HEINONLINE

Citation: 13 J. Legal Stud. 1 1984



Content downloaded/printed from
HeinOnline (http://heinonline.org)
Thu Jun 12 10:43:58 2014

-- Your use of this HeinOnline PDF indicates your acceptance
of HeinOnline's Terms and Conditions of the license
agreement available at http://heinonline.org/HOL/License

-- The search text of this PDF is generated from
uncorrected OCR text.

-- To obtain permission to use this article beyond the scope
of your HeinOnline license, please use:

https://www.copyright.com/ccc/basicSearch.do?
&operation=go&searchType=0
&lastSearch=simple&all=on&titleOrStdNo=0047-2530

THE SELECTION OF DISPUTES FOR LITIGATION

GEORGE L. PRIEST and BENJAMIN KLEIN***

I. The Problem and Some Earlier Attempted Solutions

This paper addresses the relationship between litigated disputes and disputes settled before or during litigation. The specification of this relationship is important for the analysis both of the legal system and of the influence of the legal system on society. Virtually all systematic knowledge of the legal system derives from studies of appellate cases. Appellate cases, of course, provide the most direct view of doctrinal developments in the law. Few scholars today, however, are content to study doctrinal developments alone without regard to the broader influence of legal rules on social affairs. Appellate cases may tell us which disputes courts find troublesome and which they find easy to decide. But this doctrinal information discloses very little about how legal rules affect the behavior of those subject to them or affect the generation of legal disputes themselves.

If all legal disputes, or even a random sample of these disputes, were tried to judgment and then appealed, the inference from legal rules to social behavior would be straightforward. The facts of appellate cases

* Professor of Law, Yale University. Support for my work was provided by the Institute for Civil Justice, The Rand Corporation, and the Program in Civil Liability, Yale Law School, for which I am very grateful. I wish to thank participants of many workshops over several years as well as Henry B. Hansmann, Jack Hirschleifer, A. Mitchell Polinsky, Tim Quinn, Samuel Rea, James F. Strnad II, Rick Victor, and Kenneth I. Wolpin for helpful comments on earlier drafts. I also am grateful to Jean Gold, Richard Gruber, Wayne Jones, Mary Kloepfer, William Lundquist, Kenneth Landau, Anthony Leavy, and Carol Maue for valuable assistance in the compilation of the various data presented here, and to Paul McGuire for computer help.

** Professor of Economics, University of California, Los Angeles. I am grateful for a Sloan Foundation Grant to UCLA for financial support. The authors wish to thank Kevin M. Murphy for useful comments in formulating the model and Robert Hansen for research assistance.

[*Journal of Legal Studies*, vol. XIII (January 1984)]
© 1984 by The University of Chicago. All rights reserved. 0047-2530/84/1301-0008$01.50

would indicate all the types of social problems requiring legal resolution. Differences over time in the types of problems appealed would show how changes in legal rules affect these problems and thus how rules influence behavior. It is well known, however, that only a very small fraction of disputes comes to trial and an even smaller fraction is appealed. In a study of insurance company claims files, H. Laurence Ross reports that, of his sample, only 4.2 percent of claims ultimately reached trial and 0.2 percent of claims were appealed.[1] In a more comprehensive survey of police automobile accident reports, Alfred Conard *et al.* find that 0.7 percent of accident victims press their claims to trial and only 0.09 percent of victims appeal trial verdicts.[2] It is very difficult to infer specific characteristics from observations of 0.2 percent or less of a population, especially where there is no evidence that the observations (the disputes selected for appeal) were selected randomly.

Many legal scholars have expressed concern about the peculiar sample of cases that reach trial and appeal, but none has developed an accepted means to adjust analysis of appellate data in response to the problem. Karl Llewellyn, for example, regarded litigated cases as "pathological": bearing the same relation to the broader set of disputes "as does homicidal mania or sleeping sickness, to our normal life."[3] Llewellyn attempted to obtain a broader view of the legal system from his studies of appellate decisions by disregarding leading decisions and, instead, sampling in a manner that approaches randomness. Llewellyn studied "the cases in sequence as they stand in the reports" (that is, for example, the first 94 pages of New York reports from 1842)[4] or decisions rendered by a court on a "single opinion-day" (that is, for example, all decisions rendered by the Pennsylvania Supreme Court on March 20, 1944).[5] These decisions represented to Llewellyn the "mine-run stuff as it comes unselected from the mine."[6] Llewellyn's methodological innovations, however, have not appeared attractive to modern legal scholars. His approach ignores completely doctrinal innovations of any individual court (thus, Llewellyn could address only the process and not the substance of judicial decision making). And few accept his implicit assumption that legal doc-

[1] H. Laurence Ross, Settled out of Court: The Social Process of Insurance Claims Adjustments 216 (1970).

[2] Derived from Alfred F. Conard, James N. Morgan, Robert W. Pratt, Jr., Charles E. Voltz, & Robert L. Bombaugh, Automobile Accident Costs and Payments: Studies in the Economics of Injury Reparation 155, 241 (1964) (hereinafter cited as Conard).

[3] K. N. Llewellyn, The Bramble Bush: On Our Law and Its Study 58 (1960).

[4] Karl N. Llewellyn, The Common Law Tradition: Deciding Appeals 6, 64–68 (1960).

[5] *Id.* at 92–96.

[6] *Id.* at 6.

trine is meaningless. Yet Llewellyn cannot transcend the prospect of the legal system provided by the appellate bench.

In a more recent effort, William Whitford studied the impact that the adoption of the strict liability standard has had on automobile manufacturers and consumers. Reaching beyond leading cases, Whitford studied every reported decision in the period 1960–67 in which auto defects were involved (including cases involving only procedural issues).[7] Whitford, however, despaired of the representativeness of even a census of decisions,[8] which he supplemented with interviews with consumers, employees of dealers and manufacturers, and attorneys involved in auto litigation.[9]

Most legal scholars, however, either ignore the problem of the representativeness of appellate decisions or presume representativeness. The most common presumption is that the facts of disputes that reach trial or, more commonly, appeal resemble the facts of disputes that are settled. Richard Posner, for example, inferred the efficiency of nineteenth-century negligence law from the observation that there were no cases within his large appellate sample in which parties to a contract agreed to a standard of liability different from the legal standard.[10] Posner's conclusion requires the presumption that there are no cases involving alternative liability standards that were settled prior to appeal.[11]

Similarly, it is very common to infer the influence of a legal standard or the attitudes of judges or juries toward plaintiffs or defendants by observing the proportion of cases in which plaintiffs recover verdicts.[12] In the classic *The American Jury,* for example, Kalven and Zeisel purport to

[7] William C. Whitford, Strict Products Liability and the Automobile Industry: Much Ado about Nothing, 1968 Wis. L. Rev. 83, 102–3. For other surveys of a universe of appellate decisions, see Richard A. Posner, A Theory of Negligence, 1 J. Legal Stud. 29 (1972); and George L. Priest, Breach and Remedy for the Tender of Nonconforming Goods under the Uniform Commercial Code: An Economic Approach, 91 Harv. L. Rev. 960 (1978).

[8] Whitford, *supra* note 7, at 103–4.

[9] *Id.*

[10] Posner, *supra* note 7, at 74.

[11] There may have been no litigated cases because it was clear to the parties that courts would give effect to any voluntary agreement, because the alternative standards drafted by the parties were unambiguous, or because no party found appeal of a trial court decision involving such an agreement worthwhile. See, for evidence of voluntary agreements, Richard A. Epstein, The Historical Origins and Economic Structure of Workers' Compensation Law, 16 Ga. L. Rev. 775, 787–97 (1982).

[12] See for example, Jerome Frank, Law and the Modern Mind 112 (1930). Indeed, in an earlier paper, one of us concluded that case-law interpreting the Uniform Commercial code is consistent with an efficiency standard from the observation that the rate of plaintiffs' victories on appeal seemed responsive to differences in the costs of detecting breach of contract. Priest, *supra* note 7, at 997–98.

measure the extent of differences between jury and bench trials by comparing respective rates of plaintiff victories in civil cases and respective rates of conviction in criminal cases.[13] Kalven concludes that the finding that plaintiffs recover verdicts in 55 percent of personal injury cases tried to juries proves that juries are not "monolithically pro-plaintiff," but rather tend to follow the equities of the individual case.[14] The Supreme Court has inferred the procedural fairness of a disability benefits system from a near 50 percent rate of reversals of benefit denials.[15] The presumption underlying these inferences is identical. For the rate of plaintiff verdicts to be an accurate measure of the influence of a legal standard, of judicial or jury attitudes, or of the substantive fairness of any adjudicatory process, litigated disputes must be representative of the entire class of underlying disputes.

This paper presents a model of the litigation process that clarifies the relationship between the set of disputes settled and the set litigated. According to our model, the determinants of settlement and litigation are solely economic, including the expected costs to parties of favorable or adverse decisions, the information that parties possess about the likelihood of success at trial, and the direct costs of litigation and settlement. The most important assumption of the model is that potential litigants form rational estimates of the likely decision, whether it is based on applicable legal precedent or judicial or jury bias. From this proposition, the model shows that the disputes selected for litigation (as opposed to settlement) will constitute neither a random nor a representative sample of the set of all disputes.

In particular, the standard of decision will influence the observed rate of success of plaintiffs and defendants in litigation only partially. If disputes were selected for litigation randomly, then the rate of plaintiff verdicts would differ as the standard of decision becomes more or less favorable to plaintiffs.[16] Our model, however, demonstrates that, where the

[13] Harry Kalven, Jr., & Hans Zeisel, The American Jury, passim (1966), discussed *infra*.

[14] Harry Kalven, Jr., The Dignity of the Civil Jury, 50 Va. L. Rev. 1055, 1072 (1964).

[15] Richardson v. Perales, 402 U.S. 389, 410 (1971). But see Mathews v. Eldridge, 424 U.S. 319, 346 (1976) ("Bare statistics rarely provide a satisfactory measure of the fairness of a decision-making process," although accepting general inference). The Supreme Court has also concluded that the standards applied by six- and twelve-person juries are substantively indistinguishable from observing comparable rates of plaintiff success. Colgrove v. Battin 413 U.S. 149, 159–60 & n. 15 (1973), discussed in text at notes 100–115 *infra*.

[16] The selection question has not been considered explicitly in earlier treatments of the litigation-settlement decision. However, the approach of Landes and Posner, who developed the dominant model of litigation (from which our model derives), suggests that disputes will be selected randomly. See William M. Landes, An Economic Analysis of the Courts, 14 J. Law & Econ. 61 (1971), and Richard A. Posner, An Economic Approach to Legal Proce-

gains or losses from litigation are equal to the parties, the individual maximizing decisions of the parties will create a strong bias toward a rate of success for plaintiffs at trial or appellants at appeal of 50 percent regardless of the substantive standard of law.[17] Thus, plaintiff victories will tend toward 50 percent whether the legal standard is negligence or strict liability, whether judges or juries are hostile or sympathetic. The model also specifies the economic conditions that lead plaintiffs' success rates to differ from 50 percent.

Section II of the paper first presents the basic model and derives the 50 percent implication. Then, an important assumption of the basic model is relaxed to consider the set of cases in which the stakes of the dispute are different for the parties, as, for example, where a single consumer sues a manufacturer whose future practices will be affected by the outcome. Section II shows that the relative stakes to the parties will greatly influence the rate of success in litigation and are likely to be the principal reason why success rates differ from the 50 percent baseline. Finally, Section III presents data bearing on the model's implications, data deriving from our own empirical investigations and from the major empirical studies of the legal system of the past fifty years.

This article builds on an insight of earlier papers by Priest that defined the selection hypothesis and discussed the influence of private decisions

---

dure and Judicial Administration, 2 J. Legal Stud. 399 (1973). According to the Landes-Posner model, the principal determinant of litigation is the absolute difference between the parties' estimates of the likelihood of success. Thus, the parties will litigate if their estimates differ by, say, 5 percent, where 5 percent times the stakes in the case exceeds the difference between joint litigation and settlement costs. Obviously, a 5 percent difference in estimates is just as likely to generate litigation, whether the plaintiff and defendant estimate the plaintiff's chances, respectively, as .95 and .90 or .10 and .05. Posner and Landes assume—reasonably—that differences in the parties' estimates will be distributed randomly. *Id.* at 423–26. It follows that cases litigated will represent a random sample of the set of underlying disputes. Thus, if the underlying set of disputes is such that if every dispute were litigated, plaintiffs would win 30 percent of the time, the Landes-Posner approach predicts that a 30 percent success rate will be observed at trial. This conclusion is made explicit in Posner, *supra* note 7, at 92. For the contrasting predictions of our model under these conditions, see Table 2 *infra*.

[17] In a recent paper, Baxter independently intuits that plaintiffs will win approximately 50 percent of the time. The Political Economy of Antitrust: Principal Paper by William Baxter 16 (Robert M. Tollison ed. 1981) (hereinafter cited as Baxter). Baxter's hypothesis derives from an assumption similar to that of Posner and Landes, *supra* note 16, that disputes, in general, will be litigated randomly, coupled with Baxter's personal assumption that the standard of decision is defined such that plaintiffs would win 50 percent of the time if all disputes were litigated. See Baxter, *supra* at 16 (explaining 50 percent result) and *id.* at 18 (rejecting hypothesis that the true decision standard differs from 50 percent). Since currently there is no basis for believing that the decision standard bisects the distribution of disputes (see Figure 1, *infra*), Baxter's 50 percent conclusion is insupportable. Baxter, however, describes the influence of different stakes to the parties in a manner very similar to ours. See text at notes 120–29, *infra*. Some of Baxter's statistics are reinterpreted *infra*, at note 129.

to settle or litigate on the formal content of the law.[18] One of these papers demonstrated that where litigation costs are substantially greater than settlement costs, the bias toward 50 percent plaintiff victories makes the formal structure of the law appear indeterminate to any scientific, empirical method of observing judicial decisions.[19] This article refines that implication, but it goes further. First, it defines with substantially greater precision and completeness the determinants of the selection effect. Second, it derives empirical implications of the selection hypothesis that are less qualitative and hence more easily observable, such as success rates in litigated cases, addressed in Section III. Finally, it defines empirical relationships between litigated and settled cases; litigation costs, settlement costs, and expected judgments; sets of disputes and legal standards; and changes in the parties' information about the law over time and across legal subject areas—relationships which have been only dimly perceived in the past. We hope, therefore, that the article will provide the basis for a wide and diverse range of new empirical investigations into the operation of the legal system.

II. The Selection Model and Its Implications

A. *Preliminary Assumptions*

Disputes and Verdicts. We define a "dispute" as any occasion in which a plaintiff asserts a claim for some injury against a defendant.[20] A dispute may be resolved either by a verdict after trial or by a settlement at any time prior to a verdict. For our purposes, a dispute will be regarded as "litigated" only if a verdict is rendered; all terminations of the dispute short of a verdict are regarded as "settlements."[21] All trial verdicts constitute the relevant set of disputes for appeal. We presume that the deci-

[18] George L. Priest, The Common Law Process and the Selection of Efficient Rules, 6 J. Legal Stud. 65 (1977), and Selective Characteristics of Litigation, 9 J. Legal Stud. 399 (1980) (hereinafter cited as Priest, Selective Characteristics).

[19] Priest, Selective Characteristics, *supra* note 18, at 410.

[20] The model can also incorporate claims for equitable relief (potential injuries).

[21] Our definition is chosen to correspond with available data. Though it is more common to regard a dispute as "litigated" if trial has begun—even if settled prior to a verdict—we know of no data with respect to cases settled during trial. Our model could be extended to consider settlement during trial—or at other points between the injury and verdict—if assumptions are made concerning the sequential acquisition during these periods of information relating to the outcome. We have no firm basis for such assumptions (however, compare the suggestive discussion in Baxter, *supra* note 17, at 14–15) and thus consider as "litigated" disputes never settled.

sion to appeal a trial verdict is in all respects identical to the decision to litigate a dispute.

If a verdict is rendered in favor of the plaintiff, the defendant (who is "liable") is required to pay to the plaintiff some amount called the judgment. If, in contrast, the defendant prevails at trial (a verdict of "not liable" or "no liability"), he pays nothing to the plaintiff, who suffers the alleged loss without compensation. The assumption of solely verdict/no verdict judgments means that we do not consider regimes such as comparative negligence in this paper.[22] Initially, we ignore asymmetric gains to the plaintiff or losses to the defendant from a verdict. In a later section, however, we will show that asymmetric returns have substantial significance to the selection process.[23]

Finally, we assume that the distribution of initial disputes is determined exogenously and that the parties behave nonstrategically with respect to litigation and settlement, that is, as if their actions have no effect on current or future actions of the other party. The model, then, may be viewed as a one-period model of dispute resolution.

The Decision Standard. An important objective of the paper is to determine how the standard of decision at trial or appeal influences the choice between litigation and settlement. For this purpose, we will presume that standards exist for resolving disputes, and that judges or juries apply specific standards consistently in disputes of one type or another. So long as it is consistent, the decision standard may be based on legal precedent or, say, the personal bias (for example, racial prejudice) of a judge or jury.[24] It is unnecessary to assume that the decision standard is constant across judges or juries, although we do assume that a standard will be applied consistently by a given judge or jury.

To illustrate our assumption of the consistent application of a decision standard, let us array a set of similar disputes, for example, automobile-

[22] Although we have not formally developed this proposition, we do not believe that the 50 percent implication will hold for comparative negligence regimes. For discussion of a related point, see Section II*D*.

[23] See text at notes 51–57 *infra*.

[24] This assumption is not critical, since our model allows for infinite (but to some extent predictable) variation in the standards applied by different individual judges or different individual juries or in the application of standards by these judges or juries to different cases. The principal implication of the model is derived, in general, without regard to the substantive standard of decision. Because our model allows (at the maximum) each judge or jury to define its own standard in each case (from which the parties estimate the likelihood of success), a concept of a judicial or jury decision standard that varied would have no meaning. On the other hand, it is necessary for us to assume that the decision standard is independent of the specific dollar amounts or damages at stake in the dispute.

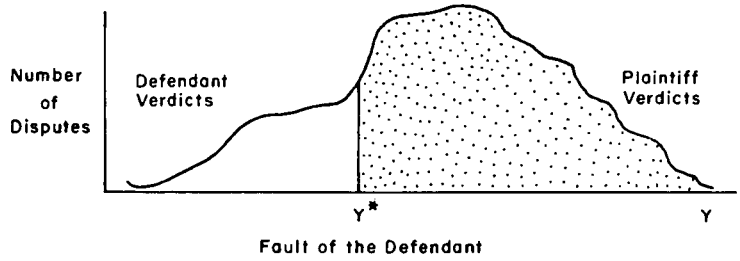


FIGURE 1.—Distribution of automobile-pedestrian collision disputes

pedestrian collisions, according to a scalar measure Y that describes the relationship between the relevant characteristics of the dispute and the decision standard.[25] For purposes of the illustration, let Y be a measure of the level of fault of the defendant-driver in the collision leading to the claim.[26] Figure 1 presents a distribution of disputes incorporating every automobile-pedestrian collision claim. Thus, $Y = H(X)$, where X refers to the specific facts or characteristics of a type of dispute—here, the facts relevant to the evaluation of the defendant's fault—and $H(X)$ represents the interpretation function of these facts to the appropriate decision standard—that is, the determination of some level of fault from a particular set of facts or circumstances.

This distribution of disputes is divided into two parts at some particular value, Y^*. The shaded part, to the right of Y^*, consists of disputes in which a verdict for the plaintiff (liability) is returned; the unshaded part, to the left of Y^*, consists of disputes in which a defendant verdict (no liability) is returned.

The point Y^* thus can be interpreted as representing the value of the set of relevant characteristics of disputes—here, that level of fault—just sufficient to lead a judge or jury to render a decision for the plaintiff. The linear measure Y shows the relationship of the characteristics of individual disputes to those of the decision standard, Y^*. We assume that all plaintiffs and defendants know the decision standard Y^*.

[25] It is irrelevant whether Y represents a continuously variable standard or a discrete standard such as, say, paternity (where the only possible values are one and zero). As long as multiple characteristics are relevant to the interpretation of the standard (in paternity cases: blood type, access, acquiescence, etc.), a continuously variable set of characteristics related to the standard can be defined.

[26] For simplicity we presume no affirmative defenses are available, although the concept of decision standard can be easily expanded to consider even a constellation of individual legal issues which aggregate in the mind of the jury or judge to allow a judgment of liability or no liability.

The Formation of the Parties' Expectations. Assume that a particular dispute is randomly drawn from the distribution of disputes given in Figure 1 and that the characteristics of the dispute have some true value in terms relevant to the legal standard of Y'. The judge or jury need not determine precisely the true Y' of the dispute, but only whether Y' is greater or less than Y^*, the decision standard.[27] Nevertheless, the parties must estimate Y' in order to predict the likelihood of liability should a trial take place. In this part, we ignore all issues of damages; that is, we presume damages are stipulated.

Prior to trial, neither litigant can know with certainty which party will subsequently prevail. Each potential litigant forms an estimate of Y' based upon his individual knowledge of the facts of the dispute and his prediction of how these facts will be interpreted by the court or jury. For several reasons, a party's estimate of Y' may differ both from the estimate of the opposing party and from the true Y' value of the dispute. Some of the facts or circumstances of the dispute may not be available before trial, or they may be developed in an unexpected manner during the trial itself. In addition, the parties may not be able to calculate exactly how the decision standard will be applied to the particular dispute, that is, the form of the interpretation function, $H(X)$. These sources of uncertainty in the prediction of the legal outcome, of course, will be known to the parties. We assume that each party forms an estimate of Y with the understanding that there is likely to be error attending the estimate.

If we define $\hat{Y}_p$ as the plaintiff's estimate of the Y value of the dispute and $\hat{Y}_d$ as the defendant's estimate of the Y value of the dispute, then the parties will form expectations for any given dispute:

$$\hat{Y}'_p = Y' + \epsilon_p \tag{1a}$$

and

$$\hat{Y}'_d = Y' + \epsilon_d, \tag{1b}$$

where ϵ_p and ϵ_d are assumed to be independent random variables with zero expectation and identical standard errors, σ_ϵ. By this formulation, we presume that each party forms an independent, unbiased estimate of the true Y of the particular dispute, Y'.

[27] To focus on the decision by the parties to settle or litigate the dispute, we abstract from the process by which a judge or jury discovers and interprets the facts, and assume that litigating parties cannot influence the true Y value of the dispute. This assumption allows us to avoid consideration of problems of strategic behavior by the parties, although strictly interpreted it would imply no reason for either litigant to spend resources on litigation beyond the minimum necessary to file and appear in court. The litigants, of course, might expend resources to obtain a more precise estimate of the true Y in order to determine an appropriate settlement offer.

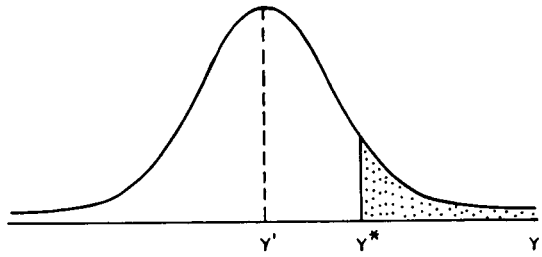


FIGURE 2.—Sampling distribution of plaintiff's estimates of the verdict, Y_p, conditional on the true Y equal to Y'.

This model can be illustrated in the following way. First, assume that the particular dispute drawn from the distribution given in Figure 1 has a true Y, Y', significantly to the left of Y^* and thus would generate—if litigated—a defendant (no liability) verdict. We assume that the sampling distributions of the estimates of Y for both parties will be centered around this true Y in the sense that their expected values (the average of the samples) will be equal to this true value—$E(\hat{Y}_p) = E(\hat{Y}_d) = Y'$—and that the standard error of this sampling distribution is σ_ϵ. Figure 2 represents this sampling distribution for one of the parties (the plaintiff) and the relationship of this distribution to the underlying decision standard, Y^*.

In Figure 2 the location of Y' makes it unlikely that the plaintiff in sampling will obtain a point estimate of Y greater than or equal to Y^*. Nonetheless, the particular $\hat{Y}_p$ obtained by the plaintiff may be to the right of Y^*, if ϵ_p is positive and large enough in absolute value. The likelihood that $\hat{Y}_p$ will be greater than Y^* is indicated by the shaded area.

If we shift now to the plaintiff's estimate of Y for a particular dispute, assume that the plaintiff obtains a point estimate $\hat{Y}'_p$ of the true Y, Y' of the particular dispute. From his estimate of the distribution of the error term, the plaintiff will determine a confidence interval around the point estimate defining the range of estimates that include the true Y, Y', with any given probability. Figure 3 represents this statistical relationship for the particular case where the plaintiff estimates Y with a positive ϵ_p, that is, $\hat{Y}'_p > Y'$.

In Figure 3, $\hat{Y}'_p$ indicates the mean value of the plaintiff's estimate of Y in the particular case. The distribution around $\hat{Y}'_p$ reflects the plaintiff's estimated error in predicting Y for the dispute and, thus, his uncertainty as to the value of the true Y. The unshaded area in Figure 3 represents that portion of the distribution of the plaintiff's estimate of Y that corresponds to the chance of a defendant verdict ($Y < Y^*$), and the shaded area represents the chance of a plaintiff verdict ($Y > Y^*$). In Figure 3, although $\hat{Y}'_p < Y^*$, that is, although the plaintiff's best estimate is that the defendant will prevail, the probability that the true Y is greater than Y^* corresponds

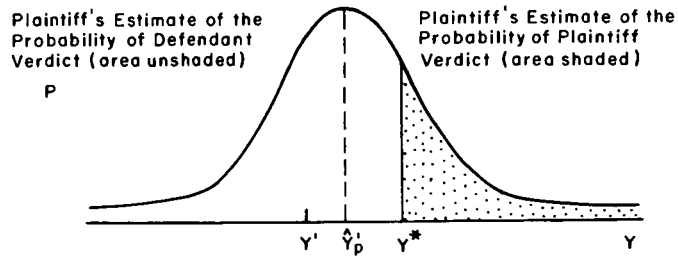


FIGURE 3.—Probability distribution around the plaintiff's estimate for the individual dispute.

to the probability that the plaintiff's error in estimating Y is sufficiently large that the true Y, Y' is $\geq Y^*$. Thus, the plaintiff's estimate of the probability of a plaintiff verdict, $\hat{P}_p$, is represented by the shaded area of the distribution to the right of Y^*. A distribution similar in nature could be described and a similar area defined for the defendant's estimate of the probability of a plaintiff verdict, $\hat{P}_d$.

To define the area described in Figure 3 more rigorously, we first assume that Y^*, the value just sufficient for a plaintiff verdict, is zero. (The problem is invariant to such a normalization. It merely shifts the density of Y^* until $Y^* = 0$.) Therefore, each party's estimate of the probability of a plaintiff (liability) verdict, given his particular estimate of Y, is equal to his estimate of the probability that the true Y is positive:

$$\hat{P}_p = P(Y' \geq 0 \mid \hat{Y}'_p) \tag{2a}$$

and

$$\hat{P}_d = P\,(Y' \geq 0 \mid \hat{Y}'_d). \tag{2b}$$

From equations (1a) and (1b), these conditional probability estimates are equivalent to the probability that the error associated with each party's particular estimate of a liability verdict is less than the estimate,

$$\hat{P}_p = P(\epsilon_p < \hat{Y}'_p) \tag{3a}$$

and

$$\hat{P}_d = P(\epsilon_d < \hat{Y}'_d). \tag{3b}$$

Hence, in this model, each party, given his particular estimate of Y, must know the distribution of the error term associated with his point estimate in order to estimate the probability of a liability verdict. If the distribution of ϵ_p is assumed to have a mean of zero and standard error σ_ϵ, the probability estimated by the plaintiff of a liability verdict, $\hat{P}_p$, is given by the area to the left of $\hat{Y}'_p$, or

$$P_p = F_p(\hat{Y}'_p), \tag{4a}$$

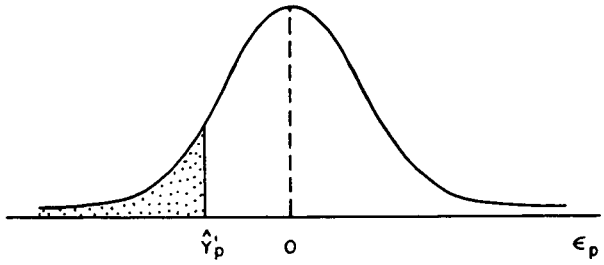


FIGURE 4.—Distribution of plaintiff's error term

and similarly,

$$P_d = F_d(\hat{Y}'_d), \tag{4b}$$

where F_p and F_d are the cumulative distribution functions of ϵ_p and ϵ_d, respectively.[28] See Figure 4.

B. *The Process of Selection: Equivalent Stakes to the Parties*

Settlement Negotiation. We shall adopt a simple formulation of the decision to litigate or settle a dispute.[29] The plaintiff's minimum settlement demand (A, or asking price) and the defendant's maximum settlement offer (B, or bidding price) may be represented as follows:

$$A = P_p(J) - C_p + S_p \tag{5a}$$

and

$$B = P_d(J) + C_d - S_d, \tag{5b}$$

where J is the expected judgment should a plaintiff (liability) verdict be rendered; C_p and C_d are litigation costs to the plaintiff and defendant, respectively, assumed arbitrarily to be set at "optimal" levels;[30] and S_p and S_d are the respective settlement costs. Note that we describe the stakes of the dispute to the parties solely in terms of the expected judgment, J. This initial assumption is sufficient to make the stakes symmetrical to the parties. The assumption, however, implies that the verdict will have no effect on the subsequent behavior of the potential litigants them-

[28] To know the distribution of ϵ, litigants must know not only past values of the true Y in similar cases but past values of the estimates of Y, $\hat{Y}_p$, and $\hat{Y}_d$ in such cases. (For example, knowledge of settlement bids and offers in addition to final judgments is necessary.) Information of this nature, of course, is not generally published, thus experienced (large, long established) law firms can be expected to have a comparative informational advantage.

[29] Similar to that adopted by Landes, *supra* note 16, and Posner, *supra* note 16.

[30] See note 27 *supra*.

selves, and so may be particularly inappropriate with respect to the settlement of disputes considered for appeal.[31] Note also that the assumption implies no disagreement between the parties over the amount of the judgment.[32]

A sufficient condition for litigation is that the plaintiff's minimum demand (A) exceed the defendant's maximum bid (B). This condition may be rewritten from equations (5a) and (5b) as

$$P_p - P_d > \frac{C - S}{J} \tag{6}$$

where $C = C_d + C_p$ and $S = S_d + S_p$. Although not strictly necessary for the model, we adopt some further restrictions of these variables to illustrate most clearly the selection process.[33] We assume that litigation costs to the parties are greater than settlement costs and, thus, that $(C - S)/J$ is greater than zero.[34] Furthermore, we assume that $(C - S)/J$ is less than one. If $(C - S)/J$ were greater than one (that is, if the difference between litigation and settlement costs were greater than the expected judgment), a dispute would never be litigated because $P_p - P_d$ can never exceed one. Thus, we set D equal to $(C - S)/J$ and adopt the reasonable assumption that $0 < D < 1$ in what follows. This restriction implies only that the parties can gain more by settling than by litigating a dispute, and will do so unless they differ to an extent greater than D in their expectations of the outcome.

The Selection Process Described. If both parties can predict Y with equal precision (that is, equal error variance), although subject to independent errors, then, from (4a) and (4b), $P_p - P_d = F_p(\hat{Y}_p) - F_d(\hat{Y}_d)$ where the F's are the cumulative distributions of the two error terms. This is to say that the difference between the plaintiff's and defendant's estimates of the likelihood of a plaintiff victory relates to the difference between the error terms of their estimates of Y. Figure 5 shows this difference graphically.

This formulation shows that the difference in the parties' estimates of the outcome will be related to the distance between their estimates of the

[31] The peculiar characteristics of appellate cases are discussed *infra* at notes 56–57.

[32] Considered in text at notes 57–58 *infra*.

[33] A discussion of the effect on the selection process of a relaxation of these assumptions appears in Priest, Selective Characteristics, *supra* note 18, at 417–20.

[34] If $C - S < 0$, then it would be cheaper to litigate than to settle, and hence, even if the plaintiff and defendant had identical estimates, they would litigate the dispute. Our assumption can be justified empirically because if $C - S \leq 0$, over 50 percent of disputes would be litigated. As noted in the text at notes 1–2, *supra*, typically less than 5 percent of civil disputes actually are litigated.

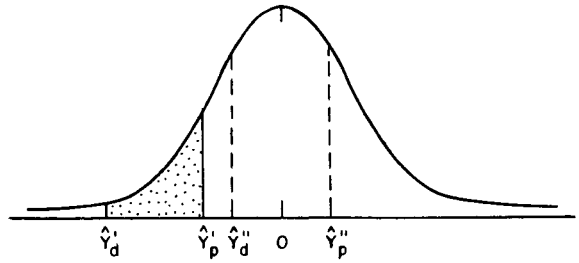


FIGURE 5.—Differences between the plaintiff's and defendant's estimates of the likelihood of a liability verdict.

Y value of the dispute and the decision standard. Areas such as that shaded in Figure 5 will be greater or less as the parties' estimates of the Y value of the dispute are closer to or farther from Y^* (in Figure 5, set at 0). In Figure 5, the parties estimate Y' to lie relatively far from the decision standard. Thus, that part of the plaintiff's error term corresponding to the likelihood of liability consists only of the tail of the distribution, and the analogous part of the defendant's error term is only slightly smaller. If, however, the Y value of the dispute were closer to Y^* (again, set at 0 in Figure 5), the respective portions of the plaintiff's and defendant's error terms corresponding to the likelihood of a plaintiff verdict would be much larger. An identical difference in the parties' error would generate a much greater difference in their estimates of the outcome. We need only compare in Figure 5, for example, the area under the distribution bounded by $\hat{Y}''_d$ and $\hat{Y}''_p$ (unshaded) which surrounds $0(Y^*)$, the decision standard, to the shaded area under the distribution bounded by $\hat{Y}'_d$ and $\hat{Y}'_p$, located much farther from the decision standard. The difference in error between the two estimates is identical. But the area covered is much greater between $\hat{Y}''_d$ and $\hat{Y}''_p$ because of the proximity of the estimates to the decision standard. As Figure 5 shows, for a given difference in the parties' error, the difference in their expectations of the outcome is largest where $\hat{Y}_d$ and $\hat{Y}_p$ are on equal and opposite sides of $Y^*(0)$, and decreases as $\hat{Y}_d$ and $\hat{Y}_p$ become increasingly greater or less than $\hat{Y}^*$.[35]

It follows from our rational expectations assumptions—that the parties' expectations are independent, unbiased, and on average equal to the true value of Y—that litigated disputes will not constitute a random sample of the underlying population of disputes, but instead will be concentrated more heavily among disputes with true Y's close to the decision standard,

[35] Figure 5 shows clearly that this result does not follow where the distribution of $\epsilon_{p,d}$ is uniform rather than normal.

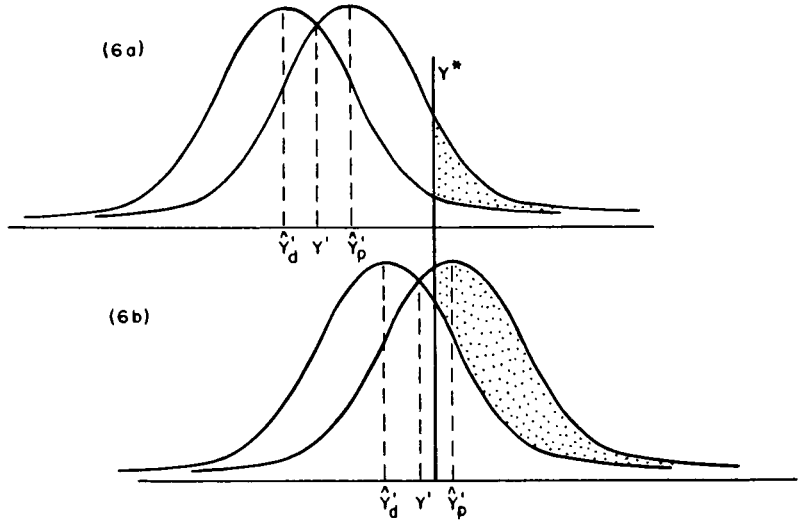


FIGURE 6.—Individual probability estimates of the parties

Y^*. The distribution of litigated disputes is proportional to the product of the distribution of the population of disputes and the probability of litigation for each Y. Thus, disputes with Y values far from the decision rule are relatively unlikely to be litigated because they are unlikely to generate differences in estimates of victory by the parties sufficient to exceed D. Put more simply, the greater the distance that the true Y lies from the decision standard, the lower the difference is likely to be between the parties' probability estimates of a plaintiff's verdict. On the other hand, the closer the true Y' lies to the decision standard, the more likely it is that the parties' estimates of the outcome will differ and that litigation will ensue.

Figures 6*a* and 6*b* illustrate the point by describing individual probability estimates of the parties. In the figures, the error of the parties in estimating Y is equivalent. The figures differ, however, in the distance between the true Y of the dispute, Y', and the decision standard, Y^*. In Figure 6*a*, the true Y lies far from the decision standard, and in Figure 6*b*, the true Y lies close to the decision standard. The probability estimates of the parties of a plaintiff victory are represented by those areas of the probability distributions of each party to the right of the decision standard. In both figures, the *difference* between the area of plaintiff's and defendant's distributions to the right of Y^*—that is, the difference between their estimates of a plaintiff verdict—is shaded. In Figure 6*a*, where the true Y lies far from the decision rule, the (shaded) difference in

the parties' probability estimates of a plaintiff victory is small. In Figure 6*b*, however, where the true *Y* of the dispute lies close to the decision standard, the (shaded) difference between the parties' probability estimates is much larger. Thus, the likelihood that the parties will litigate rather than settle the case is much larger.

Figure 6 illustrates how the settlement negotiations of potential litigants select disputes for litigation. Those disputes for which the true *Y* value lies far from the decision standard—whether in favor of the plaintiff or defendant—are more likely to be settled than litigated. The difference between the parties' probability estimates of the outcome is likely to be small, and thus the parties are more likely to be able to agree on settlement terms in order to save litigation costs. On the other hand, as the true *Y* value of a dispute more closely approaches the decision standard, the likelihood that the dispute will be litigated increases because the difference in the parties' probability estimates of the outcome is likely to increase. Thus, the chances diminish that terms of settlement will exist that are more attractive to both parties than litigation. It can be seen by examining Figure 6 that the difference between the parties' estimates of the outcome will be the greatest where the decision standard is equidistant between the plaintiff's and defendant's estimates.

The process modeled here by which disputes closer to the decision standard generate more uncertainty as to their outcomes and, thus, more disagreement between the parties explains in part the widespread practice of placing a betting "line" or handicap on a sporting event.[36] A betting line for, say, a football or basketball game is the number of points that a bookie is willing to add to the unfavored team's score in order to maximize betting. Where a powerful team is scheduled to play a weak one, there may be little uncertainty as to which team will win. If the only gamble available is win or lose, bettors will have little interest in the game. However, where for purposes of the bet a bookie can add a number of points to the weak team's ultimate score, he can generate greater uncertainty over the outcome. Though it may have been clear that the powerful team would win by some amount, it will be less clear that it will win by more than the margin offered by the bookie. Indeed, to generate the greatest interest in the game—which is to say, the greatest uncertainty—bookies strive to offer that number of points corresponding to the exact qualitative difference between the teams.[37] The bookie thus moves

[36] But see note 39 *infra*.

[37] Bookies, of course, must change the number of points offered as the betting becomes one-sided. Thus, in a sense, the market determines the qualitative difference between the two teams, just as the market determines the odds in horse racing.

the decision standard from the basic win-lose standard of the game itself, to lie equidistant between the expected abilities of the two teams. The establishment of a handicap for a sport, such as golf or bowling,[38] illustrates the same process.[39] Indeed, the frequent recourse to betting lines and handicaps in a wide range of social activities that involve predicting outcomes confirms the plausibility of our assumption about the shape of the parties' error terms.

In litigation, as in gambling, agreement over the outcome leads parties to drop out. There are no betting lines or handicaps for legal disputes. Plaintiffs win all or lose all.[40] Where either the plaintiff or defendant has a "powerful" case, settlement is more likely because the parties are less likely to disagree about the outcome. Settlement negotiations will most often fail, however, where the dispute is most problematic whatever the applicable decision standard.

The Selection toward 50 Percent Plaintiff Victories. The previous subsection demonstrated that disputes lying close to the decision standard are more likely to be litigated than disputes lying far from the decision standard. If the vast majority of litigated disputes lie close to the decision standard and the distribution of Y is continuous at the decision standard, the proportion of plaintiff victories in litigated disputes will approach 50 percent regardless of the position of the decision standard with respect to the underlying distribution of disputes.

To illustrate the idea, consider Figure 7, which, like Figure 1, represents a distribution of all disputes (say, auto collisions or product liability claims). Again, Y^* defines the decision standard: all disputes to the right—if litigated—decided for the plaintiff; all to the left, for the defendant. Obviously, if all or a random sample of disputes were litigated, plaintiffs would recover in litigation many more times than defendants. The proportion of disputes actually litigated, however, will be determined

[38] Golf or bowling handicaps represent a number of strokes or pins, subtracted from or added to a player's actual score. A handicap is set by taking an average of past performances of a player in relation to some basic standard. Thus, when the handicap correction is made, players of unequal ability can compete fairly.

[39] Of course, odds are another method of adjusting for qualitative differences between teams. In principle, odds and points are equivalent techniques except in two respects. Scoring methods differ across sports. Where the number of scores per game is very low (baseball, hockey), points may not provide a sufficiently continuous measure to allow equalization of quality differences. Thus odds are a preferable method. Odds are also preferable, of course, where scoring is only roughly cumulative (tennis). On the other hand, points provide more continuous interest for the bettor in the outcome over the entire period of the event; where the win-lose outcome is clear by, say, the first period, the odds bettor has no further interest in the game. To the extent betting is complementary to spectator enjoyment, points would be preferred.

[40] Again, we abstract from regimes such as comparative negligence.

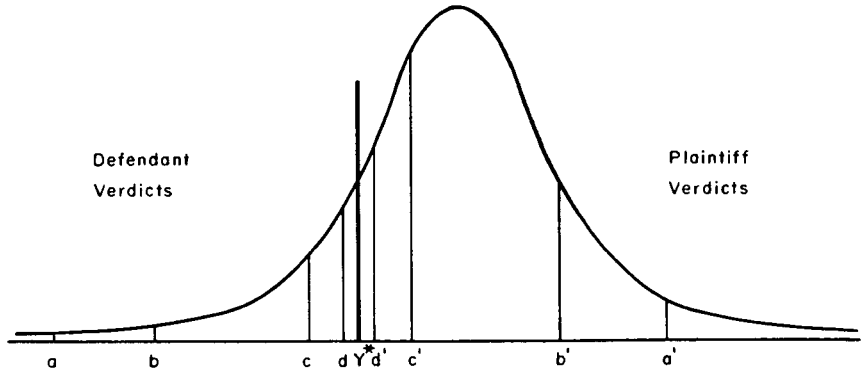


FIGURE 7.—Distribution of disputes

by the difference between the parties' expectations of the outcome and, thus, by the error terms of the parties' estimates of Y. As the parties' error terms, $\sigma_{\epsilon_{p,d}}$ are reduced, the proportion of all disputes litigated will decline and the proportion of victories in litigation for plaintiffs will approach 50 percent.

Figure 7 illustrates the convergence toward 50 percent plaintiff victories as the parties' error diminishes.[41] The four sets of intervals (a, a'; b, b'; c, c'; d, d') around the decision standard Y^* correspond to different levels of the parties' error. If, for example, all disputes between a and a', but no cases outside this interval, were litigated, there would be many more plaintiff than defendant victories. However, as the parties' error terms diminish, so that litigated disputes diminish from interval a, a' to interval b, b', and then to c, c' and d, d', the proportion of plaintiff's victories in litigation diminishes as the level of litigation is diminished. As the error terms of the parties become very small, and litigated cases are confined to those within the interval d, d', the areas on either side of Y^* converge, so that in the limit the frequency of plaintiff victories in litigation approaches 50 percent. If Figure 7 corresponded to a normal density with mean 0 and standard deviation 1 and (a, a'), (b, b'), (c, c'), and (d, d') corresponded to intervals of length 6, 4, 1, and 0.5 standard deviations, respectively, then with Y^* equal to $-.85$, the corresponding probabilities of plaintiff verdicts would be .80, .77, .59, and .55. In the limit, the proportion of victories for plaintiffs will approach 50 percent exactly.

It is important to note that the frequency of victories for plaintiffs in litigated disputes is influenced only partially by the substantive content of

[41] Unlike Figure 1, Figure 7 is drawn as a normal distribution arbitrarily, in order to demonstrate numerically the parameters of the selection process.

the decision standard. If Figure 7 described the distribution of, say, product liability claims involving equal stakes to the parties, as the error of the parties diminishes and the litigation rate declines, the proportion of plaintiff victories will approach 50 percent whether the decision standard is set at a Y value corresponding to a negligence standard or moved to a Y value corresponding to a strict liability standard. The critical determinant of litigation and of the rate of success of plaintiffs or defendants is the error of the parties in predicting Y. If the error variance in predicting Y is small and approximately equal for the two parties, then the probability of victory will be close to 0.5. This condition is likely to be met if the plaintiff and defendant possess information that is on average of equal precision, and if the application of legal standards is, on the whole, coherent and predictable.[42]

There are four separate implications of this approach. First, to the extent of the cost advantage of settlement over litigation, there will be a tendency toward a plaintiff's success rate in litigated cases of 50 percent which will be unrelated to the position of the decision standard or to the shape of the distribution of disputes.[43] This implication will be refined in the next section. Second, an important determinant of the extent to which the observed success rate approximates 50 percent will be the parties' error in estimating the outcome. As the parties' error diminishes, the 50 percent proportion of victories will be approached more closely. Since, for example, we would imagine error to diminish with experience under a legal standard, the approach would imply a progressive convergence toward 50 percent victories after a change in a rule of law.[44] Third, the tendency toward 50 percent plaintiff victories is closely related to the litigation rate. As the parties' error diminishes, the proportion of disputes litigated declines and the proportion settled increases. Thus, other things

[42] If the errors are independent and identically distributed, with a symmetric density and finite variance, then in the limit as the variance tends to zero, the proportion of litigated cases won by either party goes to 0.50. Intuitively, the distribution of plaintiffs' errors to overestimate success is the same as the distribution of defendants' errors to underestimate plaintiffs' success (that is, approximately half of those disputes litigated will be attributable to plaintiffs' overestimates and half attributable to defendants' underestimates). More generally, even if the sufficient symmetry condition is not met, our important theoretical point holds: in the limit, litigation probabilities and success rates will converge to a function given by the error terms and not by the distribution of disputes. For a formal demonstration of the conditions necessary for 50 percent plaintiff victories, see Kevin M. Murphy, A Note on Limiting Frequencies in Litigation (1983) (unpublished manuscript, Univ. Chicago).

[43] We define "success" in litigation in the text at notes 57–58 *infra*.

[44] For there to be a convergence, of course, the change in law must be of some definite dimension. To the extent that a new legal rule represents only an intermediate step in some larger process of change, one would not expect immediate convergence. The more stable the step—however intermediate—the greater the likelihood of convergence.

equal, as the litigation rate declines, the proportion of plaintiff victories in litigation will more closely approach 50 percent.[45]

Fourth, these implications and the selection process are a function also of the other determinants of the litigation-settlement decision: litigation costs, settlement costs, and the size of the judgment. These relationships are shown in equations (5) and (6).[46] Other things equal, there will be greater selection by the parties—and, thus, a lower litigation rate and a closer convergence to equivalent plaintiff-defendant victories—where $(C - S)/J$ is large: where litigation costs are high relative to settlement costs and where the judgment is low relative to these costs.[47] To take extreme cases, where litigation costs are lower than settlement costs or where judgments are exceedingly large, all or most disputes will be litigated and the proportion of plaintiff victories will equal those of the distribution as a whole, not necessarily 50 percent. Finally, we must emphasize again that this discussion and especially the 50 percent implication derive from the assumption of symmetric stakes to the parties from litigation. This assumption is useful for understanding the selection mechanism, although when relaxed, some specific implications of the process—in particular, the 50 percent implication—are altered.

A Refinement of the Theory. Although the model has demonstrated a *tendency* toward 50 percent plaintiff victories in litigation which is independent of the shape of the underlying distribution of disputes, the 50 percent success rate will actually be achieved only near the limit. Figure 7 suggests that, short of the limiting case, the shape of the dispute distribution and the position of the decision standard can affect the observed success rate in a more constrained way. According to the model, given some error in the parties' estimates of Y', an interval will exist around the decision standard which will contain some large fraction of the set of litigated disputes. The range of the interval, of course, will be defined by the parties' errors in predicting Y. As the separate intervals in Figure 7 show, however, the precise rate of success in litigation will depend on the ratio of the areas on opposite sides of the decision standard. The rate will equal 50 percent exactly only when these areas are exactly equal.

Figure 8 illustrates more clearly how the shape of the distribution of underlying disputes in the area of the decision standard affects the success rate and the speed of convergence toward 50 percent. In Figure 8, the interval $(-a, a)$ is determined by the errors of the parties' estimates of Y

[45] According to the model the proportion of plaintiff victories approaches 50 percent in the limit as the parties' error approaches zero and as litigation approaches zero.

[46] Notes 29–33 *supra*.

[47] These relationships are discussed in more detail in Priest, Selective Characteristics, *supra* note 18, at 417–20.

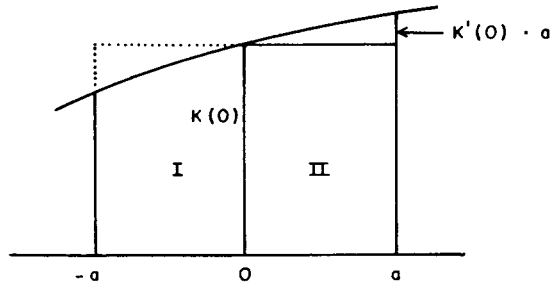


FIGURE 8

and is assumed to describe an arbitrarily large fraction of the disputes that will be litigated. Area I represents those disputes in which the defendant will prevail ($Y < Y^*$); area II, those in which the plaintiff will prevail ($Y \geq Y^*$). $K(0)$ is the height of the distribution at zero and $K'(0)$ is the slope which for convenience we approximate as constant over the interval. The ratio of plaintiff-defendant victories in litigation is determined by the ratios of areas II and I. In Figure 8, area I $= a \cdot K(0) - \frac{1}{2}a \cdot K'(0)a$, and area II $= a \cdot K(0) + \frac{1}{2}a \cdot K'(0)a$.

The ratio of area II to area I is therefore equivalent to

$$\frac{\text{area II}}{\text{area I}} = \frac{a \cdot K(0) + a/2 \cdot K'(0)a}{a \cdot K(0) - a/2 \cdot K'(0)a}. \tag{7}$$

This ratio converges to one (and therefore to 50 percent victories) as

$$\frac{\frac{K(0)}{K'(0)} + \frac{a}{2}}{\frac{K(0)}{K'(0)} - \frac{a}{2}} \text{ converges to one.}$$

The foregoing shows that for a given a, the greater the height of the distribution ($K(0)$) relative to the slope ($K'(0)$), the closer this ratio will be to one and the closer the proportion of plaintiff victories will be to 50 percent. Put another way, as $K(0)/K'(0)$ increases, the slope of the distribution at the decision standard will appear relatively flatter for a given height.[48] As a consequence, the ratio of plaintiff-to-defendant victories

[48] Where Y, the distribution of disputes, is uniform, plaintiffs should win 50 percent of the time because there is no slope to the dispute distribution. Simulations where Y is uniform, $\sigma_{\epsilon_{p'd}} = 0.25$, $\sigma_Y = 1$, $(C - S)/J = 0.33$, 4,000 observations for Y^* (decision standard) set at 0.35, 0.8, 1.2, 1.6, 1.9, and 2.5 standard deviations yield plaintiffs' success rates in litigated cases of 49.1, 45.0, 48.8, 51.9, 48.2, and 54.1 percent, respectively. Compare row 5, Table 1, *infra*.

TABLE 1
SIMULATIONS OF THE MODEL, NORMAL DISTRIBUTION OF Y, VARIED LOCATIONS OF THE DECISION STANDARD, $E(Y)$

	(1)	(2)	(3)	(4)	(5)	(6)
1. Decision standard, $E(Y)$	0	.3	.5	.7	1.0	1.5
2. $\sigma_{\epsilon_{p'd}}$	.25	.25	.25	.25	.25	.25
3. % of disputes litigated	6.3	6.0	5.3	5.7	3.7	2.1
4. % of plaintiff victories in population	49.9	39.1	30.4	24.7	16.5	7.3
5. % of plaintiff victories in litigated disputes	52.0	49.2	44.1	42.1	40.3	31.4

NOTE.—For all results, $\sigma_Y = 1$, $(C - S)/J = .33$, 4,000 observations (disputes).

will approach one without a reduction in $\sigma_\epsilon/$, that is, without a reduction in the interval a which derives from the error of the parties' estimates. Of course, as shown above, as the error in the parties' estimates and therefore as a diminishes, regardless of the height or slope, equation (8) will approach one.

Thus, the shape of the dispute distribution and the position of the decision standard will have some effect on the rate of plaintiff victories in litigated disputes. There will always persist a tendency toward 50 percent plaintiff victories regardless of the shape of the distribution or the position of the standard. The proportion of plaintiff victories in litigation will always be closer to 50 percent than that of disputes within the distribution as a whole. Nevertheless, where the height of the distribution is low—such as where a very small set of disputes occurs in some area of law—or where the slope of the distribution at the decision standard is extreme, plaintiff victories in litigation may diverge markedly from 50 percent. For normal distribution of disputes, as in Figure 7, if the decision standard intersects the distribution to the left of the midpoint—that is, where $E(Y) < 0$—the proportion of plaintiff victories will be greater than 50 percent; whereas, if the standard intersects the distribution to the right of the midpoint—$E(Y) > 0$—the proportion of plaintiff victories in litigation will be less than 50 percent.

Simulations of the Selection Model. This section reports simulations of the model that illustrate its selection and convergence properties. Table 1 shows the extent to which the selection process limits the influence of the position of the decision standard. For the simulations reported in Table 1, Y, ϵ_p, and ϵ_d are assumed to be normally distributed with $\sigma_Y = 1$, $\sigma_{\epsilon_p} = \sigma_{\epsilon_d} = .25$, and $(C - S)/J = .33$.[49] For each column, 4,000 observations—disputes—were run.

[49] The amount of the most common contingency fee in personal injury litigation.

TABLE 2
SIMULATIONS OF THE MODEL, NORMAL DISTRIBUTION OF Y, VARIED LEVEL OF PARTIES' ERROR, σ_ϵ, GIVEN TWO ALTERNATIVE VALUES OF $E(Y)$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Decision standard, $E(Y)$	.5	.5	.5	.5	1.5	1.5	1.5	1.5
2. $\sigma_{\epsilon_{p'd}}$	1	.5	.25	.1	1	.5	.25	.1
3. % of disputes litigated	15.4	9.7	5.3	2.3	10.2	4.3	2.1	.7
4. % of plaintiff victories in population	29.9	30.7	30.4	31.2	6.3	6.5	7.3	6.3
5. % of plaintiff victories in litigated disputes	33.7	40.5	44.1	47.3	12.9	20.5	31.4	46.4

NOTE.—For all results, $\sigma_Y = 1$, $(C - S)/J = .33$, 4,000 observations (disputes).

Columns 1 through 6 demonstrate how the litigation rate and the proportion of plaintiff victories change as the decision standard is moved increasingly away from the midpoint of the distribution. Where the decision standard is set at the midpoint (column 1), 6.3 percent of all disputes are litigated and plaintiffs win 52 percent of them (row 5). As the decision standard is moved farther to the right, increasing the distance between the decision standard and a larger proportion of the distribution of disputes, the litigation rate (row 3) diminishes. Where the decision standard lies at the tail of the distribution (column 6), only 2.1 percent of disputes are litigated.

The simulations also demonstrate the bias toward equal plaintiff-defendant verdicts. For the various positions of the decision standard, row 4 shows the proportion of plaintiff victories if all disputes were litigated, and row 5 shows the proportion of plaintiff victories in litigated disputes. Where the decision standard is set at 0.7 standard deviations (column 4), if all disputes were litigated, plaintiffs would prevail in 25 percent; of those actually litigated, they prevail in 42 percent. Even where the standard is set at 1.5 standard deviations (column 6), where plaintiffs would win only 7.3 percent if all disputes were litigated, plaintiffs prevail in 31 percent of those actually litigated. Although, given the extreme value of $E(Y)$, this proportion is significantly different from 50 percent, the bias introduced by the selection process is evident.

Table 2 illustrates the influence of different levels of error of the parties in their estimates of the outcome on the selection process. In Table 2, the decision standard is set at two different positions: 0.5 standard deviations—columns 1 through 4—corresponding to a plaintiffs' success rate of about 30 percent if every dispute were litigated; and 1.5 standard deviations—columns 5 through 8—corresponding to a plaintiffs' success rate of 6–7 percent if every dispute were litigated. For each of these two

settings, we simulate litigation while progressively diminishing the parties' error from 1 to 0.5 to 0.25 to 0.1 standard deviations (row 2).

Where the parties' error in estimating Y is relatively high (for example, $\sigma_\epsilon = 1$, columns 1 and 5), the success rate in litigation is significantly different from 50 percent. The selection process still has some influence on outcomes: the success rate for plaintiffs is 34 and 13 percent in litigated disputes as opposed to 30 and 6 percent for the entire dispute distribution. Error values of this magnitude, however, lead to high and empirically unrealistic litigation rates: 15 and 10 percent, respectively (row 3).

As σ_ϵ is reduced, the litigation rate decreases (row 3) and the proportion of plaintiff victories in litigation converges toward 50 percent (row 5). Where $\sigma_\epsilon = 0.1$, even with the decision standard set at 1.5, plaintiffs prevail in litigation 46.4 percent of the time (row 5), a result different from exactly 50 percent by only one of the twenty-eight disputes in the simulation run which would have been litigated. The substantial power of the selection process is apparent.

Note that only one run simulated a rate of litigation corresponding to the 1 percent or less than 1 percent rate that prevails in actual civil litigation today.[50] And that result was achieved by the assumption of an extreme position of the decision standard (compare, for example, columns 4 and 8). If our actual civil liability standards are less extreme than assumed in Table 2, then the low rate of litigation actually observed suggests a level even lower than 0.1 in the parties' error. Put more simply, the low litigation rate that we observed in our society implies a highly predictable legal system with extraordinarily well-informed litigants or attorneys.[51]

C. *The Selection Process: Asymmetric Stakes to the Parties*

The implications of the model to this point derive from the assumption that the stakes of the relevant disputes are symmetric to plaintiffs and defendants. Let us now relax that assumption. In civil cases involving legal rather than equitable remedies, the amount the loser suffers or pays (the judgment) is the amount the winner avoids paying or gains. There are many situations, nevertheless, in which the resolution of the dispute affects one of the parties beyond the dollar amount at stake alone. Many disputes implicate the activities or practices of one of the parties but not the other. With respect to some disputes, for example, the loss of the case may damage the defendant's public reputation. For example, a firm ac-

[50] Conard, *supra* note 2.

[51] See Tables 4 and 5 *infra*.

cused of manufacturing a blatantly defective product (as Ford was accused with respect to the Pinto) may face a substantial loss in future sales if a jury returns an adverse civil liability verdict. Similarly, an adverse antitrust judgment may require a defendant firm to change an existing sales practice or marketing technique and so increase its costs. In situations of this nature, the dollar judgment sought by the plaintiff may reflect only a small portion of the defendant's total loss if the plaintiff wins. Thus the amount at stake to the parties differs, and the assumption from which the 50 percent implication derives is violated.

To consider the effects of differential stakes, let J_p and J_d represent the stakes of the dispute to the plaintiff and defendant, respectively. Equations (5a) and (5b) can be amended so that the difference between the plaintiff's settlement demand (ask, or A) and the defendant's settlement bid (B) is

$$A - B = P_p J_p - P_d J_d + S - C. \tag{8}$$

The selectivity inequality becomes

$$P_p J_p - P_d J_d > C - S. \tag{9}$$

If we let $\bar{J} = (J_p + J_d)/2$, $\bar{P} = (P_p + P_d)/2$, and $\Delta J = J_d - J_p$, inequality (9) can be rewritten showing the condition for litigation as

$$P_p - P_d > \frac{C - S}{\bar{J}} + \bar{P}\frac{\Delta J}{\bar{J}} \tag{10}$$

where $P = (P_p + P_d)/2$. It is obvious from this formulation that when the stakes are equivalent to the parties, $\Delta J = 0$; thus $J_d = J_p = \bar{J}$, and the selectivity equation reduces to its form in the basic model.

The reformulation shows how differences in the stakes to the parties influence the likelihood of litigation. When ΔJ is positive—that is, when the stakes are greater to the defendant than to the plaintiff—the right-hand side of inequality (10) is smallest where $\bar{P}$ is small. Hence, litigation is relatively more likely where the plaintiff has a small probability of winning and the defendant has a large probability of winning. Thus, where the stakes are greater to defendants than to plaintiffs, relatively more defendant than plaintiff victories ought to be observed in disputes that are litigated. The results are reversed where the stakes are greater for the plaintiff.

Differential stakes to the parties will also affect the rate of litigation. Where the stakes are greater for defendants than plaintiffs, ΔJ is positive and the right-hand term of inequality (10) is relatively greater than where the stakes to the parties are equal by the amount of $\bar{P}$ $(\Delta J/\bar{J})$ (compare

inequality (6)). As a consequence, litigation requires an increasingly greater difference between the parties' expectations of success ($P_p - P_d$), and the rate of litigation will decline. Of course, of those disputes that actually are litigated, defendants will win more than 50 percent and plaintiffs less than 50 percent.

In contrast, where the stakes are greater for plaintiffs than defendants, the opposite consequences follow: ΔJ is negative; thus the right-hand side of inequality (10) is relatively less than where the stakes to the parties are equal by $\bar{P}\ (\Delta J/\bar{J})$. Again, compare inequality (6). Thus, smaller differences between the parties' expectations of success will be sufficient to generate litigation, and the rate of litigation will increase. Again, of those disputes litigated, plaintiffs are likely to win greater than 50 percent and defendants less than 50 percent.

Inequality (10) shows that under certain circumstances in which the stakes to plaintiffs are greater than to defendants, litigation may occur even if the parties agree on the expected outcome. If $\bar{P}\ (\Delta J/\bar{J})$ were of greater magnitude than (although opposite in sign to) $(C - S)/J$, the parties would litigate the dispute even if both expected precisely the same outcome. In such a dispute, the expected judgment to the defendant would be less than the minimum amount demanded by the plaintiff. Obviously, plaintiffs would win such disputes predominately. Where the stakes are greater for defendants, however, pressure is exerted in the opposite direction. For litigation to occur at all, the parties must disagree by greater amounts than where the stakes are equal.

A more intuitive way of understanding these implications is to consider the effect of differential stakes on the parties' bargaining over settlement. Where defendants stand to lose more from adverse verdicts than plaintiffs stand to gain, the relative calculus of the parties with respect to litigation and settlement changes. Defendants in general will be willing to offer greater amounts to settle disputes, but this effect will be relatively more pronounced for disputes in which defendants face a greater chance of losing and relatively less pronounced for disputes in which defendants face a greater chance of winning. As a consequence, relatively more disputes with likely plaintiff verdicts will be settled and relatively more disputes with likely defendant verdicts will be litigated. Observing only litigated cases, defendant verdicts will be greater than 50 percent. If we could observe all settlements, however, the magnitude of defendant payouts would be greater than where the stakes to the parties were equal.

Conversely, where plaintiffs stand to gain more from verdicts than defendants stand to lose, plaintiffs in general will increase their settlement demands, but will tend to increase them more in disputes in which plaintiffs have a relatively greater chance of winning than in disputes in which

TABLE 3
SIMULATIONS WITH DIFFERENTIAL STAKES, NORMAL DISTRIBUTION

	GREATER STAKES FOR PLAINTIFFS		GREATER STAKES FOR DEFENDANTS	
	(1)	(2)	(3)	(4)
Assumptions:				
J_p	100	200	50	50
J_d	50	50	100	200
Results:				
1. % of disputes litigated	51.2	59.6	2.7	.15
2. % of plaintiff victories in population	50.0	50.7	50.6	50.2
3. % of plaintiff victories in litigated disputes	78.3	76.3	38.7	22.2

NOTE.—For all results, $\sigma_Y = 1$, decision standard, Y^* set at 0; $\sigma_{\epsilon_{p'd}} = .5$; $(C - S)/J = .33$, 6.000 observations (disputes).

defendants have a relatively greater chance of winning. Indeed, plaintiffs may well refuse to accept generous (and in some cases even full) settlement offers from defendants in order to secure the judgments themselves. As a consequence, the proportion of observed plaintiff victories will exceed 50 percent. Where the stakes to plaintiffs are relatively greater, the level of plaintiffs' demands will increase generally (relative to defendants' bids or offers), and the rate of litigation will increase. Where the stakes to defendants are relatively greater, the level of defendants' bids (offers) will increase generally, and the rate of litigation will decrease.

The framework for the analysis of differential stakes can be extended to other features of litigation, such as differences in the attitudes of litigants toward risk. It is widely believed, as a general matter, that plaintiffs are more risk averse than defendants or, perhaps the same notion, that individual litigants are more risk averse than corporate litigants. Risk aversion, of course, depresses the expected value of probabilistic returns. Thus, the suit of a risk averse party against a risk neutral (or less risk averse) party, other things equal, can be described in our terms as litigation involving differential stakes. The risk neutral party has a relatively greater stake in the dispute than the risk averse party and so can be predicted to prevail in litigation more frequently.[52]

We present in Table 3 simulations illustrating the importance of differential stakes to the parties to the frequency of plaintiff verdicts and to the

[52] Of course, there remain substantial questions as to how important risk aversion is to litigation in a world in which contingent fees, which shift risk to attorneys, and market insurance are widespread but not universal.

rate of litigation. Columns 1 and 2 show disputes in which the stakes are relatively greater to plaintiffs than to defendants, in column 1 by twice and in column 2 by four times. Columns 3 and 4 show disputes in which the stakes are relatively greater to defendants than to plaintiffs, by twice and four times, respectively. The simulations were defined such that, for each run, plaintiffs would win 50 percent of the time if all disputes were litigated.

Columns 1 and 2 show that where the stakes are greater to plaintiffs than to defendants, plaintiffs win an overwhelming proportion of the time: from 76 to 78 percent of the time. In contrast, where the stakes are greater for defendants, defendants are predominately victorious. Where the stakes to defendants are twice those to plaintiffs (column 3), plaintiffs win 38.7 percent of litigated disputes (row 3); where the stakes to defendants are four times those to plaintiffs (column 4), plaintiffs win only 22.2 percent. The effect of differential stakes on the rate of litigation (row 1) is extraordinary. Where the stakes to defendants are twice and four times greater than to plaintiffs, the rate of litigation is relatively low: 2.7 and 0.15 percent of disputes, respectively. On the other hand, where the stakes are relatively greater for plaintiffs than defendants, the rate of litigation is unrealistically high: 51 and 60 percent, respectively.

Finally, we speculate in subsequent empirical sections about specific disputes in which the stakes to the parties are likely to differ, [53] but some more general comments might be offered here. Stakes are most clearly symmetrical where the parties seek solely a dollar judgment in a dispute over activities in which neither party ever expects to engage again. If, on the other hand, one of the parties expects to continue the specific activity leading to the dispute, the judgment in the current case will affect future behavior and thus extend beyond the dollar amount alone. For such disputes, the stakes almost surely will differ between the parties, because the alternative costs of their future activities are unlikely to be equal. Obviously, where one of the parties is engaged repeatedly in the activity leading to the dispute—a repeat-player in Galanter's terms[54]—the model predicts that this party will prevail more frequently in litigation for selection reasons alone.[55] This point suggests that the stakes to the parties are likely to differ in disputes over the terms of equitable decrees such as injunctions. More important, one would expect that in appellate disputes gener-

[53] Text at notes 83–84, 120–29 *infra*.

[54] Marc Galanter, Why the "Haves" Come out Ahead: Speculations on the Limits of Legal Change, 9 Law & Soc. Rev. 95 (1974).

[55] But see *id*. Galanter, of course, presumes, simplistically in our view, that a greater than proportional rate of success in litigation means that the repeat litigant is better off. See text at notes 51–52 for a more complicated discussion.

ally, for which the objectives of the parties most frequently are some favorable precedent, the stakes are likely to differ systematically.[56] As a consequence, although our model of settlement and litigation applies indistinguishably to trial and appellate disputes, we would expect the rate of appellant success to differ systematically from 50 percent.[57]

D. Fifty Percent of What?

To this point, the model's implications with respect to success rates have been presented simply in terms of the proportions of judgments entered for plaintiffs, without attention to more specific objectives of litigants. A plaintiff or defendant verdict is an unambiguous measure of victory only for disputes in which damages are stipulated and the only issue is whether the defendant is liable. Some litigation, however, does not fit this characterization. In some cases the controversy is over the extent of damages, and liability is either expressly conceded or mutually expected. Here, of course, a "victory" is represented by some numerical point along a continuum, and the simple evidence that some verdict was entered for the plaintiff has little relation to the parties' view of the outcome. Similarly, in trial cases in which the remedy is injunctive or in cases on appeal, the principal source of disagreement between the parties may be the wording of the injunction or of the controlling rule of law that the trial or appellate court will announce. Furthermore, it is artificial and perhaps misleading always to view the ultimate judgment itself as the principal source of disagreement leading to litigation. A trial, for example, can be described as consisting of a sequence of disputes—over jurisdiction, over discovery, over the choice of a jury, over motions to exclude evidence or challenge testimony. In this view, the verdict itself is only the final stage, substantially contingent upon the resolution of earlier issues.[58]

Ours is a general model of dispute resolution and—we believe—explains outcomes in each of these situations, whatever the source of disagreement between the parties. For the set of disputes litigated over the quantum of damages, say, in which the plaintiff expects a judgment of $150,000 and the defendant expects a judgment of $50,000, the model implies that, abstracting from effects on future behavior, verdicts will fall

[56] For a further discussion of the selection implications for equitable decrees and appellate litigation, see text at notes 83–84, 120–29 *infra*.

[57] Differential stakes to the parties may also arise in cases in which one of the parties is motivated by spite. However, for discussion of economic influences on spite litigation, see Priest, Selective Characteristics, *supra* note 18, at 420 & n. 89.

[58] Many cases are "settled" after trial has begun, of course, because of the resolution, prior to a verdict of these sources of disagreement.

within some narrow range with a median of $100,000. Similarly, for disputes over the terms of an injunction or a statement of law, the model implies that, given equivalent stakes, the terms chosen by the court will be intermediate or will favor plaintiffs as often as defendants, or, given differential stakes, will tend to favor those parties for whom the stakes are greater. The model, furthermore, will explain the outcomes of preliminary, but contested, issues of procedure or substance: the relative stakes of the issue to the parties can be defined as the importance each party places on the issue relative to the remaining issues in the case. These various circumstances present serious and, in some cases, probably insuperable problems of measurement. But, as we shall see in the next section, our model does suggest implications that can be measured with less than complete ambiguity. That we have not (yet) thought of ways to measure other implications should suggest the promise of the approach rather than its failing.

III. An Empirical Examination of the Theory

This section presents evidence bearing on the selection hypothesis. Subsection A presents data that we have compiled personally of recoveries in contested civil cases in a variety of legal areas. Subsection B reviews the findings of every empirical study that we have found that presents information on the outcomes of contested cases. These studies, of course, do not purport specifically to test hypotheses addressing rates of recovery; where the proportions of plaintiff victories are shown, they, typically, are shown incidentally. We distinguish these studies from our data in Subsection A because of our greater confidence in our identification of contested cases alone. Courts enter a multitude of judgments, only some of which follow contested trials. The 50 percent and differential stakes implications, however, are available only for outcomes that are contested. Thus, while the findings of the many other studies reported in Subsection B are suggestive, we cannot guarantee their appropriateness.

Finally, we must emphasize that measurement problems caution any conclusion that the selection hypothesis is confirmed by these data. According to our theory, the proportion of plaintiff victories in any set of cases will be influenced by the shape of the distribution of disputes, by the absolute magnitude of the judgment, and by litigation and settlement costs, as well as by the relative stakes to the parties. For none of the data reported here do we have definitive measurements of any of these variables. We have struggled to avoid tautologous explanation, but we suggest a cautious interpretation.

A. Recoveries in Contested Civil Cases: Authors' Data

Juror Attitudes over Time. In all jurisdictions, the pool of available jurors is drawn from current voters or residents and thus changes as the jurisdiction's voter or resident population changes. Over a period of years, demographic forces may alter substantially the age, occupational, or racial profile of any community. One would expect local demographic changes of this nature to influence the attitudes of those citizens selected for jury duty. Of course, over a substantial period of time, the attitudes even of identical jurors may change for other reasons. Finally, most students of the legal system would agree that juror decisions are influenced to some degree by controlling legal standards, which do not remain constant over time. The selection hypothesis, on the other hand, provides that litigants will take varying attitudes of jurors or differing legal standards into account in their settlement negotiations so that the proportion of observed plaintiff recoveries will tend to remain constant over time regardless of changes in the underlying standards applied.

Table 4 reports the proportion of plaintiff verdicts in contested civil actions tried to juries between 1959 and 1979 in the courts of Cook County, Illinois (incorporating the Chicago metropolitan area).[59] Of course, we have no specific metric of juror attitudes, although it would be extraordinary to assert that there were no or only negligible changes between the 1950s and 1980s. The reported outcomes are highly suggestive of the selection effect toward 50 percent outcomes.[60] The proportion of plaintiff victories is significantly different from 50 percent in only seven of the twenty-one individual years although, because of sampling, the significance test is heavily biased in favor of showing a significant difference.[61] And the proportion of victories is very close to 50 percent within

[59] The figures in Table 4 differ from figures presented in Mark A. Peterson & G. L. Priest, The Civil Jury: Trends in Trials and Verdicts, Cook County Illinois, 1960–1979 (1982) (hereinafter cited as Peterson-Priest) by our more careful refinement of contested cases alone. We exclude cases involving default judgments, directed verdicts, or cases in which liability was admitted by the defendant.

[60] Some fraction of cases recorded in Table 4 (as well as in Tables 5, 7, and 8) are likely to represent disputes over damages and thus spurious plaintiff victories. We have attempted to reduce the number of such cases, see note 59 *supra*. We cannot, at this point, determine the volume of such cases that remain. Disagreement over expected damages may be relatively less frequent in the Cook County courts than in other jurisdictions because of the very detailed information about damage recoveries recorded in the Cook County Jury Verdict Reporter. For a description of these data, see Peterson-Priest, *supra* note 59.

[61] We sampled one of four cases involving traffic accidents. Adjusting for sampling, the number of cases reported in Tables 4, 5, and 7 show roughly twice the total actually observed (for example, for Table 4 we observed 7,038 cases but reported 14,671). We tested the difference from 50 percent by using the inflated total, thus overstating difference from 0.50 by roughly 1.4 times. For each of the seven years except 1977, the uninflated proportion is not significantly different from 0.5.

TABLE 4
PROPORTION OF PLAINTIFF VICTORIES IN CONTESTED CIVIL CASES TRIED TO JURIES, COOK COUNTY, ILLINOIS, 1959–79

Year	Plaintiff Victories[a] (%)	Total Cases	Year	Plaintiff Victories[a] (%)	Total Cases
1959	51.1	239	1970	47.1	729
1960	51.1	465	1971	47.1	866
1961	45.2*	513	1972	44.1*	779
1962	45.5*	565	1973	47.7	771
1963	55.3*	947	1974	48.6	663
1964	52.6	813	1975	52.6	715
1965	52.7	769	1976	47.5	614
1966	51.3	973	1977	37.7*	572
1967	46.0*	951	1978	45.3*	643
1968	47.0	920	1979[b]	53.3	385
1969	47.7	779	Total	48.47*	14,671

SOURCE.—Derived from Cook County Jury Verdict Reporter. See Peterson-Priest, *supra* note 59, for a detailed description of data collection.

[a]Deadlocked verdicts are counted as ½ for plaintiff, understating their marginal character.

[b]Nine months only.

*Significantly different from 50 percent at a .95 confidence level. But see note 61.

all but one of those seven years (1977). The composite proportion for the twenty-one-year period is within 1.53 percentage points of 50 percent.

Jury Verdicts by Court of Disposition. Table 5 shows the rate of plaintiff verdicts, again in jury trials, according to the court in which the trial was conducted. The table distinguishes rates of success in state civil courts whose jurisdiction is limited in terms both of dollars and subject matter (Municipal Courts, column 1),[62] the state civil courts of unlimited dollar jurisdiction (Circuit Courts, column 2), and the U.S. District Courts with federal jurisdiction (column 3). Federal civil cases may be underreported.[63]

Although these are verdicts by juries rather than by judges, there is no reason to believe that the proportion of success of plaintiffs will be closely similar in the respective courts. The subject matters of the cases are different, the pool of jurors is different, and the judges directing the conduct of the trials are different for the respective courts. Of course, whatever differences there are among the courts operate in dimensions entirely different from the differences in composite verdicts over time reported in the previous table.

[62] The jurisdiction of Municipal Courts was limited to claims less than $10,000 between 1959 and 1962 and to claims less than $15,000 after 1962.

[63] See Peterson-Priest, *supra* note 59, at 61–63 for the close correspondence between our case tally and that of the Cook County Court Administrator.

TABLE 5
PROPORTION OF PLAINTIFF VICTORIES BY COURT OF DISPOSITION, COOK COUNTY, ILLINOIS, 1959–79

	MUNICIPAL COURT* (1)		CIRCUIT COURT† (2)		U.S. DISTRICT COURT (3)	
YEAR	% Victories	Cases	% Victories	Cases	% Victories	Cases
1959	66.1	56	48.3	147	38.9	36
1960	42.8	139	58.8	262	37.5	64
1961	44.4	223	44.7	263	57.4	27
1962	42.6	238	47.4	272	48.2	55
1963	52.7	244	56.1	651	57.7	52
1964	57.5	212	51.5	555	43.5	46
1965	66.1	165	48.4	553	55.9	51
1966	53.8	266	50.5	648	48.3	59
1967	45.5	309	45.6	613	60.3	29
1968	43.8	380	48.2	517	73.9	23
1969	39.2	260	50.5	479	68.8	40
1970	44.3	230	46.7	470	75.9	29
1971	46.9	322	47.7	514	40.0	30
1972	32.4	227	47.3	503	66.3	49
1973	39.6	255	51.5	477	53.8	39
1974	45.9	258	49.5	385	67.5	20
1975	47.6	269	56.2	409	48.6	37
1976	41.0	166	50.9	427	28.6	21
1977	34.0	209	38.3	341	63.6	22
1978	39.3	177	46.9	398	51.5	68
1979‡	54.5	99	53.0	264	50.0	22
Total all years	45.60	4,704	49.54	9,148	52.99	819

SOURCE.—Derived from Cook County Jury Verdict Reporter. See Peterson-Priest, *supra* note 59, for a detailed description of data collection.
*Includes magistrate and City Courts.
†Includes Superior and County Courts.
‡Nine months only.

The composite figures generally support the 50 percent implication. For all three courts, the composite rate of recovery is close to 50 percent and is extremely close for the Circuit Courts (column 2, 49.54 percent). Indeed, in the Circuit Courts, the proportion of plaintiff victories is close to 50 percent in most individual calendar years.

One relationship indicated in Table 5, however, seems inconsistent with a more specific implication of the selection hypothesis. As mentioned earlier, the model implies that as the stakes in a dispute are greater, smaller differences between the parties' expectations of success will be sufficient to generate litigation, and the proportion of all disputes actually litigated will be relatively greater.[64] Conversely, for disputes in which the

[64] See text at notes 46–48, *supra*. For a more extensive discussion of these implications, see Priest, Selective Characteristics, *supra* note 18.

stakes are relatively small, litigation will only occur if there are relatively greater differences in the parties' expectations of success. It follows that the selection effect should be greater for cases in which the stakes are relatively smaller. As a consequence, holding other factors constant, one ought to observe a closer convergence to 50 percent plaintiff victories for disputes with relatively small than relatively large stakes.

Table 5 does not support this implication. The jurisdictional limit of the Municipal Courts was (and is) uniformly lower than that of the Circuit Courts, yet the disparity from 50 percent victories is greater for the Municipal than for the Circuit Courts. The distinction between Municipal and Circuit Courts, however, does not provide the best available test of the hypothesis. In a future study, we will be able to test the stakes hypothesis more carefully by more discrete measures of the amounts and issues contested at trial.

There are, of course, a vast number of alternative hypotheses that might explain the relationships in success rates among these courts. Plaintiffs in the Municipal Courts tend to represent themselves more frequently than in the Circuit Courts which may explain the greater variance in yearly outcomes, but not the consistent less than 50 percent rate of recovery (except as pro se plaintiffs are more risk averse or more commonly one-shot litigants). As we shall see,[65] the plaintiff success rate differs substantially across legal subject areas in ways that make the summary statistics of Tables 4 and 5 only crudely informative. The different rates of plaintiff success in these respective courts may be explained by the different sets of cases tried there. At this point, however, the closer conformity of Circuit Court judgments to the 50 percent implication cannot be explained.

Judges' Attitudes. The data presented in Tables 4 and 5 consist solely of verdicts by juries. It might be thought that jury verdicts appear even-handed because individual biases are suppressed where a twelve-person jury must agree on a verdict[66] or because a lay jury is likely to decide cases in a roughly random manner. In this subsection we examine the rate of plaintiff verdicts in cases tried without juries, that is, in decisions rendered by judges. It is widely believed that the decisions of a single judge will reflect that judge's individual attitudes.[67] Indeed, the famous empirical demonstration by Jerome Frank in *Law and the Modern Mind*

[65] Table 7 *infra*.

[66] Most would imagine, however, that lay juries are more heterogeneous and that their verdicts are likely to be inconsistent over time.

[67] See, for example, Glendon Schubert, Judicial Policy Making: The Political Role of the Courts (1974).

TABLE 6
PLAINTIFF-DEFENDANT VERDICTS BY U.S. DISTRICT JUDGE, 1960–80

	NEGLIGENCE CASES			CONTRACT CASES		
JUDGE	For Plaintiff	For Defendant	Total Negligence Cases	For Plaintiff	For Defendant	Total Contract Cases
Caffrey	9	14	23	5	7	12
Thomsen	9	6	15	9	8	17
Weinfeld	10	8	18	4	4	8
Lord	8	8	16	4	3	7
Kaufman	3	5	8	2	1	3
Total all judges	39	41	80	24	23	47

SOURCE.—Derived from Lexis, Federal Supplement 1960–80.

of differences between individual judges of the New York City Magistrates' Court in criminal conviction and sentencing practices did much to lend credence to the realist view of litigation.[68] The selection hypothesis, on the other hand, presumes that the parties in settlement negotiations will anticipate the predilections of a judge, just as they would anticipate the application of a legal rule or the collective attitudes of a jury. Thus, the rate of success in contested civil bench trials similarly ought to tend toward equality among judges at 50 percent.

It is very difficult to obtain information on the decisions of individual judges with respect to contested trials. Table 6 presents results of a small sample of decisions by U.S. District Court judges in negligence and contract breach cases from 1960 to 1980, derived from Lexis. We selected negligence and contract breach disputes because the stakes in these cases are likely to be equal to the parties. The sample does not provide a perfect test of the hypothesis. Many district court decisions are rendered without a formal opinion; of course, we have obtained only reported decisions. Furthermore, although there is some specialization within the federal courts, it is difficult to find individual judges who, even over a long period, have decided and reported large numbers of cases in distinguishable civil categories. To obtain the sample, we selected randomly twenty judges who had served during this period, and examined the decisions of the five of the group with the largest number of reported negligence decisions. The sample was later extended to consider verdicts in contract-breach

[68] Frank, *supra* note 12, at 112. We distinguish the rate of success in criminal prosecutions and trials in the text at notes 117–20 *infra*.

cases by these same judges. The five judges are Andrew A. Caffrey (D. Mass.), Roszel C. Thomsen (D. Md.), Edward Weinfeld (S.D.N.Y.), Joseph S. Lord III (E.D. Pa.), and Frank A. Kaufman (D. Md.). We have no specific historical, political, or psychological information about any of the judges, although we imagine that there are some differences among them.

The results of Table 6 again suggest the presence of the selection effect. The largest difference from 50 percent appears in the negligence decisions of Judge Caffrey, although the difference may result from the small number of decisions; a shift of two of Caffrey's decisions would make eleven plaintiff and twelve defendant verdicts. No other judge (nor Caffrey with respect to contract breach cases) differed from the 50 percent implication by more than one decision. Furthermore, the totals for the five judges are striking.

It might be thought that an alternative hypothesis consistent with the findings of Table 6 is that these five judges are distinguished from other members of the federal trial judiciary by their exceptional fair-mindedness. It is, in fact, *because* of their unusually equitable dispositions that both plaintiffs and defendants were willing to waive juries with greater frequency before these judges than before others on the federal bench. This hypothesis, however, is only a special case of the selection hypothesis. According to the theory, litigation is more likely to occur where there are relatively greater differences between the parties' expectations of the outcome. Outcomes will be hardest to predict in close cases before fair-minded judges, in the same way that it is most difficult to predict the outcome of a flip of a perfectly unbiased coin.

Some surprising implications follow from the observation of the effect of the parties' selection on decisions by individual judges.[69] Table 6 illustrates graphically the source of the failure of the attempts of an extensive and ambitious political science literature to measure the effect of judicial attitudes.[70] We have little doubt that the attitudes of some of the judges described in Table 6 differ in some degree as between injurers and the injured or between parties breaching contracts and their victims. Yet there is no evidence of a difference in the attitudes of these judges discernible from trial outcomes because of the selection effect. If the attitudes of a judge toward some dispute were clear, the parties would settle the case. Litigation ensues chiefly where, because a judge has no evident

[69] These implications are elaborated in Priest, Selective Characteristics, *supra* note 18.

[70] For example, Schubert *supra* note 67; Sheldon Goldman, The Effect of Past Judicial Behavior on Subsequent Decision-Making, 19 Jurimetrics J. 208 (1979).

predisposition toward the merits of the case, the parties fail to agree on their predictions of the outcome.

The efforts of the legal process school,[71] and Herbert Wechsler in particular,[72] to constrain judges to decide cases according to "neutral principles" are innocent of this point. Let us accept that it is appropriate for a judicial system that judges suppress individual biases. The selection hypothesis suggests, however, that with respect to litigated (although not settled) disputes, the parties will act themselves to neutralize judicial bias. The parties face private economic incentives to litigate only those disputes on which the particular bias of a judge will operate neutrally. Indeed, the theory of the paper shows that the greatest influence on neutral decision making will be the difference between litigation and settlement costs and the level of the parties' errors. The principles on which litigated cases are decided may appear perfectly neutral, while the terms on which cases are settled may reveal powerful judicial biases.

Jury Verdicts by Subject—Some Evidence of Differential Stakes. The summary figures of jury verdicts displayed above in Tables 4 and 5 conceal some variation in the proportion of plaintiff victories within individual case types. Table 7 distinguishes the success rate of plaintiffs, again in jury trials in Cook County, Illinois, 1959–79, according to the nature of the incident giving rise to the dispute: traffic collision litigation (row 1); suits against common carriers by injured passengers (row 2); invitee-licensee actions (row 3); slip and fall actions (row 4); suits against taverns by victims of intoxicated persons (row 5); actions by injured workers against nonemployers (row 6); product liability actions (row 7); malpractice actions (row 8); and a miscellaneous category consisting of assault, dignitary harm (slander, false arrest), and business tort actions (row 9). The statistical significance of the results is indicated in two ways. Those categories in which the proportion of recoveries is different from 50 percent at a 95 percent confidence level only for totals inflated to adjust for sampling are indicated with a single asterisk.[73] Those categories in which the proportion of recoveries of *both* inflated and uninflated totals are significantly different from 50 percent are indicated with a double asterisk. Obviously, this second set provides the firmer evidence of differences from 50 percent.

[71] For a review of the literature of this school, see Jan Vetter, Postwar Legal Scholarship on Judicial Decision Making, 33 J. Legal Ed. 412 (1983).

[72] Herbert Wechsler, Toward Neutral Principles of Constitutional Law, 73 Harv. L. Rev. 1 (1959).

[73] See note 61 *supra*.

TABLE 7
PROPORTION OF PLAINTIFF VICTORIES IN CONTESTED CIVIL CASES TRIED TO JURIES, BY CASE TYPE, COOK COUNTY, ILLINOIS, 1959–79

Case Type	Plaintiff Victories[a] (%)	Total Cases
1. Traffic[b]	47.4**	9,987
2. Common carrier[b]	52.3	879
3. Injury on property	47.8	1,396
4. Street hazard	55.6*	399
5. Dramshop	53.8	371
6. Worker injury	66.3**	775
7. Product liability	42.8**	477
8. Malpractice	39.6**	202
9. Assault, dignitary harm, business tort	53.9**	1,013
Total traffic[b]	47.79*	10,866
Total nontraffic	52.50**	4,633
Total all cases		15,499[c]

SOURCE.—Derived from Cook County Jury Verdict Reporter. See Peterson-Priest, *supra* note 59, for a detailed description of data collection.

[a]Deadlocked verdicts are counted as ½ for plaintiff, understating their marginal character.

[b]Derived from one-in-four sample of cases.

[c]Differs from total in Table 4 by 559 cases which involved multiple legal issues and, thus, appear in more than one category.

*Only inflated total different from 50 percent at .95 confidence level. See note 61 *supra*.

**Inflated and uninflated totals different from 50 percent at .95 confidence level. See note 61 *supra*.

One would imagine that each of the nine subject categories describes a different distribution of disputes. Furthermore, the decision standards of the various categories of disputes are likely to be located in different positions relative to the respective dispute distributions. Certainly the decision standards of various categories are different in substance. In Illinois, for example, the liability standard for automobile collisions (row 1) is ordinary negligence while the standard for injuries to passengers of common carriers (row 2) is the highest degree of care.[74] Indeed, although no a priori conclusion can be drawn, it would seem the most remote coincidence for any two of the distributions or decision standards of these various categories of disputes to be closely similar.

Some of the results of Table 7 suggest equal stakes leading to 50 percent plantiff victories, although others clearly do not. The proportion of plaintiff victories in three of the nine categories (common carriers, property injuries, and dramshop cases) cannot be distinguished from 50 percent.[75]

[74] Uebelein v. Chicago Transit Authority, 86 Ill. App.2d 395, 230 N.E.2d 33 (1967).

[75] It should be noted that one of these results—however close to 50 percent—may not be

In a fourth category (street hazard), the difference from 50 percent is ambiguous: only significantly different when the total is inflated. In a fifth category (traffic collisions), the rate of recovery is very close to 50 percent (47.8 percent), although it is significantly different because of the large number of cases.[76] Furthermore, the proportion of plaintiff victories in the residual category (assault, dignitary harms, and business torts) is also close to 50 percent (54.1 percent), though little can be concluded because of the peculiar aggregation of cases.

In three other categories, however—worker injury, product liability, and malpractice (rows 6, 7, and 8)—the proportion of plaintiff victories is significantly different from 50 percent. According to our theory, a systematic difference from 50 percent victories may be observed only in two separate circumstances. First, if a very high proportion of disputes is litigated because either litigation costs are relatively low compared to settlement costs or expected judgments are extremely high relative to litigation costs, the rate of success at trial will reflect the proportion of plaintiff recoveries in the underlying distribution of disputes. There will be relatively less selection by the parties. There are no general theories of what determines the position of the decision standard relative to the dispute distribution, so observed victories may or may not differ from 50 percent. With respect to these three categories, however, there is no clear evidence that litigation costs relative to settlement costs are somehow peculiar. We have determined in another study that median judgments are higher in worker injury, product liability, and malpractice cases than in other categories.[77] Of course, litigation costs are also likely to be higher. But we cannot reject this explanation.

---

consistent with the selection hypothesis. Common carrier disputes (row 2) involve suits by injured passengers against, typically, the Chicago Transit Authority (buses and elevated trolleys), the Illinois Central Railroad (subway), and various taxi cab owners, among others. Virtually all of the defendants in these cases (except perhaps some cab owners) are repeat players; that is, they can expect some frequency of similar litigation in the future. Repeat-player status, however, should not automatically suggest differential stakes. It is unclear the extent to which the future patronage of the CTA or, more obviously, of any individual cab owner is affected by suits by individual riders. While repeat players have greater incentives than one-shot litigants to invest in litigation strategies, such strategies may have only short-term effects (see note 78 *infra*) and are extremely vulnerable to the creation by the market of a plaintiff common carrier bar. Moreover, we have few good theories of the litigation (or other) incentives of public agencies. See text at notes 126–29 *infra*. Thus, we reserve judgment on the common carrier finding.

[76] See William Feller, An Introduction to Probability Theory and Its Applications 21, 87 (3d ed. 1968) for examples of large runs of flips of unbiased coins that deviate from 50 percent heads.

[77] See Peterson-Priest, *supra* note 59, at 28, Table 7. Median awards in 1960–79 were worker injury, $59,000; product liability, $82,000; malpractice, $37,000; street hazard, $19,000; dramshop, $17,000; injury on property, $12,000.

The second and alternative condition under which the rate of plaintiff victories will differ from 50 percent is some systematic difference in the stakes to the parties from litigation. Are the stakes to the parties likely to differ in product liability, malpractice, or worker injury cases? Perhaps so, at least for product liability and malpractice cases, although again at this point we have no direct way to measure the parties' relative stakes. It is not implausible in product liability actions, for example, that the stakes are greater, in general, to manufacturer-defendants than to victim-plaintiffs. A product liability judgment, of course, may lead to an appeal establishing an adverse precedent. A trial court judgment may serve to support an estoppel. An adverse judgment might influence subsequent product sales. It might inform other injured parties that a case is worth bringing or increase their estimates of success and thus their settlement demands.[78] Furthermore, it is often alleged that firms that deal over time with a substantial number of claimants invest to establish and preserve a reputation for tough bargaining to reduce further settlement demands.

A similar description would seem available for malpractice actions by victim-patients against doctors or hospitals. An adverse judgment may harm the reputation of the doctor, which would mean that the doctor would have more to lose from a defeat at trial than the dollar judgment the plaintiff gains. If so, doctors, like manufacturers, may settle cases selectively, conceding those in which there is a greater likelihood of defeat and litigating those in which there is a greater likelihood of victory. According to the selection theory, where the stakes are relatively greater for defendants than for plaintiffs, one ought observe at trial a plaintiff success rate less than 50 percent.

The product liability and malpractice results in Table 7 seem consistent with this interpretation. Victims of defective products recover on average 42.8 percent of the time; malpractice victims recover 39.6 percent of the time. While our interpretation, admittedly, rests on a hunch, there are no other obvious explanations of the direction of disparity from 50 percent. It is a very common view that juries are predisposed toward plaintiffs in product liability and malpractice cases. Most imagine juries to be more sympathetic to victims than manufacturers and to injured patients than doctors. If there were no selection effect, these sympathies would be reflected in relatively more frequent plaintiff victories in product liability

[78] Of course, a settlement strategy of a defendant that included offering higher settlements to avoid losing in litigation (see text at notes 51–57 *supra*) is also likely to increase the settlement demands of plaintiffs, although it might not be information sufficiently widespread to increase the number of suits brought. Information assymetries of this nature that affect settlement-litigation decisions need further definition.

TABLE 8
PROPORTION OF PLAINTIFF VICTORIES IN CONTESTED PRODUCT LIABILITY, MALPRACTICE, AND WORKER INJURY CASES TRIED TO JURIES, COOK COUNTY, ILLINOIS, 1959–79

	PRODUCT LIABILITY CASES (1)		MALPRACTICE CASES (2)		WORKER INJURY CASES (3)	
PERIOD	Recoveries* (%)	Total Cases	Recoveries* (%)	Total Cases	Recoveries* (%)	Total Cases
1959–61	27	26	33	12	65	87
1962–64	47	43	43	20	74	131
1965–67	47	67	55	19	67	156
1968–70	48	61	41	29	68	106
1971–73	37	82	28	27	65	154
1974–76	47	94	41	41	54	83
1977–79†	40	104	38	54	67	58
Total	42.8	477	39.6	202	66.3	775

SOURCE.—Derived from Cook County Jury Verdict Reporter. See Peterson-Priest, *supra* note 59, for a detailed description of data collection.

*Deadlocked verdicts are counted as ½ for plaintiff.

†1979—nine months only.

and malpractice cases. In both sets of cases, however, it is the seemingly deep-pocket defendant that most frequently prevails.

There is some further reason to believe that the determinants of the rate of success in these categories of cases are structural in nature. Table 8 shows more specifically the rate of plaintiff success over time in these three categories. Because of the small volume of cases, we have combined results into three-year periods. Table 8 shows that in each of the three case categories,[79] the rate of plaintiff success is different from 50 percent in the direction suggested consistently over the twenty-one-year period. Furthermore, the consistent rates of recovery in these three subject areas hide extraordinary changes in the volume of litigation and in the average judgment over these years. For example, the rate of litigated product liability cases increased from 13.2 per year between 1960 and 1964 to twenty-eight per year between 1970 and 1974. Correcting the inflation, the average product liability judgment between 1960 and 1964 was $143,000; between 1970 and 1974, $281,000.[80] Similarly, between the

[79] In the combined assault, dignitary harm, and business tort category (Table 7, row 9) the proportion of plaintiff victories for the seven three-year periods after 1959 are 50, 49, 48, 56, 51, 59, and 58 percent, with a total rate of recovery of 53.9 percent. Again, because of the heterogeneous nature of the category, little can be concluded.

[80] In 1979 dollars. All average judgment amounts are taken from Peterson-Priest, *supra* note 59 at 26, Table 5. Peterson-Priest, however, records average judgments in all cases, not the more refined set of contested cases reported here. See note 59 *supra*.

same two periods, the annual volume of malpractice cases increased 62 percent and the average malpractice judgment increased from $32,000 to $370,000, again in constant dollars. Between these periods the volume of worker injury cases did not change dramatically, but the real average judgment nearly doubled. Yet one would have no reason to expect other than small changes in litigation patterns, observing rates of recovery alone.

Some greater evidence that this consistency can be attributed to selection appears in the product liability results. Table 8 shows that product liability recoveries (column 1) were consistently less than 50 percent. During the twenty-one-year period, however, the standard of liability for defective products changed dramatically from negligence to strict liability, a standard adopted by the Illinois Supreme Court in 1965.[81] Table 8 shows a very slight increase in the rate of recovery after 1965. We have divided the cases more precisely at the date that the strict liability standard became effective. The proportion of plaintiff recoveries in product liability actions under a negligence standard, 1959–65, is 39.7 percent and under the strict liability standard, 1965–79, is 43.4 percent. This slight increase in the recovery rate is not statistically significant. We are also able to identify cases that were filed under the negligence standard (that is, prior to May 21, 1965) but that came to trial and were litigated under the strict liability standard. Of ninety-three such cases, plaintiffs won 44.6 percent, suggesting a rapid rate of adjustment to the new legal standard.

Although the difference observed in the proportion of plaintiff victories under negligence and strict liability is statistically insignificant, some difference in the recovery rate can be predicted from our model. The selection hypothesis predicts 50 percent recoveries (or some deviation from 50 percent because of differential stakes) only near the limit. Because some range of disputes around the decision standard will be litigated (determined by the extent of the parties' error), this limit will never exactly be reached. Thus, the shape of the distribution of disputes will exert some influence on the rate of recovery. (See Figure 8.) Where a decision standard is shifted, there is likely to be some small change observed in the proportion of victories in litigated cases, although a change that, because of the selection effect, is much smaller than the change in the rate of defendant payouts. Certainly an increase in the rate of recovery from 40 to 43 percent under strict liability is consistent in direction with the effect one would ascribe to the lessening of the plaintiff's legal burden. Again, because of the small volume of cases, the shift is not statistically significant; thus, this account is highly speculative and demands further

[81] Suvada v. White Motor Co., 32 Ill.2d 612, 210 N.E.2d 182 (1965).

inquiry. At the minimum, however, the insignificant difference in the rate of recovery on the most prominent shift in civil liability standards of the last twenty years supports the implication of the selection hypothesis that the rate of recovery in contested cases will be generally invariant to the decision rule.[82]

To this point, we have not addressed worker injury cases in which, as shown in Tables 7 and 8, the rate of plaintiff success is significantly greater than 50 percent: 66.3 percent. According to our theory, this finding implies systematically greater stakes in such cases for injured workers than for defendants, who typically are nonemployer construction companies, building owners, or architects. We must concede that we cannot explain this result. It appears to contradict the theory. One would imagine that the stakes to injured plaintiffs are substantially less than to defendants. Plaintiffs stand to gain from litigation only the difference between the worker compensation schedule recoveries and the civil judgments. Initially, we thought that the 66.3 percent success rate might result from mismeasurement. Often worker injury cases involve cross-complaints or third-party actions in which the issue at trial is not whether or how much the plaintiff will recover, but from which defendant. Ignoring these cases,[83] however, injured workers still recover at a rate of 63.3 percent. We intend to devote further attention to this genuine puzzle.

Additional Evidence of Differential Stakes: Resale Price Maintenance Actions, 1936–75. Finally, we present data that we have compiled that test the differential stakes implication in a direction opposite to that of the product liability and malpractice cases. Table 9 presents the outcomes of all reported private actions seeking to enforce resale price maintenance agreements from 1934 to 1975, the period during which such agreements were exempt from the antitrust laws. These actions were brought by manufacturers against retailers who had violated agreements by selling at a price below the minimum established by the individual manufacturer. They are all equitable actions seeking injunctions prohibiting further violations and, in the case of second offenders, contempt orders for violations of existing injunctions.

[82] An alternative hypothesis consistent with the data is that the shift from a negligence to a strict liability standard made little difference in terms of outcomes, either because juries had themselves adopted a strict liability attitude toward product liability defendants before the change in the legal standard, or because a strict liability standard cannot be distinguished from a negligence standard (for example, in design defect cases) because of the requirement of demonstrating the "defect" or because of the survival of affirmative defenses. For different versions of these explanations, see Richard A. Epstein, Modern Products Liability Law, for example, at 43 (1980); Whitford *supra* note 7, at 161.

[83] We have also excluded subrogation actions and Jones Act comparative negligence actions.

TABLE 9
RESALE PRICE MAINTENANCE PRIVATE ACTIONS, 1934–75
(*N* Cases in Parentheses)

Period	Injunction Granted %	Contempt Order %
1934–40	71.4	. . .
	(28)	
1941–45	52.6	. . .
	(19)	
1946–50	68.5	. . .
	(92)	
1951–55	52.3	75.0
	(193)	(8)
1956–60	57.6	61.0
	(238)	(41)
1961–65	53.8	78.9
	(143)	(19)
1966–70	60.6	100.0
	(71)	(12)
1971–75	63.5	84.2
	(63)	(19)
Total	60.2	72.9
	(425)	(70)

SOURCE.—Derived from CCH Trade Cases, 1934–75.

The objective of these actions was the general deterrence of violations. The outcome at trial was publicized in trade journals and often by circulars from manufacturers to the set of retailers obligated under similar agreements. The stakes of such actions to the manufacturer-plaintiff thus were likely to be substantially greater than the gain in sales revenues to a retailer-defendant if the injunction were denied. Actions for contempt, of course, are more drastic. The relative infrequency of such actions over the period suggests that they were brought where price maintenance was regarded as an especially important marketing technique of the manufacturer.

Table 9 shows that the proportion of plaintiff victories is systematically greater than 50 percent for the period. The rate of success in contempt actions is greater yet. Both results are consistent with the implication of the differential stakes hypothesis.

B. Rates of Recovery as Shown in Other Studies

The realist movement inspired substantial empirical interest in the operation of the courts, and in some of the many empirical studies published since the 1930s, rates of plaintiff success were recorded. We report (in text or notes) the results of every empirical study that we have discovered that presents data on outcomes in contested cases.

1932: Justice of the Peace Courts, Hamilton County, Ohio. Paul F. Douglas, in this prototypical realist study, intended to show law in action in a forum remote from appellate courts.[84] Douglas studied the operation between 1925 and 1930 of the most inferior civil courts in Ohio, whose jurisdiction extended to claims not greater than $300[85] and whose judges were compensated solely by fees collected from the parties.[86] During this period, the Hamilton County Court comprised twenty-six divisions, each assigned to an individual judge. Douglas expected that the rate of plaintiff verdicts would demonstrate the existence of wide differences in the attitudes of these judges.[87] Douglas repeatedly emphasized how commonplace was the lack of precise application of law in these courts,[88] which he attributed to the great variation in educational backgrounds of the judges[89] and to the judges' inexperience. Of the judges serving during the period, 53 percent had served for less than three years, 26 percent for less than two years, and 15 percent for less than a year.[90]

Table 10 presents the rate of plaintiff success in the twenty-six Hamilton County divisions in ordinary civil actions, derived from Douglas's figures. Because of the low judicial tenure, we would imagine substantial error in the parties' estimates of judicial attitudes. Indeed, Douglas implies that the lack of training and experience leads even individual judges to decide cases inconsistently. Substantial uncertainty over the outcome of individual trials, of course, will lead in general to high rates of litigation and to rates of success that differ between judges; the selection effect for individual judges might be minimal. Table 10 certainly confirms variation across judges in outcomes. There are substantial differences between the divisions (from 91 to 17 percent), although the number of contested cases in most divisions is small.

The total result for all divisions over the six-year period, however, is highly suggestive: 50.73 percent, obviously not significantly different from 50 percent exactly.[91] One interpretation of this result is that while

[84] Paul F. Douglas, The Justice of the Peace Courts of Hamilton County, Ohio (1932).

[85] *Id.* at 4.

[86] *Id.* at 22.

[87] *Id.* at 85. Because of high turnover (see text at note 90 *infra*), thirty-nine individuals sat on the twenty-six divisions during the period studied. *Id.* at 23.

[88] *Id.* at 45–50.

[89] *Id.* at 29.

[90] *Id.* at 24, Table 1.

[91] In a separate table, Douglas reports the results for attachment, forcible entry, negotiable instrument, replevin, and damage suits in addition to the ordinary civil suits reported above. For all cases, plaintiffs recover 53.1 percent of the time. *Id.* at 84, Table 11. We believe these results less probative because the objective in litigation in forcible entry or negotiable instrument suits is often delay.

the expected outcome before any individual judge in the Hamilton County courts involves substantial risk, the set of plaintiffs and defendants can gain information about the range of attitudes in the courts to define their settlement expectations and negotiations. Again, whatever these corporate attitudes, the parties' incentives to settle will direct the general rate of plaintiff success toward 50 percent.[92]

1966: The American Jury. The most elaborate study of the jury system in the postwar era[93] is Kalven and Zeisel's classic *The American Jury*. Kalven and Zeisel sought to measure how trial by jury differs from trial by judge in terms of substantive decisions about guilt, innocence, or liability. They acknowledged that simple comparisons of the outcomes of jury and bench trials would not fully describe differences in standards because the characters of disputes tried before juries and judges were likely to be different.[94] Instead, they circulated questionnaires to judges asking them to record for each case the verdict of the jury and whether or not the judge would have rendered a similar verdict himself.

The American Jury addresses principally criminal trials. There are many reasons to believe that the settlement (plea bargain) process—and thus the selection effect—in criminal trials is vastly different from the civil settlement process that leads to 50 percent recoveries.[95] Kalven and Zeisel promised, but never published, a companion volume on civil trials. They do present some civil trial data, although it is difficult to evaluate.[96]

[92] Another famous realist study, the Columbia University Automobile Accident Compensation Report, purported to show that levels of compensation varied greatly to victims of accidents and, to the extent the judicial system was involved, was largely a matter of chance. Columbia Univ. Council for Research in the Social Sciences, Report by the Committee to Study Compensation for Automobile Accidents 32–33 (1932). The principal focus of the study was the compensation received by persons injured to varying degrees, but the committee in the course of the report solicited information on rates of plaintiff recoveries in eight courts in six jurisdictions. The court record data were collected by cooperating practicing attorneys in these locales and are unlikely to consist uniformly of contested cases alone. The results of the study are these: Phila., C.P. 2, 1927–29, 52.2 percent (414 cases); Phila. C.P. 3, 1928–29: 51.8 percent (257 cases); N.Y. City Ct., 1927–30: 50.1 percent (503 cases); N.Y. Supreme Ct., 1925–30: 77.1 percent (402 cases); Detroit, Circ. Ct., 1924–29: 68.7 percent (313 cases) New Haven Sup. Ct., 1919–28: 58.2 percent (201 cases); Dayton, Ct., C.P., 1927–28: 95.5 percent (22 cases); Charleston, Morgantown & Wheeling, W. Va., 1928–29: 64.4 percent (59 cases). *Id.* at Appendix No. 24 at 282.

[93] The second major postwar empirical study of civil judgments: Conard, *supra* note 2, does not present its results with sufficient particularity to allow a derivation of the rate of success in litigation.

[94] Kalven & Zeisel, *supra* note 13, at 64.

[95] See text at notes 120–29 *infra* for a discussion of rates of recovery in criminal (and other governmental) prosecutions.

[96] The authors do not explain the method or content of their civil jury questionnaire nor the rate of response. They indicate, however that they obtained data for "some 4,000 civil cases." Kalven & Zeisel, *supra* note 13, at 63.

Kalven and Zeisel found that in all civil trials of the sample, juries awarded verdicts to plaintiffs in 59 percent of cases, while judges would have awarded verdicts in 57 percent of cases. In personal injury cases alone, juries awarded plaintiff verdicts in 56 percent, while judges would have awarded plaintiff verdicts in 54 percent.[97] These findings are in the range of results expected by the selection hypothesis and thus can be viewed as not strongly contradictory.

1970: Settled out of Court. Laurence Ross, in this famous monograph, studied the civil claim settlement process from the files of a large insurance company. Ross's sample incorporated 2,216 claims. His principal focus was the process of settlement negotiations rather than adjudication. Ross did not report directly the rate of plaintiff success at trial, but his tables are sufficiently detailed to allow the success rate to be derived. Of Ross's initial 2,216 claims, ninety-three ultimately went to trial (4.2 percent).[98] Of these ninety-three, plaintiffs recovered verdicts in forty-five, or in 48.4 percent.[99] This figure is not significantly different from 50 percent at a 95 percent confidence level.

The Debate over the Six- versus Twelve-Person Jury. In 1970 in *Williams v. Florida*[100] and in 1973 in *Colgrove v. Battin,*[101] the Supreme Court sustained as constitutional the use of six-member juries in state criminal and federal civil cases, respectively. The Court concluded in *Williams* that it could detect "no discernible difference between the results reached by the two different-sized juries,"[102] a judgment that immediately was heavily criticized.[103] The Court responded to the scholarly criticism in *Colgrove* (as it extended the range of the six-person jury) by invoking the findings of three empirical studies of actual jury decisions[104] which pro-

[97] *Id.* at 64 n. 12. For 4,000 cases, the .59 and .57 results are significantly different from .50. Of course, we cannot determine the significance of the rate of recovery within the unknown lesser number of personal injury actions. As reported at note 14 *supra,* Kalven reported a rate of plaintiff recovery of 55 percent in personal injury actions in his famous essay "The Dignity of the Civil Jury." (He never explained the discrepancy between this result and the results published two years later in The American Jury.) Kalven's inference from this finding that juries do not systematically favor plaintiffs is unavailable. According to the selection hypothesis, the proportion of plaintiff verdicts tells us nothing about the substantive standard of decision.

[98] Ross, *supra* note 1, at 177, 179.

[99] *Id.* at 217, Table 5.8 & at 222, Table 5.9.

[100] 399 U.S. 78 (1970).

[101] 413 U.S. 149 (1973).

[102] 399 U.S. at 101.

[103] Hans Zeisel, And Then There Were None: The Diminution of the Federal Jury, 38 U. Chi. L. Rev. 710 (1971).

[104] The court also referred to a fourth study, Note, an Empirical Study of Six- and Twelve-Member Jury Decision-making Processes, 6. U. Mich. J. L. Reform 712 (1973) which was a report, however, of experimental, not actual, jury decisions.

vided, according to the Court, "convincing empirical evidence of the correctness of the *Williams* conclusion that 'there is no discernible difference' " between the substantive decisions of six- and twelve-person juries.[105] These studies uniformly show that the rate of plaintiff success at trial is roughly equivalent for cases tried to either six- or twelve-person juries.[106]

Since *Colgrove*, the three empirical studies relied on by the Court (as well as a fourth, which purports to show that jury size leads to different results) have been subjected to extensive methodological criticism. The chief complaint is that none of the studies adequately determines that the cases tried to six- and twelve-person juries are similar. Thus, though the observed rate of success before the two sets of juries is the same, if different cases are tried before the different-sized juries, then the substantive standards applied by the two sets of juries might be different.[107] However telling this criticism analytically, no one has developed a theory explaining why different types of cases are likely to be tried to different-sized juries.[108] As a consequence, the criticism, while of course appropriate, has not advanced our understanding of the importance of larger juries. Other studies have attempted to identify differences by trying manufactured cases of differing content before experimental juries.[109] In addition, very sophisticated economic models of decision making have been applied to the jury verdict process.[110] None of the results of these experimental or theoretical exercises, however, has been confirmed in studies of jury decisions in actual criminal or civil disputes.

According to the selection hypothesis, one would expect the rate of plaintiff success before six- and twelve-person juries to be similar; both would tend toward 50 percent, as long as the stakes are relatively equal to the parties. Indeed, as a general matter the rate of plaintiff success will

[105] 413 U.S. 149 at 159–60 & n. 15 (1973).

[106] See Table 11 *infra*.

[107] For example, Hans Zeisel & Shari Seidman Diamond, "Convincing Empirical Evidence" on the 6-Member Jury, 41 U. Chi. L. Rev. 281 (1974); David Kaye, And Then There Were Twelve: Statistical Reasoning, the Supreme Court, and the Size of the Jury, 68 Calif. L. Rev. 1004 (1980).

[108] One of the empirical studies cited by the Court, Mills Table 11 *infra*, involved a mandatory assignment of cases to six- or twelve-person juries. Mandatory assignment suggests that the samples are similar, but only if the parties' selection through settlement is ignored.

[109] See sources cited in Michael J. Saks, Jury Verdicts: The Role of Group Size and Social Decision Rule (1977).

[110] Alvin K. Klevorick & Michael Rothschild, A Model of the Jury Decision Process, 8 J. Legal Stud. 141 (1979); Alvin K. Klevorick, Michael Rothschild, & Lawrence Winship, Information Processing and Jury Decisionmaking (Civil Liability Prog. Working Paper, Yale Law School 1982).

TABLE 10
RATE OF SUCCESS BY JUSTICE OF THE PEACE DIVISION (Judge) IN ORDINARY CIVIL ACTIONS, HAMILTON COUNTY, OHIO, 1925–30

Division	Plaintiff Recoveries* (%)	Total Cases	Division	Plaintiff Recoveries (%)	Total Cases
1	42	253	14	67	21
2	48	85	15	43	14
3	28	61	16	73	11
4	53	81	17	62	21
5	70	56	18	68	31
6	33	33	19	69	16
7	25	64	20	17	12
8	76	46	21	25	4
9	56	27	22	20	10
10	76	30	23	60	5
11	91	35	24	100	2
12	62	21	25	. . .	. . .
13	67	18	26	. . .	. . .
			Total all divisions	50.73†	956

SOURCE.—Douglas, *The Justice of the Peace Courts of Hamilton County, Ohio* (1932), derived from table 11 at 86.

*Default and confessions excluded. Cases dismissed after trial without prejudice are counted as defendant verdicts.

†Douglas indicates a rate of plaintiff success as 50.00 percent. The source of the discrepancy cannot be determined.

tend toward 50 percent whether the cases tried to the six- or twelve-person juries are similar or different. The rate of plaintiff success will differ between six- and twelve-person juries only if case content differs systematically in terms of relative stakes of plaintiffs and defendants, but without regard to whether the dynamic of a six- or twelve-person panel is different.

Of course, the findings that plaintiffs recover verdicts at similar rates cannot show that the substantive standards of the two sets of juries are the same. But the simple methodological criticism of the jury-size studies is incomplete. Even if the content of cases tried before the two juries were similar in terms of observable characteristics such as size of expected judgment or the sources of the disputes (product liability, automobile accidents, and so on), the observed rate of success would be the same according to the selection hypothesis though one jury is consistently sympathetic to plaintiffs and another hostile. Different substantive attitudes of juries will always be concealed by the parties' selection of disputes for litigation.

Table 11 reviews the results of the four empirical comparisons of actual decisions by six- and twelve-person civil juries. The Supreme Court relied

TABLE 11
PROPORTION OF PLAINTIFF VICTORIES IN STUDIES OF SIX- AND TWELVE-PERSON CIVIL JURIES

	SIX-PERSON JURY		TWELVE-PERSON JURY	
STUDY	Plaintiff Recoveries (%)	Total Cases	Plaintiff Recoveries (%)	Total Cases
IJA 1972 (as reported)[a]	58.8	311	57.3	82
IJA 1972 (recomputed)[b]	53.4	275	49.3	69
Bermant-Coppock 1973[c]	54.5	33	53.7	95
Mills 1973[d]	53.8	210	52.0	123
Beiser-Varrin 1975 (recomputed)[e]	51.4	37	82.0	50

[a]Institute of Judicial Administration, "A Comparison of Six- and Twelve-Member Juries in the New Jersey Superior and County Courts" (1972) (hung juries counted as ½ for plaintiff).

[b]The proportion of victories reported in IJA 1972 include verdicts in cases tried only on the issue of damages which, of course, are clear plaintiff victories. The data are not reported with sufficient precision to allow unambiguous adjustment. Of the 12 percent and 10 percent damage only verdicts in the six- and twelve-member samples, respectively (Table 11 at 20), we have subtracted as settled 60.8 percent and 73.3 percent respectively (Table 11 at 21) from the number of recorded verdicts (Table 13 at 21).

[c]G. Bermant & R. Coppock, Outcomes of Six- and Twelve-Member Jury Trials: An Analysis of 128 Civil Cases in the State of Washington, 48 U. Wash. L. Rev. 593 (1973).

[d]L. Mills, Six-Member and Twelve-Member Juries: An Empirical Study of Trial Results, 6 U. Mich. J. L. Reform 671 (1973).

[e]E. N. Beiser & R. Varrin, Six-Member Juries in the Federal Courts, 58 Judicature 424 (1975) (recomputed from tables 3 & 4 at 429–30. Deadlocks counted as ½ for plaintiff).

upon the studies indicated in rows 1 through 4.[111] In row 2, we present the results of the New Jersey study recomputed in terms of contested cases only. In these three studies, the similarity in outcome across six- and twelve-person juries is evident. It is also evident, of course, that the rate of observed success is close to 50 percent in every case except the twelve-person jury finding in the Beiser-Varrin study (row 5).[112] These findings again tend to support the selection hypothesis.

There is a more important implication of the selection hypothesis for the six- versus twelve-member jury debate. We have referred to the extensive experimental and theoretical studies of the decisions of juries of different sizes; additional experiments of this nature have studied decisions made with different (nonunanimous) jury voting rules and decisions by juries of different racial, ethnic, and sexual memberships, all in a variety of trial contexts.[113] Over the years, of course, these studies have

[111] 413 U.S. 149 at 159–60, n. 15 (1973).

[112] The empirical validity of the Beiser & Varrin study is challenged in Grofman, A Comment on Six-Member Juries in the Federal Courts, 1977 Law and Soc. Action Newsletter 4.

[113] See sources cited in Saks, *supra* note 109.

attempted to simulate the actual conditions under which juries decide cases with increasingly greater sophistication.

There is an inherent limitation to this form of social science research that stems from the selection effect. Under the most common conditions for litigation,[114] no definitive findings applicable to trial juries can ever be achieved from observations of the verdicts of these different juries. Even where a change in the constitution of a jury or the procedure for jury decision making would lead to significantly different verdicts, the scientist must adjust the experiment to take the selection effect into account. If the experimental conditions would lead, in fact, to different jury decisions, then the conditions would lead to a different set of disputes being litigated to such juries rather than settled. Indeed, there is a very troublesome experimental circularity here. Until the effects of the new conditions are determined, it is impossible for the scientist to specify the different cases that a jury deciding under these conditions would face. Past disputes—no matter how commonly litigated—may not recur under new conditions because of the parties' selection.

As a consequence, this literature has addressed the problem backwards. Instead of attempting to measure how jury verdicts change under different conditions, the researcher must measure how litigation changes under different conditions, expecting verdicts—because of selection by the parties—to remain unchanged. The selection hypothesis implies that the principal observable effect of a change in some method of jury (or judicial) decision making will be on the content of litigation, not on observable verdicts themselves.[115]

Higgins and Rubin on Judicial Discretion. Higgins and Rubin attempted to define economic motivations for judicial decision making.[116] They presumed that trial judges want to be promoted to appellate courts and thus tailor their decisions to avoid reversal in order to increase their chances of promotion. Because, as judges become older, their chances of promotion decline, Higgins and Rubin predicted that the reversal rate would increase with the age of the judge.

The Higgins-Rubin hypothesis ignores the selection effect.[117] If the stakes to the litigants are equal, a trial court decision will be appealed, just as a dispute will be litigated, only where parties differ in their expecta-

[114] Where litigation costs greatly exceed settlement costs. For an elaboration of this general point see Priest, Selective Characteristics, *supra* note 18.

[115] This point is described in further detail, *id.*

[116] Richard S. Higgins and Paul H. Rubin, Judicial Discretion, 9 J. Legal Stud. 129 (1980).

[117] Rubin, in an earlier paper, made an important contribution to the description of the effect of the litigants' selection on the substantive character of the law. Paul H. Rubin, Why Is the Common Law Efficient? 6 J. Legal Stud. 51 (1977).

tions of the outcome on appeal. Thus, for cases in which the stakes are equal to the parties, the reversal rate on appeal will tend toward 50 percent regardless of the identity of the trial judge, the extent of his legal abilities, ambitiousness or economic interests. Indeed, the rate of reversal on appeal will not be affected, in general, by the similarity of views of the trial judge and the appellate court on legal issues. If the trial judge's rulings can be seen clearly to disregard the views of the appellate court, the parties will settle the case—admittedly on terms much different from the trial judgment—and so "reverse" the trial judge privately. A judge whose legal views (or views in any other dimension) differ substantially from those of the appellate court may face a higher rate of appeal (although if the difference in views is manifest, the judge's appeal rate may be lower than average), but the rate of reversal of cases appealed will be determined most importantly by the parties' relative stakes.

Of course, as has been mentioned, it is less likely for appellate than for trial cases that the stakes to the parties will be equal.[118] A significant return from appeal is a precedent that may affect other litigation or other activities of a litigant. In addition, it is difficult to identify contested appellate cases; most judicial administration studies indiscriminately report all judgments entered.

Higgins and Rubin failed to find any effect of age on the rate of reversal or of the rate of reversal on promotions,[119] which would have been predicted by the selection hypothesis. Higgins and Rubin have graciously provided us with their raw data. According to internal court documents that they were able to obtain, eighteen district court judges in the Eighth Circuit during 1974 were reversed seventy-six times in 137 appealed cases: 48.4 percent. Higgins and Rubin, however, found other data (whose source is not equivalently described) showing that thirty-seven district court judges in the Fifth Circuit from 1966 to 1970 were reversed 837 times in 2,962 appealed cases: 33.0 percent. Because the *rate* of appeal per Fifth Circuit judge is almost twice that per Eighth Circuit judge, there may be a measurement problem affecting these statistics. Otherwise, the finding may contradict the theory.

Differential Stakes: Antitrust Cases and Government Prosecutions. William Baxter's 1980 paper attempted to determine who wins and loses from the existence and enforcement of the antitrust laws.[120] Baxter found that plaintiffs in private actions between 1964 and 1970 were successful 15.2 percent of the time.[121] He explained this result in terms

[118] Text at notes 55–57 *supra*.

[119] Higgins & Rubin, *supra* note 116, at 135–37.

[120] Baxter, *supra* note 17. See discussion *id.*

[121] *Id.* at 17, table 1-1.

similar to ours: as evidence of relatively greater stakes in antitrust cases to defendants than to plaintiffs.[122] On the other hand, it is well known that government agencies as plaintiffs in antitrust prosecutions are successful much more than 50 percent of the time. Posner showed that the rate of success of the Justice Department[123] was 81 percent in antitrust cases from 1890 to 1967, and for the Federal Trade Commission in antitrust cases from 1915 to 1969, the success rate was also 81 percent.[124] How can the different rates of success for private and government antitrust plaintiffs be explained?

The differential stakes explanation of the rate of recovery in private antitrust actions seems plausible. The stakes to antitrust defendants, in general,[125] ought to exceed those to plaintiffs for the same reasons that the stakes to manufacturers in product liability actions exceed those to consumers and the stakes to doctors in malpractice actions exceed those to patients. Admittedly, an adverse antitrust judgment may affect the reputation of the defendant less than an adverse product liability or malpractice judgment affects the manufacturer's or doctor's reputation. But one would expect the antitrust defendant to be equally concerned about the effect of an adverse judgment as an estoppel, on the likelihood that other plaintiffs will file suit, on the settlement demands of other plaintiffs and, especially, on distribution or sales practices unrelated to the dollar judgment.

Why would the relative stakes in antitrust cases shift in government actions? Although we do not have good theories of government behavior, there is little reason to regard a government agency as a dollar maximizer—the assumption leading to the 50 percent and differential stakes implications. The very high proportion of success observed in government antitrust actions is similar to the rate observed in other government prosecutions. For example, in virtually every report of criminal prosecutions that we have seen, the prosecutor is victorious in contested cases much more frequently than 50 percent of the time. Posner has developed a model of administrative agencies that derives a high proportion of prosecution victories from a budget constraint alone.[126] According to the model, because the budget of the agency is fixed and the agency cannot borrow to support its prosecutions, the agency selects for litigation those

[122] *Id.* at 16–21.

[123] Derived from Richard A. Posner, A Statistical Study of Antitrust Enforcement, 13 J. Law & Econ. 365, table 11 at 381 (1970).

[124] Derived from *id.*, table 12 at 382.

[125] But see our discussion of resale price maintenance cases at Table 9 *supra*.

[126] Richard A. Posner, The Behavior of Administrative Agencies, 1 J. Legal Stud. 305 (1972).

disputes in which it has a high likelihood of victory. It is difficult empirically to distinguish this formulation from the simple assumption that the agency attempts to maximize victories. But both lead to a proportion of victories much greater than 50 percent.

There is some additional confirmation that this description of prosecutorial selection explains the very high rates of prosecutorial success. In an unpublished dissertation, Judith Lachman reports a study of the case files of litigated criminal prosecutions in Wayne County, Michigan.[127] The file of each case contained the prosecutor's prelitigation estimate of the chance of conviction. Lachman found no case taken to trial in which the prosecutor estimated the chance of success to be less than 60 percent.[128] Thus, the Wayne County prosecutors selected cases for trial (as opposed to plea bargain) highly skewed toward conviction.

There is a crude way to test this explanation of the difference between private and government rates of success in antitrust actions. One would expect the great difference that we have hypothesized at the trial level between the relative stakes of private and government antitrust plaintiffs to tend to diminish at higher levels of appeal. In general, only parties interested in precedents will press cases to increasingly high levels of appeal including, most particularly, because of very high attendant costs of preparation, the Supreme Court. Of course, even parallel desires for precedents would not provide ground for expecting the stakes of the parties to be exactly equal. The value of particular precedents is likely to differ to the parties, and thus the rate of success at the Supreme Court is likely to differ from 50 percent. But one would imagine that in the antitrust field, for example, the stakes to the parties on appeal are less unequal than the stakes at trial. In particular, one would expect that the gross disparity between relative stakes in private antitrust actions (again, 15.2 percent victories) and government antitrust actions (81 percent victories) would tend to be equalized at the Supreme Court. Neither Baxter nor Posner referred to or attempted to explain appellate rates of success, but the figures are available. At the Supreme Court in antitrust cases, 1890–1969, the Justice Department was successful in 74 percent of cases, the Federal Trade Commission in 75 percent of cases, and private antitrust plaintiffs in 63 percent of cases.[129] This explanation, of course, is highly speculative, but it deserves further inquiry.

[127] Judith Ann Lachman, An Economic Model of Plea Bargaining in the Criminal Court System (1975) (unpublished dissertation, Mich. St. Univ.).

[128] *Id.* at 111.

[129] Posner, *supra* note 123, table 14 at 384.

IV. Conclusion

There is substantial evidence which we have compiled and which has been compiled in other studies that supports the principal implications of the selection hypothesis. We should not, however, too quickly claim success. As mentioned earlier, the model describes the observed rate of success in any individual set of cases as determined by several factors: to a small extent, the shape of the distribution of disputes and the position of the decision standard; to a much greater extent, the magnitude of the parties' error and the relationship between litigation costs, settlement costs, and the judgment. In addition, an assumption critical to the model is of the distribution of the parties' error terms.[130] Various combinations of the mean of the population of disputes and of the standard error of the parties' measurements can yield the proportions of victories that we have observed. As a consequence, the next step in our research is to obtain independent verification of the magnitude of these other variables.

Nevertheless, we are very encouraged by the empirical success of this first exploration and by the promise of the approach. A precondition for conclusions about the effects of the law from studies of decisions is a theory of case selection. As legal scholarship becomes more empirical in nature, inferences based on presumptions of selection will become increasingly central to its findings, and to our understanding of the operation of the legal system.

[130] But, we believe, highly plausible. See text at notes 36–40 *supra*.