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Medical Malpractice: The Right to Recover for the Loss of a Chance of Survival

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Traditionally, a plaintiff suffering from misdiagnosis has been precluded from recovery unless he could show that "but for" the misdiagnosis he would have had a better-than-even chance of recovery. While many courts have attempted to avoid this doctrine by reducing the standard of causation, this has led to inconsistent results. The better approach is to recognize that a "chance" of recovery has a compensable value in and of itself. This comment will explore the concept of loss of a chance and trace its development as it relates to medical malpractice actions.

I. INTRODUCTION

Due to increasing public awareness of the importance of health and early detection of various disease entities such as cancer, cardiovascular disease, and diabetes, medical malpractice suits alleging misdiagnosis and treatment are drastically on the rise. The majority of jurisdictions in the United States continue to cling to the traditional "but for" test of causation. This test denies an aggrieved patient the right to recover from a physician who has negligently deprived him of a chance to recover or survive unless the patient can prove that he had a better-than-even chance of recovery in the absence of the physician's negligence.[1]

Consider, for example, a patient who presents himself to a doctor, complaining of a persistent cough. If the physician negligently fails to diagnose the patient's lung cancer at this time, the physician has increased the probability that the cancer will spread, thereby decreasing the patient's probability of recovery and survival. However, even if the physician discovers the lung tumor at this time, the patient would still have only a forty percent chance of complete recovery and survival. Under the majority approach, this loss of a less-than-even chance of recovery would not be compensable, since regardless of the physician's negligence, the patient more likely than not will die anyway.

Due to a fairly new concept regarding the right to recover for the loss of a chance to survive, a recent trend has developed which allows

1. King, *Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences*, 90 YALE L.J. 1353, 1365 (1981). This majority rule applies to all types of personal injury cases.

a patient to recover from a physician who has in essence caused a loss or lessening of his chance to survive. Although the cases allowing recovery by these types of patients have the same policy considerations in mind, inconsistencies exist among the various jurisdictions in their treatments of the causative standard of proof. Commentators believe that these inconsistencies arise from the courts' failure to focus on the key issue—namely, where one is deprived of his chance to survive, the actual loss suffered is this lost *chance,* not the life itself.[2] Courts which are hesitant to abandon the traditional "but for" or "more probable than not" causation standards need not continue to refuse to recognize this cause of action. It is not suggested that the courts abandon causation—only that they look at what the actual damage is.

With the emphasis properly placed on actual loss, it follows that liability should be imposed on physicians who negligently fail to diagnose and treat promptly and properly, thus affording an aggrieved patient a just compensation for the loss of a *chance* to survive. Failure to recognize this right to recover allows physicians to evade responsibility for their negligent acts or omissions,[3] thereby negating the whole purpose of tort law.

The concept of a right to recover for the loss of a chance for survival in a medical malpractice situation has its origins in both American and Commonwealth case law establishing the right of compensation for the loss of a chance in various types of non-medical situations. These cases will be explored and the various approaches which the courts have taken on the causation issue will be discussed and analyzed. Finally, the complex task of valuing such a lost chance will be discussed.

II. DEVELOPMENT OF THE CONCEPT OF RECOVERY FOR THE LOSS OF A CHANCE

The concept of compensating one for his loss of a chance has its origins in the early English case of *Chaplin v. Hicks.*[4] In *Chaplin,* the plaintiff entered into a contract entitling her to a chance to become one of twelve finalists out of fifty semifinalists in a beauty pageant who would receive three-year acting engagements.[5] The plaintiff did

2. *See* Note, *Damages Contingent Upon Chance,* 18 RUTGERS L. REV. 875, 875 (1964).

3. *See* Wolfstone & Wolfstone, *Recovery of Damages for the Loss of a Chance,* 1978 PERS. INJ. ANN. 744, 744.

4. [1911] 2 K.B. 786.

For a general discussion of the development of the "loss of a chance" theory in English jurisdictions, see 9 H. MCGREGOR, MCGREGOR ON DAMAGES ¶¶ 266-71 (13th ed. 1972); Cooper, *Assessing Possibilities in Damage Awards—The Loss of a Chance or the Chance of a Loss,* 37 SASK. L. REV. 193, 197-209 (1973).

5. Originally, there had been about 6,000 contestants. [1911] 2 K.B. at 787.

not appear for her personal interview due to the defendant's failure to inform her of the time of the interview. As a result, twelve other contestants were chosen for the acting positions.

Because the plaintiff would have had one chance in four of winning in the absence of the defendant's breach, the court upheld a recovery of £100 to the plaintiff. In response to the defendant's argument that the damages were impossible to assess, the court stated that mere difficulty in assessing damages was no bar to a plaintiff's right to recover.[6] Furthermore, the defendant's contention that damages for the loss of a potential benefit were not recoverable was negated by the court's treatment of the plaintiff's loss as the loss of a *chance* to win a prize, rather than a loss of the prize itself.[7] Thus, this case established firm precedent for the proposition that a chance has value and is compensable.[8]

Subsequent English cases have adhered to the reasoning in *Chaplin,* allowing recovery for damages commensurate with the probability that the chance would have occurred.[9] Such cases have led to the development of what is now known as the "simple probability" approach of calculating damages. This theory involves the reduction of the probability (or chance) to a numerical value and the multiplication of that value by the economic value of the possible future benefit to the plaintiff.[10] In applying this theory, the English courts have also been able to deal with the problem of assessing the effect of various contingencies upon the probability of the alleged chance.[11]

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6. *Id.* at 795. The court stated that where an actual loss has resulted from the breach of a contract, and the value of such a loss is difficult to determine, it is the jury's function to do its best to estimate the damages to be awarded. *Id.*

7. In depriving the plaintiff of the opportunity of competing with the other contestants, the defendant also deprived her of a valuable right. *Id.* at 791, 793.

8. Note, *supra* note 2, at 879.

9. *See* Domine v. Grimsdall, [1937] 2 All E.R. 119 (plaintiff allowed to recover £15 for the loss of the chance of payment on a debt when a bailiff breached his duty in carrying out an ordered execution); Otter v. Church, Adams, Tatham & Co., [1953] 1 Ch. 280 (administratrix of son's estate allowed to recover damages from a negligent solicitor who failed to advise her decedent son to execute a disentailing assurance or will, thereby depriving the decedent of the opportunity of increasing the value of his estate).

10. Note, *supra* note 2, at 880.

11. *See, e.g.,* Hall v. Meyrick, [1957] 2 Q.B. 455, *rev'd on other grounds,* [1957] 2 Q.B. 472, in which defendant solicitor failed to inform plaintiff that her subsequent marriage would revoke the couple's chance to benefit under their mutual wills, which were not made in contemplation of their marriage. Upon her husband's death, plaintiff was made aware of the revoked status of the mutual wills secondary to their marriage. In a negligence action against the defendant to recover the value of her

The reasoning in *Chaplin* has been followed in a number of American contract cases.[12] In these cases, the damages have been held to be special damages. Thus, the defendant would only be liable for such damages if he had, or should have had, knowledge that such damages might reasonably be anticipated as a result of his breach.[13] As in *Chaplin,* the courts which have allowed recovery have held that recovery should not be denied due to the difficulty in ascertaining the actual amount.[14] As one court stated, estimation of damages in such cases " 'necessarily requires some improvisation, and the party who has caused the loss may not insist on theoretical perfection.' "[15]

However, a major obstacle to recovery for the value of a lost chance remains in the American majority "all-or-nothing" approach, which denies recovery unless damages can be ascertained with certainty.[16] Although the standard of "certainty" has been gradually relaxed to "reasonable certainty" and to "reasonable probability," the

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husband's estate, the court stated that in order to fully recover, the plaintiff needed to show that she would have remembered a given warning regarding the revoking effect of the marriage, that her husband would have been willing to make a new will subsequent to their marriage, that this new will would have been wholly in her favor, and that such will would not have been subsequently revoked. *Id.* at 470. The court held that "[t]he more the contingencies, the lower the value of the chance or opportunity of which the plaintiff was deprived." *Id.* at 471. The judge, in making allowance for the various contingencies involved, awarded plaintiff one-third of what she would have received if she had not gotten married. *Id.* at 468, 472.

12. *See, e.g.,* Wachtel v. National Alfalfa Journal Co., 190 Iowa 1293, 176 N.W. 801 (1920) (contestant in a magazine contest offering valuable prizes allowed to recover damages for the value of the right to compete when the contest was discontinued in her district); Hall v. Nassau Consumers' Ice Co., 260 N.Y. 417, 183 N.E. 903 (1933) (plaintiff allowed to recover for the loss of a chance to win $5,000.00 in a lottery when the defendant failed to make any drawing whatsoever); Kansas City, M. & O. Ry. Co. v. Bell, 197 S.W. 322, 323 (Tex. Civ. App. 1917) (in action for damages due to the delay in a shipment of hogs for exhibition at a stock show, Texas court held that the plaintiff could recover for the loss of his chance in winning prize money, although damages could not be based upon the amount of the lost prize).

13. Hadley v. Baxendale, 9 Ex. 341 [1854].

14. *See* Contemporary Mission, Inc. v. Famous Music Corp., 557 F.2d 918, 926 (2d Cir. 1977). In *Contemporary Mission,* the court held that the plaintiff's introduction of a statistical analysis to prove how successful its recordings would have been if defendant had not breached his promoting contract was not too speculative. *Id.* at 926-27.

15. *Id.* at 926 (quoting Entis v. Atlantic Wire & Cable Corp., 335 F.2d 759, 763 (2d Cir. 1964)). *Cf.* 11 S. WILLISTON, A TREATISE ON THE LAW OF CONTRACTS § 1346, at 243-45 (3d ed. 1968) (acknowledging that a plaintiff should not be deprived of compensation merely because the amount of damages is uncertain). However, Williston cautions that where the chance of which a plaintiff is deprived has a value in a business sense (e.g., anticipated profits), the courts are reluctant to allow recovery of substantial damages. *Id.* at 245. *See also* Note, *Speculative Profits as Damages for Breach of Contract,* 46 HARV. L. REV. 696, 698-99 (1933).

16. *See* Cooper, *supra* note 4, at 209-15; Note, *supra* note 2, at 885-92. This rule of certainty of damages was developed to prevent conjectural, speculative, or remote jury awards. *See* C. MCCORMICK, HANDBOOK ON THE LAW OF DAMAGES § 25 at 97-99 (1935). *See also* Note, *supra* note 2, at 885 (another reason the American courts use this rule is because it is easy to apply).

majority of American courts still require recovery to be based upon a showing that "more probably than not" (or something stronger than fifty-fifty)[17] the result would have been favorable absent the defendant's negligence. This harsh "all-or-nothing" approach has been widely criticized as "result[ing] in oscillation between overlavishness and niggardliness."[18]

In *Pollack v. Pollack*,[19] the "all-or-nothing" approach resulted in an "overlavish" award. In that case, the defendant promised to pay the plaintiff $5,000.00 annually for the rest of the plaintiff's life, with the condition that if the plaintiff predeceased him, all obligations on the defendant's part would cease. If, however, the defendant predeceased the plaintiff, he would devise $100,000.00 to the plaintiff.

When the defendant breached his annual payments, the plaintiff sued him for the full value of the contract. Through the use of actuarial tables, the court determined that the plaintiff's life expectancy was 14.74 years and that of the defendant's was 11.67 years. Because it was more probable than not that the defendant would predecease the plaintiff, the court awarded the plaintiff $5,000.00 for the next 11.67 years and $100,000.00 for the will.[20] Thus, the court failed to even consider the possibility that the plaintiff might predecease the defendant; rather, it treated the plaintiff's survival as a certainty.[21]

On the other hand, the "niggardliness" of the "all-or-nothing" approach is illustrated by *Western Union Telegraph Co. v. Hall*.[22] In *Hall*, the plaintiff sent his broker a telegram instructing him to purchase 10,000 barrels of oil at $1.17 per barrel. Because the defendant failed to deliver the telegram, the plaintiff lost his chance for profit when the price rose to $1.35 per barrel the following morning. However, since the plaintiff could not prove by a certainty that he would, in fact, have sold the oil at that price, the court refused to allow him recovery.

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17. McCORMICK, *supra* note 16, § 31, at 118.

18. *Id.* § 31, at 119.

19. 39 S.W.2d 853 (Tex. 1931).

20. *Id.* at 858.

21. Had the court used the English "simple probability" approach, the court would have scaled down plaintiff's award according to the degree of probability that he would predecease the defendant—a much fairer result in light of the uncertainty involved.

22. 124 U.S. 444 (1888). *See also* Collatz v. Fox Wis. Amusement Corp., 239 Wis. 156, 300 N.W. 162 (1941), in which the plaintiff, one of two final contestants in a question-answer contest for an automobile, was wrongly eliminated from the contest. The court held that because the plaintiff could not prove that he would have won, defendant was entitled to give the automobile to whomever he wished. *Id.* This case is the antithesis of the English case, Chaplin v. Hicks, [1911] 2 K.B. 786.

The major finding of the "all-or-nothing" method when applied to tort law is that it does not allow an award of damages in proportion to the probabilities even though the requirements of duty, breach, and causation have been shown to a certainty. This approach has been criticized on several grounds. First, and most obvious, the "all-or-nothing" approach is arbitrary.[23] Second, this approach "subverts the deterrence objectives of tort law by denying recovery for the effects of conduct that causes statistically demonstrable losses."[24] Third, it pressures courts into mitigating the inherent harshness of the "all-or-nothing" rule by distorting and changing other rules affecting causation and damages.[25] Fourth, this approach gives culpable defendants the benefit of the uncertainty created by their own tortious conduct.[26] Finally, it denies that the loss of a less-than-even chance is worthy of redress.[27]

A further problem in this area lies in the difficulty American courts seem to have had in conceptualizing the relationship between causation and damage where the damage is the loss of a chance. In order to better understand why American courts have been unable or unwilling to recognize a plaintiff's claim for the loss of a chance, focusing exclusively instead on death or debilitation as the only compensable damage, the issue of causation must be analyzed.

III. THE CAUSATION ISSUE

It is a fundamental principle in the law of torts in both American[28] and Commonwealth[29] jurisdictions that causation is a necessary element of proof before an injured plaintiff can recover damages from a negligent defendant. In a medical malpractice action for personal injuries or wrongful death, the plaintiff must prove that the defendant

23. King, *supra* note 1, at 1376. This arbitrariness can be equated to McCormick's concept of "oscillation between overlavishness and niggardliness." MCCORMICK, *supra* note 16, § 31, at 119.

24. King, *supra* note 1, at 1377. "A failure to allocate the cost of these losses to their tortious sources undermines the whole range of functions served by the causation-valuation process and strikes at the integrity of the torts system of loss allocation." *Id.*

25. *Id.* at 1377-78. For example, the court might feel compelled to relax the standard of proof required for causation as represented by the application of RESTATEMENT (SECOND) OF TORTS § 323(a) (1965) or the application of the substantial factor test. *See infra* notes 64-77 and accompanying text.

26. King, *supra* note 1, at 1378. "But for the defendant's tortious conduct, it would not have been necessary to grapple with the imponderables of chance." *Id.*

27. *Id.* at 1378. Chance inherently has value. Certainly there is a "qualitative difference between a condition that affords a chance of recovery and one that offers no chance at all . . . ." *Id.*

28. *See* W. PROSSER & W. KEETON, ON THE LAW OF TORTS § 30, 165 (5th ed. 1984).

29. *See* W. MEREDITH, MALPRACTICE LIABILITY OF DOCTORS AND HOSPITALS 85-86 (1956); L. ROZOVSKY, CANADIAN HOSPITAL LAW 47 (1974). *See also generally* A. LINDEN, CANADIAN NEGLIGENCE LAW (1972).

physician's conduct was negligent and that such negligence caused[30] the injuries or death before any evidence of the loss of a chance can be submitted to the jury.[31]

A. *Cases Which Have Denied Recovery for the Loss of a Chance of Survival*

An early medical malpractice case, *Kuhn v. Banker*,[32] illustrates the majority rule that causation of an injury must be proven with "reasonable certainty" or "reasonable probability."[33] A patient sued her physician for alleged malpractice in treating her broken hip, resulting in a fifty to seventy-five percent occupational disability. Because she failed to show that the subsequent disunion of the healing bone was caused by the physician's negligence, she was unable to recover damages. The court stated that " '[i]t is legally and logically impossible for it to be probable that a fact exists, and at the same time probable that it does not exist.' "[34] Thus, the patient's loss of her chance for total recovery, in and of itself, was not a sufficient injury from which damages could flow.

This degree-of-certainty rule was clearly stated in *Orcutt v. Spo-*

30. Under modern tort law, a plaintiff must generally show both "proximate cause" and "cause-in-fact" in order to recover on a negligence claim. *See* PROSSER, *supra* note 28, at 165. It should be noted that many courts interchange these two phrases in referring to causation in general. It will be helpful to the reader of this article simply to think of causation generally when such phrases are used.

31. *See* Orcutt v. Spokane County, 58 Wash. 2d 846, 853, 364 P.2d 1102, 1105-06 (1961). It must be remembered that under the majority rule, this evidence may only go to prove that the patient had a better-than-even chance of recovery in the absence of the physician's negligence, not simply that a loss of a chance was sustained by the patient. *See supra* note 1 and accompanying text.

32. MCCORMICK, *supra* note 16, § 31, at 118. Although the following discussion involves only American cases, English and Commonwealth jurisdictions also require the same standard of proof for causation. *See, e.g.*, Levesque v. Comeau, 1970 S.C.R. 1010 (holding that causation in a negligence action must be established by a "preponderance of the probabilities"); Davies v. Harrington, 44 N.S.R.2d 384, 401 (1981) (adopting the *Cimco* burden of proof standard); Cimco Ltd. v. Starr Mfg. Ltd., 17 N.S.R.2d 381, 398 (1976) ("more probable than not" is the degree of probability required before the burden of proof is met in a civil case).

33. 133 Ohio St. 304, 13 N.E.2d 242 (1938).

34. *Id.* at 312, 13 N.E.2d at 246 (quoting Davis v. Guarnieri, 45 Ohio St. 470, 490, 15 N.E. 350, 360 (1887)). It is interesting to note that in a previous Ohio case the court stated that "any [negligent conduct] which diminishes the [plaintiff's] chances of . . . recovery . . . would, in a legal sense, constitute injury." Craig v. Chambers, 17 Ohio St. 253, 261 (1867). The *Kuhn v. Banker* court, however, merely treated this language as obiter dictum. *Kuhn*, 133 Ohio St. at 315, 13 N.E.2d at 246.

kane County,[35] a Washington wrongful death case, where the court stated:

> We have often held that in actions in which recovery is sought for physical conditions allegedly resulting from injuries inflicted by the wrongful act of the defendant, the plaintiff must produce evidence to establish, with reasonable certainty, a causal relationship between the injury and the subsequent condition, so that the jury will not be indulging in speculation and conjecture in passing upon this issue. . . . Moreover, we have held this medical testimony must at least be that the injury "probably" or "more likely than not" caused the subsequent condition, rather than that the accident or injury "might have," "could have," or "possibly did" cause the subsequent condition.[36]

The *Kuhn* and *Orcutt* principles were strongly endorsed in the leading and oft-cited medical malpractice case of *Cooper v. Sisters of Charity of Cincinnati, Inc.*[37] In that case, the decedent died from a basal skull fracture, which the defendant physician failed to diagnose. Expert testimony established the impossibility of ascertaining precisely whether proper diagnosis and medical intervention would have prevented the death. Thus, the court denied recovery, stating that the plaintiff must prove that such negligence, in *probability,* caused the death.[38] It is interesting to note that the court in this case acknowledged the attractiveness of a relaxed standard of proof where health and life are the subject of the litigation.[39] However, the court rejected such a relaxed standard of proof, fearing that it would be too

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35. 58 Wash. 2d 846, 364 P.2d 1102 (1961) (action in which it was alleged that decedent's suicide was the result of defendant's negligence in causing automobile accident).

36. *Id.* at 853, 364 P.2d at 1105-06. However, note that the court, in addition to saying that causation must be proven with "reasonable certainty," also said that testimony to the effect that an injury was "probably" or "more likely than not" caused by defendant's negligence would be sufficient to establish causation, thus allowing a relaxation of the certainty requirement. *See also* Cornfeldt v. Tongen, 295 N.W.2d 638 (Minn. 1980) (judgment for the defendant physician granted when the plaintiff failed to prove that it was more probable than not that his wife's liver failure and resultant death were the result of defendant's negligence in failing to disclose the risk of cancer surgery to her). *But see* Morgenroth v. Pacific Medical Center, Inc., 54 Cal. App. 3d 521, 126 Cal. Rptr. 681 (1976) (where the expert testimony that plaintiff's stroke was *more probably* a complication from the internal mammary visualization procedure than a coincidence was held to fall short of meeting the probability standard of causation).

37. 27 Ohio St. 2d 242, 272 N.E.2d 97 (1971).

38. "Probability" was defined by this court "as that which is more likely than not." *Id.* at 253, 272 N.E.2d at 104. Therefore, the expert's testimony that the decedent had *maybe around* a 50% chance to survive if surgery had been performed did not connote probability. This case was followed in Hiser v. Randolph, 126 Ariz. 608, 617 P.2d 774 (1980) (the plaintiff was required to show that the refusal of an "on call" emergency room physician to treat his wife, who was suffering from acute hyperglycemia, which resulted in a forty-minute delay in her treatment, was the probable, not merely possible, cause of her death). The *Hiser* court held that "the mere loss of an unspecified increment of the chance for survival is, of itself, insufficient to meet the standard of probability." *Id.* at 613, 617 P.2d. at 779.

39. "The strong intuitive sense of humanity tends to emotionally direct us toward a conclusion that in an action for wrongful death an injured person should be compensated for the loss of any chance for survival, regardless of its remoteness." Cooper v. Sisters of Charity of Cincinnati, Inc., 27 Ohio St. 2d at 251-52, 272 N.E.2d at 103.

loosely applied and thus result in more injustice than justice.[40]

In another action against a physician for malpractice,[41] the court held that, before the patient could recover, he had to first establish causation by medical testimony which reasonably excluded any other possible cause, removing the question from the realm of speculation.[42] Again, although the court applied the traditional "more likely than not" test, the court appeared to question its correctness: "No medical opinion on a question of this kind is susceptible of scientific precision and there will always be an 'iffy' element involved."[43]

Regardless of growing expressions of doubt, the "more probable than not" test continues to be consistently applied by the courts. For example, in a 1984 Florida case,[44] a wrongful death action was brought by the decedent's wife, alleging negligence of the hospital's emergency room staff in failing to diagnose and treat her husband's abdominal aortic aneurysm. The aneurysm subsequently ruptured and the husband died. Although conceding that the hospital breached its standard of care to the decedent, the court held that, where the evidence did not show a greater-than-even chance of survival for the decedent in the absence of the hospital's negligence, the hospital could not be held liable.[45]

Thus, under the majority rule, the causation issue is taken from the jury if the plaintiff fails to introduce evidence from which the jury may find that the physician's negligent conduct more probably

40. *Id.*

41. Merriman v. Toothaker, 9 Wash. App. 810, 515 P.2d 509 (1973).

42. *Id.* at 814, 515 P.2d at 512. Because the expert testimony in this case established that the alleged causal relationship was "more likely than not," the court allowed the evidence to be considered by the jury. *See also* Hanselmann v. McCardle, 275 S.C. 46, 267 S.E.2d 531 (1980) (where the plaintiff was nonsuited when he failed to show that "but for" the defendant physician's failure to diagnose his wife's tuberculosis, she would not have died).

43. *Merriman*, 9 Wash. App. at 815, 515 P.2d at 512.

44. Gooding v. University Hosp. Bldg., Inc., 445 So. 2d 1015 (Fla. 1984).

45. The court applied the reasoning of *Cooper*, 27 Ohio St. 2d at 242, 272 N.E.2d at 97. *See supra* notes 37-40 and accompanying text. While acknowledging the desirability of relaxing the causation requirement in medical malpractice actions to avoid injustice and unfairness to a plaintiff who could prove only the possibility (rather than the probability) that the negligence caused the injury, the *Gooding* court reiterated the fears discussed in *Cooper* that a relaxed rule would be applied too loosely, resulting in more injustice than justice. In reaching this result, the court pointed out that no other type of malpractice defendant carries such a heightened burden of liability. *Gooding*, 445 So. 2d at 1020. *See also* PROSSER, *supra* note 28, at § 41 (A plaintiff must provide evidence that the defendant's negligent conduct "more likely than not" was a substantial factor in bringing about the result. If the probabilities are evenly balanced, the defendant is entitled to a directed verdict.).

than not caused the plaintiff's injuries or death. Clearly, the language in each of these cases indicates that the major reason for denying the plaintiff a right to recover for the loss of a chance is the fear of abandoning the traditional and familiar causation standard.

These courts have, however, misinterpreted the true issue involved in these cases. Had the courts focused on the loss of a *chance* for recovery as the injury sustained by the patient, rather than the loss of life or of complete recovery, the plaintiffs would have been entitled to recover damages, since their physicians' negligence was the certain and sole cause of their lost chances. Thus, the "but for" or "more probable than not" test for causation would remain intact, since "but for" the physician's failure to diagnose and treat his patient's disease promptly and properly, the patient would not have been deprived of the chance to survive or recover.

B. Cases Which Have Allowed Recovery for the Loss of a Chance of Survival

1. Application of the "Rescue Doctrine"

A minority of courts have allowed a patient to recover for the loss of a less-than-even chance of survival. These courts have allowed a relaxed standard of proof of causation where the patient shows that the physician's negligent conduct in any way increased the risk of harm to the patient or deprived him of some chance of recovery. This concept stems from the "man overboard" cases, which hold as actionable a sailor's failure to attempt the rescue of a drowning seaman, despite the lack of proof of causation.

As early as 1925, Judge Learned Hand refuted the necessity of proving causation in a seaman's drowning before allowing the issue of liability to go to the jury. As Judge Hand stated:

> There of course remains the question whether they might have also said that the fault caused the loss. About that we agree no certain conclusion was possible. Nobody could, in the nature of things, be sure that the intestate would have seized the rope, or, if he had not, that it would have stopped his body. But we are not dealing with a criminal case, nor are we justified, where certainty is impossible, in insisting upon it. . . . [W]e think it a question about which reasonable men might at least differ whether the intestate would not have been saved, had it been there.[46]

The "rescue doctrine" was approved by the United States Supreme Court in *Cortes v. Baltimore Insular Line, Inc.*,[47] and has been fol-

46. Zinnel v. United States Shipping Bd. Emergency Fleet Corp., 10 F.2d 47, 49 (2d Cir. 1925). *See also* Kirincich v. Standard Dredging Co., 112 F.2d 163 (3d Cir. 1940), where the court again relaxed the causation requirement in a "rescue" case. The decision to relax the requirement was based on the dangerousness of the sea and the overboard seaman's absolute dependence upon his fellow crewmen for rescue. *Id.* at 165.

47. 287 U.S. 367 (1932).

lowed in many jurisdictions.[48]

The maritime case of *Gardner v. National Bulk Carriers, Inc.*[49] has proven to be a leading case in the development of allowing recovery of damages for the loss of a chance for survival. In this case, a seaman was not reported as missing until approximately five and one-half hours after he was last seen. Upon notification, the master of the ship made no attempt to search for him.[50] In refusing to uphold the causation argument of the defendant, the court stated that such a view ignored the underlying character of the master's duty:

> It was less than a duty to rescue him, but it was a positive duty to make a sincere attempt at rescue. The duty is of such nature that its omission will contribute to cause the seaman's death. The duty arises when there is a reasonable possibility of rescue. Proximate cause is tested by the same standard, i.e., causation is proved if the master's omission destroys the reasonable possibility of rescue. Therefore, proximate cause here is implicit in the breach of duty. Indeed, the duty would be empty if it did not itself embrace the loss as a consequence of its breach. Once the evidence sustains the reasonable possibility of rescue, ample or narrow, according to the circumstances, total disregard of the duty, refusal to make even a try . . . imposes liability.
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> Moreover, the master's default . . . *obliterated all possibility of evidence to prove whether a search, if undertaken, would have succeeded or failed.* This alone has in analogous situations been considered a sufficient ground to fasten responsibility on the wrongdoer.[51]

Thus, the court put the burden of proof on the master of the ship, rather than on the helpless seaman in the water.[52]

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48. For a list of the various district courts which have applied the "rescue doctrine," see Gardner v. National Bulk Carriers, Inc., 310 F.2d 284, 286 n.1 (4th Cir. 1962), *cert. denied*, 372 U.S. 913 (1963). Cases in which the circuit courts have followed this doctrine include: Barrios v. Waterman S.S. Corp., 290 F.2d 310 (5th Cir. 1961); Smith v. Reinauer Oil Transp., Inc., 256 F.2d 646 (1st Cir. 1958); Miller v. Farrell Lines, Inc., 247 F.2d 503 (2nd Cir. 1957); Johnson v. United States, 74 F.2d 703 (2nd Cir. 1935).

49. 310 F.2d 284 (4th Cir. 1962), *cert. denied*, 372 U.S. 913 (1963).

50. Expert testimony indicated that the seaman might have survived for some length of time due to favorable weather conditions. Such testimony also indicated that if the seaman had fallen overboard shortly before it was determined that he was missing, and if a search had been subsequently commenced, there would have been a reasonable chance of his rescue. *Id.* at 285.

51. *Id.* at 287 (citation omitted) (emphasis added).

52. In similar circumstances in which a defendant has been negligent and the evidence of the cause of the plaintiff's injury is more readily accessible to the defendant than to the injured party, courts have placed the burden on the defendant to prove the actual cause. *See, e.g.*, Summers v. Tice, 33 Cal. 2d 80, 199 P.2d 1 (1948) (where it could not be determined which of two negligent defendants struck the plaintiff in the eye and lip with bird shot, the burden was placed on each defendant to prove that the shot which hit the plaintiff was that of the other defendant, rather than placing such a burden on the innocent victim). *See also* Haft v. Lone Palm Hotel, 3 Cal. 3d 756, 478 P.2d 465, 91 Cal. Rptr. 745 (1970) (where a father and his five-year-old son drowned in the defendant's pool). Because the defendant failed to follow the statutory requirement of providing a lifeguard or posting a warning that no lifeguard was present, the court

One of the first cases to apply the *Gardner* rationale to a medical malpractice situation was the leading case of *Hicks v. United States.*[53] The court, in rejecting the defendant physician's argument that even if surgery had been performed promptly on the condition which he was accused of misdiagnosing, the success of such surgery would have been mere speculation, held that:

> When a defendant's negligent action or inaction has effectively terminated a person's chance of survival, it does not lie in the defendant's mouth to raise conjectures as to the measure of the chances that he has put beyond the possibility of realization. If there was any substantial possibility of survival and the defendant has destroyed it, he is answerable. Rarely is it possible to demonstrate to an absolute certainty what would have happened in circumstances that the wrongdoer did not allow to come to pass. The law does not in the existing circumstances require the plaintiff to show to a *certainty* that the patient would have lived had she been hospitalized and operated on promptly.[54]

Because the physician negligently nullified whatever chance of recovery the defendant may have had, this negligence was held to be the

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placed the burden of proof on the defendant's shoulders because such negligence "deprived the present plaintiffs of a means of definitively establishing the facts leading to the drownings." *Id.* at 771, 478 P.2d at 475, 91 Cal. Rptr. at 755. The court stated that:

> [T]he shift of the burden of proof . . . may be said to rest on a policy judgment that when there is a substantial probability that a defendant's negligence was a cause of an accident, and when [this] negligence makes it impossible, as a practical matter, for plaintiff to prove "proximate causation" conclusively, it is more appropriate to hold the defendant liable than to deny an innocent plaintiff recovery, unless the defendant can prove that his negligence was *not* a cause of the injury.

Id. at 774 n.19, 478 P.2d at 476 n.19, 91 Cal. Rptr. at 756 n.19 (emphasis in original).

53. 368 F.2d 626 (4th Cir. 1966). This action was brought under the Federal Tort Claims Act, alleging that the decedent's death from an intestinal obstruction and subsequent strangulation of the bowel was the result of the defendant physician's failure to diagnose and treat the condition.

54. *Id.* at 632 (citation omitted) (emphasis in original). Other pre-*Hicks* wrongful death cases also held that the plaintiff does not have to prove survival to a certainty. *See* Harvey v. Silber, 300 Mich. 510, 2 N.W.2d 483 (1942), in which the physician failed to discover that a bullet had pierced the decedent's bowel in multiple locations, resulting in severe internal hemorrhaging and his subsequent death. Because a *probability* existed that surgery would have saved his life and because the negligent diagnosis was the proximate cause of the failure to operate, the court held that the negligent diagnosis was also the proximate cause of his death. *Id.* at 520, 2 N.W.2d at 487. *See also* Dunham v. Village of Canisteo, 303 N.Y. 498, 104 N.E.2d 872 (1952), in which a seventy-six-year-old man died of pneumonitis after being confined for eighteen hours in the city jail without medical attention. The court held that the plaintiff need not eliminate all other possible causes of death, but need only show facts from which defendant's negligent causation could be reasonably inferred. The court also held, similar to *Hicks,* that "one who has negligently forwarded a diseased condition and thereby hastened and prematurely caused death, cannot escape responsibility . . . ." *Id.* at 505, 104 N.E.2d at 876.

Cases following *Hicks* have also discarded a certainty of survival requirement. *See* Rewis v. United States, 503 F.2d 1202, 1205 (5th Cir. 1974), *aff'd on other grounds,* 536 F.2d 594 (1976) (plaintiffs were not required to prove to a reasonable degree of medical certainty that decedent's life could have been saved; they need only show his "likelihood" of survival); Carr v. St. Paul Fire & Marine Ins. Co., 384 F. Supp. 821, 829 (W.D. Ark. 1974) (plaintiff need not show to a mathematical certainty that the decedent would have survived).

proximate cause of her death.[55]

Although the decedent in *Hicks* would have more probably than not survived had she been operated on promptly,[56] the *Hicks* theory was applied in a case where the decedent did not have a greater-than-even chance of recovery in the absence of the physician's negligent conduct. In *Schuler v. Berger*,[57] a twenty-four-year-old woman had experienced progressively severe abdominal pains and cramping. Attributing such pain to postpartum psychosis and a low pain threshold, the physician failed to perform any diagnostic procedures or testing. Shortly thereafter, the woman died from an acute rupture of the diverticulum of the sigmoid colon and subsequent peritonitis. Even though the experts did not state to any degree of certainty that the decedent would have survived if the physician had properly diagnosed her condition and promptly operated on her, the court applied the *Hicks* rule and allowed the plaintiff to recover against the physician for the decedent's loss of a chance to survive.[58]

In a recent New Jersey medical malpractice case,[59] the court ap-

55. *Hicks*, 368 F.2d at 633. The language in *Hicks* referring to the defendant's liability when he has destroyed a patient's chance of survival was reiterated in the California medical malpractice case of Cullum v. Seifer, 1 Cal. App. 3d 20, 81 Cal. Rptr. 381 (1969). The *Cullum* court held that the defendant physician's delay in diagnosing and treating the plaintiff's lymphosarcoma, even though no known cure was then available, prevented more certain proof by the plaintiff that her cancer would have been cured or arrested had treatment been started sooner. *Id.* at 26, 81 Cal. Rptr. at 385.

See also Whitfield v. Whittaker Memorial Hosp., 210 Va. 176, 169 S.E.2d 563 (1969), where similar reasoning was applied. In that case, the decedent died as a result of the allegedly negligent administration of anesthesia, causing the rupture of his stomach secondary to gas insufflation. In following *Hicks*, the court held that in order for the plaintiff to recover against a negligent physician for wrongful death, it was not necessary to show to a certainty that the patient would have lived had the physician not been negligent. *Id.* at 184, 169 S.E.2d at 568-69.

56. In Gooding v. University Hosp. Bldg., Inc., 445 So. 2d 1015, 1019 (Fla. 1984), the court held *Hicks* inapplicable to the factual situation before it because the plaintiff in *Hicks* had met the "more likely than not" test. However, it appears that the *Gooding* court misinterpreted *Hicks*, since the language in *Hicks* indicated that decedent's *loss of a chance* was the recompensed injury, not decedent's *death*. For a discussion of *Gooding*, see *supra* notes 44-45 and accompanying text.

57. 275 F. Supp. 120 (E.D. Pa. 1967).

58. *See id.* at 123-24. *See also* McBride v. United States, 462 F.2d 72 (9th Cir. 1972), where the decedent, who had had a recent history of chest pain, was allowed to return home after being seen in the emergency room for severe chest pains. Shortly thereafter, he died. The court held that when the physician's negligent failure to treat a patient deprives him of a significant chance of improvement, the absence of certainty that the treatment would have prevented the injury or death will not bar his recovery against the physician. *Id.* at 75. However, the court also held that the plaintiff must show such treatment would have, with reasonable probability, prevented the injury or death. *Id.*

59. Evers v. Dollinger, 95 N.J. 399, 471 A.2d 405 (1984).

plied the *Hicks* rationale in addition to expressly acknowledging and accepting a more flexible standard for medical malpractice claims than that traditionally required in other tort actions.[60] In that case, the physician's seven-month delay in diagnosing his patient's breast cancer caused her to have a markedly increased risk of cancer recurrence; subsequently, she suffered great mental and emotional distress. The court's rationale was that the relaxed standard in such a case was necessary to avoid the harsh injustice of the stricter rule.[61]

In all of these cases, the physician's argument was that no proximate cause existed, because either irrevocable injury had already occurred, or it would have occurred to his patient regardless of his negligent acts or omissions.[62] Such a contention, however, misstates the appropriate test for proximate cause, which is that "[a] negligent act need not be the sole cause of the injury complained of in order to be a proximate cause of that injury."[63] Furthermore, the physician-defendant's argument is a product of the same mistake made by the majority of American courts—focusing on the death or debilitation, rather than on the loss of a chance to survive or recover.

2. Application of the Restatement (Second) of Torts § 323(a) and the Substantial Factor Test

A second class of cases, somewhat different from the *Hicks* line of cases, have also allowed recovery by a plaintiff who has been deprived of a less-than-even chance of survival due to a physician's negligence. These cases center around section 323(a) of the Restatement (Second) of Torts, which states:

> One who undertakes, gratuitously or for consideration, to render services to another which he should recognize as necessary for the protection of the other's person or things, is subject to liability to the other for physical harm resulting from his failure to exercise reasonable care to perform his undertaking, if
>
> (a) his failure to exercise such care increases the risk of such harm . . . .[64]

This Restatement theory has recently found much support in the

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60. *Id.* at 413, 415, 471 A.2d at 413, 417. This is the same theory which the *Cooper* court refused to apply. *Cooper*, 27 Ohio St. 2d at 251-52, 272 N.E.2d at 103. *See supra* notes 44-45 and accompanying text.

61. *Evers*, 95 N.J. at 413-19, 471 A.2d at 412-15. Thus, this court applied the rationale acknowledged but rejected by the *Cooper* and *Gooding* courts. *See supra* notes 37-40 and 44-45 and accompanying text.

62. This line of reasoning is similar to that utilized by defendant physicians in wrongful birth cases when fetal injury had already occurred before the negligent acts were committed. *See, e.g.*, Robak v. United States, 658 F.2d 471 (7th Cir. 1981) (where parents of rubella syndrome child brought wrongful birth action against hospital for failure to inform the parents of the dangers to the fetus, where mother could have otherwise obtained an abortion).

63. *Id.* at 477. "Moreover, the cause of action is not based on the injuries . . . but on defendant's failure to diagnose." *Id.*

64. RESTATEMENT (SECOND) OF TORTS § 323(a)(1965).

Pennsylvania courts, which have extended it to medical malpractice cases.[65]

The landmark medical malpractice case applying section 323(a) is *Hamil v. Bashline.*[66] In that case, the decedent arrived at the defendant hospital's emergency room suffering from severe chest pains. Because the hospital lacked the appropriate equipment with which to diagnose his condition, his wife took him to a physician's private office, where he died of a myocardial infarction.

Although the plaintiff failed to establish with a reasonable degree of medical certainty that the hospital's negligence caused the decedent's death, the court determined that the effect of section 323(a) was to relax the degree of certainty normally required in other tort actions.[67] The court reasoned that the very nature of medical malpractice cases evades the preferred degree of certainty. This uncertainty would completely protect a negligent physician from the consequences of his conduct.[68] Thus, once the plaintiff has introduced evidence that the defendant's negligence increased the risk of harm to the patient, and that such harm was actually sustained, a determination as to what *might have happened* in the absence of the physician's negligence becomes a question for the jury. The jury will weigh the probabilities in determining if the increased risk was a substantial factor in producing the injury.[69]

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65. Pennsylvania is presently the leading jurisdiction allowing a plaintiff compensation for the loss of a chance for recovery or survival. However, at least three other states have followed Pennsylvania's lead in this area. *See* Thompson v. Sun City Community Hosp., Inc., No. 16634-PR (Ariz. June 12, 1984) (available Oct. 1, 1984, on LEXIS, States library, Ariz. file) (whole-heartedly accepting and following the Restatement view where a physician's act increased the risk of harm to his patient); *Evers,* 95 N.J. at 416-17, 471 A.2d at 413-14 (accepting the Pennsylvania line of reasoning and the Restatement view in allowing the plaintiff to submit evidence to the jury regarding her increased risk of developing recurrence of cancer due to physician's failure to timely diagnose her breast cancer); Herskovits v. Group Health Coop., 99 Wash. 2d 609, 614, 664 P.2d 474, 477 (1983) (refusing to allow a defendant who has put a chance for life beyond realization to rely on the defense that the result would have happened anyway).

66. 481 Pa. 256, 392 A.2d 1280 (1978).

67. *Id.* at 262-63, 392 A.2d at 1286-87.

68. *Id.* at 271, 392 A.2d at 1287.

69. *Id.* at 269-70, 392 A.2d at 1286-87. *See also* 2 F. HARPER & F. JAMES, THE LAW OF TORTS § 20.2, at 1113 (1956) (emphasis in original), which states:

> [W]here it appears . . . that the victim *might* have saved himself by taking advantage of a precaution which it has been shown defendant negligently failed to afford, courts have generally let a jury find the failure caused the harm, though it is often a pretty speculative matter whether the precaution would in fact have saved the victim.

But see Gooding, 445 So. 2d at 1019-20, where the court acknowledged *Hamil,* but criti-

Only two years later, in *Gradel v. Inouye,*[70] the court again applied the Restatement theory as introduced in *Hamil.* In this case, the physician's failure to diagnose a fibrosarcoma in a seven-year-old boy resulted in the amputation of the boy's left arm. The patient did not show to a reasonable degree of medical certainty that the physician's failure to X-ray his arm caused his subsequent amputation, or that the amputation would have been avoided absent such negligence. The court held that the requisite standard of proof did not relate to the fact that the physician caused the actual amputation; rather, the focus was on whether his negligent conduct increased the *risk* of the amputation.[71] Therefore, it was the jury's responsibility to balance the probabilities in deciding whether such negligence was a substantial factor in bringing about the patient's injuries.[72]

In both of these cases the courts had the proper policy considerations in mind—allowing an innocent aggrieved plaintiff to recover from a culpable physician. However, even these courts did not fully comprehend the key issue involved—the loss of a *chance.* Because of this, they acknowledged that an increased risk of harm (or decreased chance of avoiding harm) was a recoverable injury, but went about allowing recovery in the wrong way.

Since, as previously discussed, there is no need to relax the requisite standard of proof for causation, the application of section 323(a) of the Restatement is not necessary at all. The patient should be required only to show that "but for" the physician's negligence, he would not have been deprived of his *chance* to survive or recover. Furthermore, these courts have added an additional complicating element—the "substantial factor" test, under which the patient must still prove that the physician's negligence was a *substantial factor* in causing his injury.

According to Prosser and Keeton, the "substantial factor" rule is an improvement over the majority "but for" rule in that special class of cases where multiple causation has played an important part in producing the harm.[73] In such cases, responsibility should be im-

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cized such a relaxed causation requirement, believing this could also result in an injustice to physicians, who could find themselves defending cases merely because a patient failed to improve or because a disease was not arrested due to another course of action having been pursued.

70. 491 Pa. 534, 421 A.2d 674 (1980).

71. *Id.* at 544, 421 A.2d at 679.

72. *Id. See also* Jones v. Montefiore Hosp., 494 Pa. 410, 417, 431 A.2d 920, 924 (1981) (expert testimony "need only demonstrate, with a reasonable degree of medical certainty, that a defendant's conduct *increased the risk* of the harm actually sustained . . . .") (emphasis in original); Hoeke v. Mercy Hosp. of Pittsburg, 299 Pa. Super. 416-17, 445 A.2d 140 (1982) (following the *Hamil, Gradel,* and *Jones* courts' application of § 323(a) of the Restatement, where physicians' operative and postoperative care allegedly resulted in their patient's loss of her right leg and right kidney).

73. PROSSER, *supra* note 32, at § 41, 267.

posed upon all causes of the harm, rather than absolving a culpable defendant from liability merely because other causes have contributed to the result. Under this rule, no culpable defendant "can be absolved from [his] responsibility upon the ground that the identical harm would have occurred without [his negligence] . . . ."[74]

Section 432 of the Restatement (Second) of Torts also adopts this line of reasoning for special cases.[75] According to the Restatement, the exception to the general rule that the defendant's negligent conduct is not a substantial factor in the resulting harm if such harm would have occurred anyway, can be found in subsection (2) of section 432, which states: "If two forces are actively operating, one because of the actor's negligence, the other not because of any misconduct on his part, and each of itself is sufficient to bring about harm to another, the actor's negligence may be found to be a substantial factor in bringing it about."[76] Thus, where the harm has been brought about by two or more concurrent causes, and the "but for" test would fail, the plaintiff need only show that the defendant's negligence was a "substantial factor" in causing such harm.

In addition to its adoption in the recent Pennsylvania cases noted above, this "substantial factor" rule has been adopted by various other courts as the appropriate test for causation involving the medical mismanagement of a patient's condition.[77] However, if the application of this test to such cases is closely analyzed, one can plainly see that this test does not work when the patient is alleging the loss of a chance as his injury. In such a case, no concurrent causative forces are at work in annihilating this *chance* to survive; rather, the physician's negligent act or omission is the *sole* cause of this abrogated chance.

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74. *Id.*

75. RESTATEMENT (SECOND) OF TORTS § 432 (1965).

76. *Id.*

77. *See, e.g.,* Bender v. Dingwerth, 425 F.2d 378, 380-81 (5th Cir. 1970) (where physician misdiagnosed decedent's angina as pulmonary congestion, and decedent subsequently died of a myocardial infarction, plaintiff had only to prove that the defendant's negligence was a proximate cause, rather than the *sole* cause, of his death); *Robak,* 658 F.2d at 477 ("A negligent act need not be the sole cause of the injury complained of in order to be a proximate cause of that injury."); Daniels v. Hadley Memorial Hosp., 566 F.2d 749, 757 (D.C. Cir. 1977) (in cases "involving the medical mismanagement of a patient's already potentially fatal condition," the "substantial factor" test is the appropriate test for causation). *See also* Thornton v. CAMC, 305 S.E.2d 316, 323-24 (W. Va. 1983), in which the court acknowledged that the "value of a chance" theory was valid, even though disallowing plaintiff's requested jury instruction on this theory because the instruction was confusing and argumentative. Unfortunately, this court also mixed the concept of chance with that of "substantial factor."

Thus, while giving "lip service" to the right to recover for the loss of a chance, the majority of these courts are still failing to analyze the issue clearly. The application of the "substantial factor" test in such cases is wrong, since the "but for" test remains applicable where the *lost chance* is considered as the injury sustained.

IV. THE VALUE OF A CHANCE

A. Difficulties Encountered by the Jury

Valuation of the loss of a chance is the most difficult aspect of this new concept. Because damage calculation is a jury duty, it is understandable that the court's focus of concern is upon the jury's ability to deal with such a complex and intricate concept. Even though the task is a difficult one, it is urged that juries are fully capable of valuing a chance.

Juries today are faced with many complex cases involving unique damages. For instance, the recent recognition of the new "wrongful life" cause of action[78] has given the jury the task of compensating a child suffering with birth defects subsequent to a physician's failure to diagnose a disease or genetic condition during the prenatal stages. Although it is difficult to measure the medical and financial burdens to be endured by the family and the child in such a case, the courts have allowed the plaintiffs to recover special damages, stating that "[w]hile the law cannot remove the heartache or undo the harm, it can afford some reasonable measure of compensation . . . ."[79]

These wrongful life cases have also addressed another issue which has concerned courts considering whether to allow recovery for the less-than-even chance—namely, the fear that the number of medical malpractice claims will increase.[80] As the courts in the wrongful life cases have pointed out, a fear of increased litigation is groundless, since before any recovery can be had, there first must exist a negligent failure to act by one under the duty to do so.[81]

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78. In 1980, the California Court of Appeal unanimously held that a cause of action for "wrongful life" is valid. Curlender v. Bio-science Laboratories, 106 Cal. App. 3d 811, 165 Cal. Rptr. 477 (1980).

79. Turpin v. Sortini, 31 Cal. 3d 220, 239, 643 P.2d 954, 965, 182 Cal. Rptr. 337, 348 (1982) (quoting Gleitman v. Cosgrove, 49 N.J. 22, 49, 227 A.2d 689, 703 (1967) (Jacobs, J., dissenting)).

80. The "medical malpractice crisis" of the early 1970's brought about massive legislative efforts in most states to decrease the number of such suits. *See, e.g.*, the Medical Injury Compensation Reform Act of 1975 (MICRA), Stats. 1975, 2d Ex. Sess. 1975-1976, chs. 1-2, 3949-4007 (codified as amended at CAL. CIV. PROC. CODE § 667.7 (West 1980)). *See also* American Bank and Trust Co. v. Community Hosp. of Los Gatos-Saratoga, Inc., 36 Cal. 3d 359, 379-83, 683 P.2d 670, 682-86, 204 Cal. Rptr. 671, 683-86 (1984) (Mosk, J., dissenting) (discussing the purpose of the passage of MICRA in California).

81. *Curlender*, 106 Cal. App. 3d at 829, 165 Cal. Rptr. at 488. Moreover, regardless of concern for increased litigation, it must be remembered that one wronged by negligence is entitled to a remedy and should therefore be allowed his day in court.

Another difficult area where the jury is required to calculate damages is that involving future damages to personal injury plaintiffs. An increasing number of courts have recognized that "testimony concerning *possible* future consequences of a plaintiff's present injuries is admissible,"[82] thereby allowing compensation for "increased susceptibility."[83] Courts have allowed the jury to consider such evidence, even where cumulative, on the basis that such testimony tends to show the future consequences of an injury.[84] In allowing such evidence to go to the jury, courts give the jury the difficult burden of weighing the evidence, in and of itself speculative, and awarding

82. Joseph, *Less Than Certain Medical Testimony,* 14 TRIAL, Jan. 1978, at 51 (emphasis added).

83. In such cases, many courts have even allowed "possibility" expert testimony, treating such testimony as "medical fact." *Id.* at 52-53. *See, e.g.,* Schwegel v. Goldberg, 209 Pa. Super. 280, 287, 228 A.2d 405, 408-09 (1967) (physician's explanation of possible future effects of injury not deemed as speculation, but as a medical *fact*).

84. Joseph, *supra* note 82, at 54. *See* Trapp v. 4-10 Inv. Corp., 424 F.2d 1261, 1267 (8th Cir. 1970) (an expert may testify as to even a *slight probability* of a future risk of injury); McCall v. United States, 206 F. Supp. 421, 426 (E.D. Va. 1962) (3%-25% possibility of becoming epileptic held admissible); Boose v. Digate, 107 Ill. App. 2d 418, 423, 246 N.E.2d 50, 53 (1969) (doctor's opinion as to plaintiff's future probabilities held admissible); Melford v. Gaus and Brown Constr. Co., 17 Ill. App. 2d 497, 505, 151 N.E.2d 128, 131 (1958) (testimony that plaintiff had a "good chance" of eventual epileptic seizures held admissible); Yates v. Wenk, 363 Mich. 311, 314-15, 109 N.W.2d 828, 829-30 (1961) (*possible relation* between whiplash and headaches held admissible); Dornberg v. St. Paul City Ry. Co., 253 Minn. 52, 60, 91 N.W.2d 178, 185 (1958) (expert's testimony that plaintiff *might* need future surgery was allowed to go to jury); Lynch v. Bissell, 99 N.H. 473, 476, 116 A.2d 121, 124 (1955) ("My opinion is that it will improve. When, God only knows" held admissible); Feist v. Sears, Roebuck & Co., 267 Or. 402, 410, 517 P.2d 675, 679 (1973) (testimony of a *mere* possibility of developing meningitis secondary to a skull fracture held admissible); Kuemmel v. Vradenburg, 239 S.W.2d 869, 874 (Tex. Civ. App. 1951) (testimony that injury was *likely* to have certain effects was sufficient to give measure of certainty for damages). *See also* Comment, *Expert Medical Testimony in Personal Injury Cases in New England,* 39 B.U.L. REV. 207, 215-16 (1959) (opinion medical testimony that an act *could* or *might* cause a given physical result is admissible). *See generally* Brachtenbach, *Future Damages in Personal Injury Actions—The Standard of Proof,* 3 GONZ. L. REV. 75 (1968); Colson & Orseck, *Damages for Possible Future Conditions, reprinted in* DAMAGES IN PERSONAL INJURY AND WRONGFUL DEATH CASES at 334 (ed. S. Schreiber 1965); Rheingold, *Future Damages,* 29 NACCA L.J. 195 (1963); Wolfstone & Wolfstone, *Damages for Increased Likelihood of Illness and Disability,* 1977 PERS. INJ. ANN. 313. *Accord* 7 J. WIGMORE, EVIDENCE IN TRIALS AT COMMON LAW § 1976, at 186-87 (1978), which states:

> This attempt to control the course of expert testimony [to include only the certain or fairly probable] is of course unreasonable in itself. . . .
>
> This is only one of the many instances in which the subtle mental twistings produced by the opinion rule have reduced this part of the law to a congeries of nonsense which is comparable to the incantations of medieval sorcerers and sullies the name of Reason in our law.

But see Jordan v. Bero, 158 W. Va. 28, 42, 210 S.E.2d 618, 629 (1974) (future consequences must be shown with reasonable certainty).

damages accordingly. If juries are capable of adequately evaluating this type of nebulous and speculative evidence and arriving at a fair award of damages, surely they are also capable of dealing with evidence relating to valuation of the loss of a chance.[85]

The application of complicated statistics to damage assessments is routinely undertaken by juries in cases involving comparative negligence.[86] In such cases, the jury has been given the sensitive and often complex assignment of giving a specific percentage figure to the amount of negligence attributable to a culpable party. In spite of the difficulties involved, the courts have not found them to be insurmountable.[87]

Additionally, juries have been faced with such complicated comparative negligence concepts as partial comparative indemnity among concurrent tortfeasors.[88] Principles of comparative fault have also been applied to products liability cases, thus allowing courts to decrease a plaintiff's recovery to the extent that his own negligence contributed to his injury.[89] In these cases, the jury is faced with the intricate burden of weighing the plaintiff's comparative fault (a negligence concept) against a defective product, irrespective of the defendant's fault.[90]

The recent concept of market share analysis introduced in *Sindell v. Abbott Laboratories*[91] represents another modern theory of comparative fault which will require juries to engage in highly complex

85. Certainly, future damages are much more speculative than an injury which has already occurred. Thus, compensating a plaintiff for a lost chance—a present and existing injury—should clearly be allowed.

86. The doctrine of comparative negligence is very similar to the English "simple probability" approach of apportioning damages. This concept allows liability for damages to be borne by those whose negligence caused the harm directly in proportion to their respective fault. *See, e.g.,* Li v. Yellow Cab Co., 13 Cal. 3d 804, 532 P.2d 1226, 119 Cal. Rptr. 858 (1975) (wherein the doctrine of contributory negligence was abandoned and the doctrine of comparative negligence was adopted in California).

87. To assure that the jury has properly followed the specific guidelines it was given for calculating damages, special verdicts and jury interrogatories have been utilized. *See, e.g., Li,* 13 Cal. 3d at 824, 532 P.2d at 1240, 119 Cal. Rptr. at 872.

88. This concept allows indemnity to be apportioned according to fault among joint tortfeasors. Partial comparative indemnity was introduced in Dole v. Dow Chem. Co., 30 N.Y.2d 143, 282 N.E.2d 288, 331 N.Y.S.2d 382 (1972) and expanded in American Motorcycle Ass'n v. Superior Court, 20 Cal. 3d 578, 578 P.2d 899, 146 Cal. Rptr. 182 (1978).

89. *See, e.g.,* Daly v. General Motors Corp., 20 Cal. 3d 725, 575 P.2d 1162, 144 Cal. Rptr. 380 (1978).

90. The jury essentially is faced with reducing the plaintiff's damages by comparing the plaintiff's culpability to the defendant's nonculpability. *See id.* at 763, 575 P.2d at 1185, 144 Cal. Rptr. at 403 (Mosk, J., dissenting) (quoting Levine, *Strict Products Liability and Comparative Negligence: The Collision of Fault and No-Fault,* 14 SAN DIEGO L. REV. 337, 356 (1977)) (who feels that this is "a feat which is beyond the prowess of an American jury").

91. 26 Cal. 3d 588, 607 P.2d 924, 163 Cal. Rptr. 132 (1980), *cert. denied,* 449 U.S. 912 (1980).

valuation.[92] This class action was brought by female children seeking to recover damages for cancer of the vaginal and cervical areas which had developed as a result of their mothers having ingested diethylstilbesterol (DES), a synthetic estrogen compound administered for the purpose of preventing miscarriages. Although the specific manufacturer of the DES which was administered to these mothers could not be identified, the plaintiffs were allowed to recover against all of the manufacturers of the drug upon showing that such manufacturers produced a substantial percentage of the DES available. Each manufacturer was then held liable for the proportion of the judgment represented by its share of the drug market.[93] Acknowledging the difficulty in determining the market share with mathematical certainty and apportioning damages among the multiple defendants in relation to their fault, the *Sindell* court held that such reasons do not militate against recovery. "[W]here a correct division of liability cannot be made 'the trier of fact may make it the best it can.' "[94] It is significant to note that this is exactly what the *Chaplin v. Hicks* court held over seventy years ago in the seminal case allowing a cause of action for the loss of a chance.[95]

As these cases indicate, the difficult task of balancing probabilities and evaluating statistics, which often involves a high degree of speculation, is a proper jury function. Therefore, the argument that the valuation of a lost chance is too speculative should be discounted as a bar to recovery.

B. The Speculative Nature of the Value of a Chance

Although valuing a lost chance is difficult, the calculation of its value is not impossible and should be allowed. Recovery for a less-than-even chance in medical malpractice cases has received increasing approval by various courts over the years.[96] As early as 1902, the

92. Although *Sindell* itself was not tried before a jury, it must be assumed that juries in the future will indeed be required to deal with the concepts created by the case.

93. *Id.* at 611-12, 607 P.2d at 936, 163 Cal. Rptr. at 144-45. If the defendants could prove that they could not have made the DES which caused the plaintiffs' injuries, they could escape liability.

94. *Id.* at 613, 607 P.2d at 937, 163 Cal. Rptr. at 145 (quoting Summers v. Tice, 33 Cal. 2d 80, 88, 199 P.2d 1, 5 (1948)). For an excellent discussion on mass exposure accidents, such as those involving DES and asbestos, see generally Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 851 (1984).

95. *See supra* note 6 and accompanying text.

96. *See* O'Brien v. Stover, 443 F.2d 1013 (8th Cir. 1971). An oral surgeon failed to

Kentucky Supreme Court stated:

> [w]hen a physician undertakes to give his attention, care, and skill to a given case of injury or disease, the patient is entitled to the *chance* for the better results that are supposed to come from such treatment. . . . That the patient might have died in spite of the treatment, or that "ordinarily" they die in such cases . . . is no excuse to the physician who neglects to give his patient the benefit of the chance involved in a proper treatment of his case.[97]

This case supports the proposition that a chance for life or recovery, no matter how minimal, has value.[98]

Recently, in *James v. United States*,[99] the value of one's chance to live was reiterated. In this case, the physician negligently failed to inform his patient of a lung mass which was discovered during a routine chest X-ray. The patient did not discover the tumor until two years later, at which time the cancer had already invaded the mediastinum. Although the plaintiff did not prove that the tumor was, in fact, operable when it was first detected two years previously,[100] he demonstrated that early discovery and treatment would have given him a *chance* of survival or prolonged life, of which he was wrongfully deprived.[101] The court allowed him to recover damages, stating,

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diagnose cancer when a tooth socket failed to heal properly after an extraction. Even though this type of cancer only had an overall survival rate of 30%, the court allowed the plaintiff to recover for his lost chance of survival, stating that "[a] patient is entitled to as thorough and careful examination as his condition warrants and attending circumstances will permit, with such diligence and methods of diagnosis as are usually approved and practiced by physicians of ordinary skill and learning under like circumstances . . . ." *Id.* at 1017 (citing Grosjean v. Spencer, 258 Iowa 685, 691, 140 N.W.2d 139, 143 (1966); Barnes v. Bovenmyer, 255 Iowa 220, 228, 122 N.W.2d 312, 316 (1963)). *See also* Jeanes v. Milner, 428 F.2d 598 (8th Cir. 1970) (plaintiff allowed to recover from a physician who failed to diagnose a lymphosarcoma of decedent's throat, causing decedent's chance of survival to decrease from 35% to 24% when the cancer was discovered four months later); Kallenberg v. Beth Israel Hosp., 45 A.D.2d 177, 357 N.Y.S.2d 508 (1974) (per curiam) (plaintiff allowed to recover for decedent's 20-40% chance of survival of which she was deprived when an ordered hypotensive drug was not administered, thereby resulting in a massive hemorrhage from her cerebral aneurysm and her subsequent death before surgery could be performed).

97. Burk v. Foster, 114 Ky. 20, 26, 69 S.W. 1096, 1098 (1902) (emphasis added). *See also* Neal v. Welker, 426 S.W.2d 476, 478 (Ky. 1968) ("appellant would have had a case warranting a trial if the availability of any medical testimony had been shown to support the contention that [he] had a chance—and that the chance had been obliterated by inadequate treatment by any of the appellee-defendants"); Rogers v. Kee, 171 Mich. 551, 561, 137 N.W. 260, 265 (1912) ("a patient suffering from such an injury on calling a physician is entitled to approved methods of treatment from which experience of the profession indicates beneficial results are probable and to be anticipated; and, if not an entire recovery, a better ultimate condition than if left to chance.").

98. *But see* Walden v. Jones, 439 S.W.2d 571, 575 (Ky. 1969) (where the court refused to interpret *Burk* this way).

99. 483 F. Supp. 581 (N.D. Cal. 1980).

100. Cancer which has invaded the mediastinum is inoperable. *Id.* at 583. However, testimony established that had the cancer been operable when it was first discovered, the plaintiff would have had a 10-15% chance of survival for a five-year period. *Id.* at 585.

101. The court stated that "[a]n individual may be compensated for any aggravation of his injury or shortening of his lifespan proximately caused by the defendant's negli-

"[n]o matter how small that chance may have been—and its magnitude cannot be ascertained—no one can say that the chance of prolonging one's life or decreasing suffering is valueless."[102]

The policy reasons for allowing the plaintiff to recover for the loss of a less-than-even chance of survival were discussed in *Herskovits v. Group Health Cooperative of Puget Sound.*[103] In that case, the physician failed to timely diagnose the decedent's lung cancer. When the cancer was diagnosed six months later, the decedent's five-year chance of survival had decreased from thirty-nine percent to twenty-five percent.[104] The court held that the physician was liable for depriving the decedent of this chance, upholding the underlying policy of not allowing one who put such a chance beyond realization to say afterward that the result would have occurred anyway.[105] "To decide otherwise would be a blanket release from liability for doctors and

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gence, even though other factors contributed to or caused the initial condition." *Id.* at 586 (citations omitted).

102. *Id.* at 587. The courts have become increasingly more aware of the value of one's life. *See, e.g.,* Coleman v. Garrison, 349 A.2d 8 (Del. 1975) ("wrongful birth" case). In denying the parents the right to recover because a life *exists,* the court stated, "we firmly believe the right of their child to live is greater than and precludes their right not to endure emotional and financial injury." *Id.* at 13. The court went on to say that "the value of a human life outweighs any 'damage' which might be said to follow from the fact of birth, and recovery on any such thesis would violate . . . public policy . . . ." *Id.* at 13-14. Similarly, public policy advocates recognition of the value of a chance to live. *See generally* Smith, *Psychic Interest in Continuation of One's Own Life: Legal Recognition and Protection,* 98 U. PA. L. REV. 781 (1950) (discussing the legally protectable interest in the continuation of one's life).

103. 99 Wash. 2d 609, 664 P.2d 474 (1983). See the concurring opinion of Justice Pearson, reviewing the various cases which have decided this issue and discussing the policy considerations involved. *Id.* at 619-36, 664 P.2d at 479-87 (Pearson, J., concurring).

104. *Id.* at 612, 664 P.2d at 475. In addition to outwardly adopting the "loss of a chance" theory, the opinion in *Herskovits* is consistent throughout in its reasoning, providing perhaps the best available example of how and why a chance should be valued. Referring to the decedent's reduction in chance from 39% to 25%, the court properly recognized that this was a *36%* reduction in the decedent's *chance* of survival, rather than making the common mistake of calculating this reduction as a 14% decrease (as did the medical expert in his testimony), which relates to the physician's degree of causation of the actual *death. Id.* at 614, 644 P.2d at 476. To clarify this point, consider this formula:

$\frac{a-b}{a} \times 100 =$ % of loss of chance of survival where:

a = original chance of survival;

b = diminished chance of survival resulting from physician's failure to diagnose promptly; thus:

$\frac{39-25}{39} = \frac{14}{39} \times 100 = 35.9\%$ loss of chance of survival.

105. *Id.*

hospitals any time there was less than a 50 percent chance of survival, regardless of how flagrant the negligence."[106]

The major reason for the courts' reluctance to allow a patient to recover for the loss of a less-than-even chance appears to be their fear that juries may award damages which are too conjectural, speculative, or remote.[107] Rather than speculation, however, what is actually involved here is simply difficulty in ascertaining the "value" of a "chance." This difficulty, however, is not a valid reason for denying an injured patient the right to recover from a culpable physician. In order to adhere to the fundamental principle that for every wrong committed there should be a remedy, some degree of speculation is necessary. The United States Supreme Court has commented that "[i]t is no answer to say that the jury's verdict involved speculation and conjecture. Whenever facts are in dispute or evidence is such that fair-minded men may draw different inferences, a measure of speculation and conjecture is required . . . ."[108]

Because a major reason for compensating a patient for the loss of a chance of survival is to allow for a more just allocation of this loss, the method of valuation utilized in calculating the value of such a chance needs to be predictable.[109] One author feels that a percentage probability test is such a method.[110]

To better illustrate this method, reconsider the hypothetical previously propounded in the introduction and assume that the patient died from his lung cancer. Regardless of whether the physician caused his patient's ultimate death, he did cause his patient's loss of a forty percent chance to recover and survive. Under the percentage

106. *Id.* at 614, 664 P.2d at 477. *See generally* King, *supra* note 1; Wolfstone, *supra* note 3.

107. *See supra* note 16 and accompanying text.

> Damage is said to be remote, when, although arising out of the cause of action, it does not so immediately and necessarily flow from it, as that the offending party can be made responsible for it. . . . The first, and in fact the only inquiry . . . is whether the damage complained of is the natural and reasonable result of the defendant's act; it will assume this character if it can be shown to be such a consequence as, in the ordinary course of things, would flow from the act. . . .

Mortgage & Agreement Purchasing Co. v. Townsend, 56 D.L.R. 637 [1920], *varying* [1920] 3 W.W.R. 7 (quoting J. MAYNE, A TREATISE ON THE LAW OF DAMAGES 33 (1856)).

108. Lavender v. Kurn, 327 U.S. 645, 653 (1946). *See also* James v. United States, 483 F. Supp. 581, 587 (N.D. Cal. 1980) ("damages may be recovered even if they are not susceptible to accurate measurement."). This notion has been recognized in contract cases, as well. *See, e.g.,* Caminetti v. Pacific Mut. Life Ins. Co. of Cal., 23 Cal. 2d 94, 102-03, 142 P.2d 741, 745 (1943) ("The courts are not so impotent that they will permit a total loss of such a right merely because of a claimed uncertainty or difficulty in determining the extent [of damages].").

109. *See* King, *supra* note 1, at 1382.

110. *Id.* Under this method, the compensable chance would be the percentage probability by which the physician's negligent conduct diminished the likelihood of his patient's survival. *Id.* For an example of an equation using this method, see *supra* note 104.

probability test, the plaintiff's compensation for the loss of the decedent's chance of recovery and survival would be forty percent of the compensable value of the decedent's life had he survived.

The value placed on the decedent's life would involve the weighing of several factors. These include his age, his family history, his personal habits, his occupation, his past health, his earning capacity, and the survival rate for those suffering with this same condition.[111] The forty percent calculation would then be applied to the figure representing the value of the decedent's life to arrive at the amount of the plaintiff's compensation.[112]

Thus, difficulty in calculating damages cannot be a viable reason for withholding recognition of the right to an unimpaired chance for survival or for refusing compensation when this right has been wrongfully impaired.[113] "Common-sense justice is, of course, the most desirable objective inherent in the application of any legal concept; and where the application of a legal concept so clearly results in injustice, it is incumbent upon the courts to examine the concept and its applicability most carefully."[114]

V. CONCLUSION

Courts have traditionally denied a patient redress for the loss of a

111. *Id.*

112. Those courts which recognize one's right to recover for the loss of a chance have also allowed a plaintiff to recover for the decedent's mental anguish resulting from the awareness of the lost opportunity to survive. *See James*, 483 F. Supp. at 587. *See also* Smith, *supra* note 102, at 803, which discusses three distinct items of damage which may result from the wrongful shortening of one's life expectancy: mental anguish resulting from the awareness that one's chance to survive has been diminished, reduction of prospective earnings, and loss of a future.

For an excellent and more thorough analysis on the percentage probability approach in valuing a chance, see King, *supra* note 1, at 1381-87. *See also* Note, *supra* note 2, at 878-85. Both life and annuity tables can also be utilized in assessing the value of a chance. *See* C. MCCORMICK & W. FRITZ, CASES AND MATERIALS ON DAMAGES 278 (2d ed. 1952).

113. The fear that the jury will place too much emphasis on statistics or fail to understand how they were arrived at does not support a "blanket exclusion of statistical data, however. Our court system is premised on confidence in the jury to understand complex concepts. . . ." *Herskovits*, 99 Wash. 2d at 639, 664 P.2d at 489. *See also* MCCORMICK, *supra* note 16, at § 31 (the jury is capable of the complex tasks of comparing data and assessing probabilities).

114. DeNike v. Mowery, 69 Wash. 357, 366, 418 P.2d 1010, 1017 (1966). *Accord* Coons, *Approaches to Court Imposed Compromise—The Use of Doubt and Reason*, 58 NW. U.L. REV. 750, 750 (1964) ("[a]ny judicial system involves continuing accommodation between the need to preserve a coherent set of ordering principles and the quest for tolerable results in individual disputes").

chance for survival where the ultimate result would probably have occurred due to his preexisting injury or disease in the absence of a physician's negligent misdiagnosis or treatment. In cases where a greater-than-even chance existed, the courts have in actuality found the physician liable for causing the patient's *death or debilitation,* rather than for reducing the patient's *chance of survival or recovery.*

Even those courts which have allowed a patient to recover for the loss of a less-than-even chance have made the same mistake. By relaxing the long-adhered-to "but for" causation standard of proof, these courts have held by implication that the damage sustained by the patient was the actual loss of life or health, not the loss of a *chance.*

Traditional causation principles need not be abandoned, however, in order to allow redress to an innocent and aggrieved patient. Rather, the courts should treat the loss of the *chance* as the true injury suffered and value this chance accordingly.

In light of the rapid increase in medical knowledge and technology, and with the increasing public awareness of disease prevention and detection, the American courts should heed Benjamin Cardozo's admonition:

> There should be greater readiness to abandon an untenable position when the rule to be discarded may not reasonably be supposed to have determined the conduct of the litigants, and particularly when in its origin it was the product of institutions or conditions which have gained a new significance or development with the progress of the years.[115]

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115. Wilson v. Johns-Manville Sales Corp., 684 F.2d 111, 120 n.46 (D.C. Cir. 1982) (quoting B. CARDOZO, THE NATURE OF THE JUDICIAL PROCESS 151 (1921)).