair for plaintiff to enjoy a stronger position.³⁷ (5) Most courts have accepted "lump sum" suggestions by counsel³⁸ and therefore it follows logically that explanation of the components of the total should be permitted.³⁹ (6) Some trial courts, sitting without a jury, have arrived at verdicts through the use of similar mathematical formulae.⁴⁰ (7) Assuming the court's acceptance of the approach, there should be no objection to the use of a chart or blackboard, subject of course to the discretion of the trial court as with all offers of demonstrative evidence.⁴¹ (8) Conceivably the presence of such recommendations by counsel would aid appellate tribunals in their determination of the bases of the jury findings.

Thus it appears that the attitudes of judges and lawyers on the mathematical formula question is far from settled. In resolving the controversy, however, an important additional factor requires consideration. Assuming that the utilization of a formula results in higher verdicts,⁴² prejudicial effect cannot be demonstrated except on the as-

36. Note, Per Diem Measurement of Pain and Suffering as Prejudicial Argument, 19 Ohio St. L.J. 780, 782 (1958).

37. See Comment, 12 Rutgers L. Rev. 522, 524 (1958).

38. There are surprisingly few states which have passed on the question of whether counsel may suggest a lump sum to the jury. See cases cited in Bradford at 573. Apparently, however, this is customarily permitted in the vast majority of states. Id. at 570.

39. It would seem that many objections to the use of a formula would apply to a "lump sum" as well, although perhaps to a lesser degree.

40. See, e.g., Imperial Oil, Ltd. v. Drlik, supra note 33.

41. See 4-County Elec. Power Ass'n v. Clardy, 224 Miss. 403, 73 So. 2d 144 (1954).

42. Unfortunately, there is no available statistical study on what constitutes an adequate award. In any event, however, such a study would include at most an opinion poll as to whether or not juries are rendering satisfactory results. The National Association of Claimant's and Compensation Attorneys (NACCA) has been contending that awards are inadequate. One of the foremost spokesmen of this group, Belli, has attemped to demonstrate this view by a comparison of early and recent awards in terms of dollar value. Belli, The Adequate Award, 39 Cal. L. Rev. 1 (1951). On the other hand, however, Plant, in Damages for Pain and Suffering, 19 Ohio St. L.J. 200, 211 (1958), concludes, after examination of recent cases, that awards for pain and suffering have been too high. He suggests that awards be limited to 50% of the "medical, nursing and hospital expenses." Ibid. He reasons that the pain and suffering is roughtly proportional to the amount of injury and hence proportional to the amount of expenses for personal injury. Neither side, however, has much in the way of information to support its conclusions. For the past few years The Jury Project at the University of Chicago Law School has been analyzing the jury process, but as yet there is no report available. In a note concerning adequacy of awards in West Virginia, the author attempted to ascertain the adequacy of jury awards by comparison of

sumption that awards for pain and suffering have been adequate without the device.⁴³ There has been considerable debate recently concerning the adequacy of awards. Under present limitations on our knowledge of economic and social consequences of awards of varying size, however, adequacy can only be determined by consensus of opinion.

However, it seems that any trend toward higher judgments could be checked somewhat by alert action of defense counsel. In the *Braddock* case,⁴⁴ for example, advocates for the defendant could have explained to the panel that the amounts received by plaintiff on the verdict could be invested to accumulate interest, thereby resulting in greater compensation than the jury anticipated.⁴⁵ Further, the defense could suggest its own formula, utilizing plaintiff's actuarial tables and categories, and conceivably reduce the subsequent judgment.⁴⁶

Aside from the fact that effective defenses against the formula exist, however, it seems that the jury, which under the present state of the law can receive no effective guidance from the court in its decision on pain and suffering, should receive assistance from opposing counsel. Since the decision must assign money damages, the arguments should discuss cash values, and logically the sums requested should be reduced to their component parts as an illustration to the jury of how they

verdicts in that state with those in others. He concluded that verdicts in West Virginia were insufficient. Note, 60 W.Va. L. Rev. 339 (1958). See also, Note, 6 Utah L. Rev. 244 (1958), which discusses inadequacy of damages in that state.

43. This is merely an assumption, for there are too few decisions in support. Judgements of the same proportion as in the Braddock case have been rendered apparently without utilization of a formula. Belli, The Adequate Award, 39 Cal. L. Rev. 1 (1951).

44. Braddock v. Seaboard Air Line R.R., 80 So. 2d 662 (Fla. 1955).

45. Suppose plaintiff seeks \$100,000 on a per diem basis of \$5.00. At this rate the jury would believe it was awarding \$1,825 per year. But if plaintiff invested the \$100,000 lump sum payment at 2% he would receive, in addition to the \$1,825 allowance, \$2,000 in interest. Thus in a given year plaintiff would actually secure \$3,825 or more than twice the proposed yearly amount. Secondly, plaintiff could purchase an annuity calculated to net him the \$1,825 per year the jury believes it is awarding, but the cost of such an annuity would be approximately \$50,000, or one-half the amount received. Similarly, if the entire \$100,000 were invested for that purpose, the annual payment would approach \$4,000 or more than twice the yearly rate calculated by plaintiff's attorney. Although this should be an important factor in any verdict, courts apparently do not instruct juries to determine pain and suffering on the basis of present value. With other items of damages, such as loss of earnings, such an instruction is common. See, e.g., Braddock v. Seaboard Airline R.R., supra note 44, at 666. There is great likelihood therefore that this present value concept is overlooked by triers of fact in determining the value of pain and suffering.

46. This could be particularly effective, for any attempt of plaintiff to compensate by raising the original figure per hour, for example, would lessen the chance of jury acceptance of his formula. were derived.⁴⁷ The formula device seems a reasonable technique to this end, especially since it is available to both parties.

It is therefore submitted that courts which have rejected cash estimates of counsel have acted too hastily. As previously indicated, this is a technique of recent origin and hence has not yet been sufficiently tested to determine whether its effects are prejudicial.⁴⁸ This suggests that a policy of watchfulness and testing should be adopted prior to any cursory elimination of this possible tool. If after a period of close scrutiny it is decided that the device results in manifestly unfair verdicts, the courts may thereafter prohibit the practice.⁴⁹

However, should the mathematical approach survive such scrutiny. rigid controls should be established upon its use. for any forensic technique is subject to abuse. First, "cash" discussions should not be permitted in the opening statement, for their purpose is amply served by restricting their use to the closing argument. Also, this would decrease the possibility that they be mistaken for evidence. Secondly, the chart or blackboard should be withdrawn from the jury's view immediately following the argument wherein it is utilized.⁵⁰ Third, where it is still permitted, the question "Would you change places with the plaintiff for 20¢ an hour?" should be prohibited, for it can serve only to mislead the jury.⁵¹ The proper standard for compensation is that which is "fair and reasonable under the circumstances." To suggest that an individual might be induced to suffer physical injury for any amount of money is unpalatable and implausible.⁵² Fourth, the jury should be instructed that the proposed rates are for illustrative purposes only. A suggested charge is as follows:

"Plaintiff has suggested a mathematical basis for computing damages for pain and suffering. In assessing the amount of these damages you must remember not to consider what it would cost to hire someone to undergo the measure of pain alleged to have been suffered. Rather you must decide what is fair and reasonable compensation under the circumstances. If you desire you may use the method suggested by plaintiff's attorney; or you may disregard it. I must caution you that the mathematical formula and

49. It should be noted that since there are no definite standards by which the technique can be tested, final determination would be a mere matter of conjecture and opinion. However, such a probationary period would be helpful in that manifestly unjust verdicts could be pointed out with reasonable accuracy.

50. A similar view was taken by the court in the 4-County case, supra note 28, at 151.

51. See note 14 supra.

52. See Belli at 322.

^{47.} See 7 Wigmore, Evidence § 1944, at 56 (3d ed. 1940).

^{48.} Also, there apparently have been no counter-formulae offered by defense counsel.

figures supplied by counsel have no basis in fact. You are instructed to disregard these figures, except as they are of value for illustrative purposes."⁵³

Although the desirability of a mathematical formula is debatable, it is submitted that it—at a minimum—holds some promise for handling a difficult problem. It must be kept in mind that the total social and economic impact of verdicts of different size is not assessable without empirical studies not now available. Particularly in the absence of such factual information and because no consensus has been reached about the appropriateness of awards, it is urged that the technique be utilized until such time as either factual studies are available or until the results reached because of its use are clearly inconsistent with any consensus which may be reached.

^{53.} Elements of the suggested charge were taken from the language and reasoning of the following opinions: Faught v. Washam, 329 S.W.2d 588 (Mo. 1959); Botta v. Brunner, 26 N.J. 82, 138 A.2d 713 (1958); Goodhart v. Pennsylvania R.R., 177 Pa. 1, 35 Atl. 191 (1896).