

EXPERIMENTS ON THE EFFECTS OF FEE SHIFTING AND DISCOVERY ON THE EFFICIENT SETTLEMENT OF TORT CLAIMS

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INTRODUCTION

Imagine a world in which the effects of a policy change could be tested in advance. Unintended consequences could be accounted for, mistakes corrected, and new proposals evaluated—all without the tremendous costs of a real-world trial. Experimental economics, pioneered by Vernon Smith (Nobel Laureate, 2002), provides researchers with innovative techniques for determining the effects of policy changes *ex ante*. Through the use of mechanisms designed to capture the incentive structures of real-world environments, experimenters can reproduce and analyze decision-making contexts. In addition, benchmark comparisons can be made, and controlled replication becomes possible. Experiments cannot perfectly represent the real world, of course, but they allow researchers to test the “what-ifs” of public policy, at a fraction of the cost of real-world trials. As such, they provide a valuable tool for evaluating potential reforms.

Concerns about abuse of the American tort system have generated many calls for reform in recent years.¹ The costs of the tort system are escalating rapidly. A recent Tillinghast–Towers Perrin study placed the total costs of tort litigation at over \$233 billion per year, more than two percent of U.S. GDP.² This represents a 13.3% increase from the previous year alone.³ Litigation costs have been growing at an average rate of 9.8% per year since 1951.⁴ Only 46 percent of this total cost goes to victims in the form of economic and non-economic damages.⁵ The Congressional Budget Office

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¹ See e.g., Maria Newman, *Bush Pushes Legislation to Limit ‘Frivolous Lawsuits’*, N.Y. Times, Dec. 15, 2004. See also S. 5, 108th Cong. (2005).

² Tillinghast –Towers Perrin, U.S. Tort Costs: 2003 Update 1, http://www.towersperrin.com/tillinghast/publications/reports/2003_Tort_Costs_Update/Tort_Costs_Trends_2003_Update.pdf.

³ *Id.*

⁴ *Id.*

⁵ *Id.*

conjectures: “Even leaving aside the largely unknown indirect costs, the current tort system seems to be an inefficient way to compensate victims.”⁶

Legal scholars debate whether or not these large numbers truly indicate inefficiency,⁷ but it seems difficult to resolve this question with field data. Much relevant information, such as pre-trial settlement offers and details of cases that do not advance to trial, is generally unavailable to researchers. By allowing us to measure these and other variables that are inherently difficult to measure in the field, experimental economics provides an important complement to field research.

Through an experimental study with 128 cash motivated subjects, we compare pre-trial settlement rates under a two-way cost-shifting rule and under the American rule of cost allocation. We also examine the effects of discovery and fee-shifting costs on settlement rates and the efficient use of the courts. We find no difference in settlement rates between cost allocation rules; however, the availability of full information to all parties and the inclusion of attorneys’ fees as recoverable costs significantly improve pre-trial settlement rates. These results shed light on previous theoretical work and suggest avenues for further research.

I. LEGAL BACKGROUND

A. *Fee Shifting and Settlement Incentives*

Some legal scholars advocate fee shifting as a way to deter inefficient lawsuits.⁸ One type of fee shifting is codified as Rule 68 of the Federal Rules of Procedure.⁹ Rule 68 states:

⁶ CONGRESSIONAL BUDGET OFFICE, THE ECONOMICS OF U.S. TORT LIABILITY: A PRIMER 21 (2003).

⁷ According to the Law and Economics literature, it is efficient to use the court system only when the costs of using that system are less than the cost of using private methods of resource allocation. *See e.g.*, RICHARD POSNER, ECONOMIC ANALYSIS OF LAW 565 (5th ed. 1998).

⁸ *See, e.g.*, American Corporate Counsel Association, *Tort Reform Proposal 2000*, <http://www.acca.com/networks/litigation/comments/tort.html> (advocating the English “Loser Pays” Rule); Richard Mincer, *Rule 68 Offer of Judgment: Sharpen the Sword for Swift Settlement*, 25 U. MEM. L. REV. 1401, 1404 (1995) (stating that Rule 68 “could play a significant role in encouraging pretrial settlements of disputes and thus reducing the caseload facing the judicial system.”).

⁹ Fed. R. Civ. P. 68.

At any time more than 10 days before the trial begins, a party defending against a claim may serve upon the adverse party an offer to allow judgment to be taken against the defendant party for the money or property or to the effect specified in the offer, with costs then accrued.¹⁰

If the offer is not accepted within 10 days, the offer is deemed withdrawn. “If the judgment finally obtained by the offeree is not more favorable than the offer, the offeree must pay the costs incurred after the making of the offer.”¹¹

The Supreme Court has explained that this rule was designed to “encourage settlement and avoid litigation”¹² as it “prompts both parties to a suit to evaluate the risks and costs of litigation, and to balance them against the likelihood of success upon trial on the merits.”¹³ Nonetheless, the current implementation of Rule 68 is fundamentally asymmetrical; only the defendant has the option of serving an offer of judgment. Scholars have suggested that Rule 68 would promote settlements more effectively if it were symmetrical, that is, if both sides could be penalized for rejecting favorable offers.¹⁴ This symmetrical type of cost-shifting is generally called

¹⁰ *Id.*

¹¹ *Id.* The text of the entire rule reads:

At any time more than 10 days before the trial begins, a party defending against a claim may serve upon the adverse party an offer to allow judgment to be taken against the defending party for the money or property or to the effect specified in the offer, with costs then accrued. If within 10 days after the service of the offer the adverse party serves written notice that the offer is accepted, either party may then file the offer and notice of acceptance together with proof of service thereof and thereupon the clerk shall enter judgment. An offer not accepted shall be deemed withdrawn and evidence thereof is not admissible except in a proceeding to determine costs. If the judgment finally obtained by the offeree is not more favorable than the offer, the offeree must pay the costs incurred after the making of the offer. The fact that an offer is made but not accepted does not preclude a subsequent offer. When the liability of one party to another has been determined by verdict or order or judgment, but the amount or extent of the liability remains to be determined by further proceedings, the party adjudged liable may make an offer of judgment, which shall have the same effect as an offer made before trial if it is served within a reasonable time not less than 10 days prior to the commencement of hearings to determine the amount or extent of liability.

¹² *Marek v. Chesny*, 473 U.S. 1, 5 (1985).

¹³ *Id.*

¹⁴ *See, e.g.,* Geoffrey P. Miller, *An Economic Analysis of Rule 68*, 15 J. LEGAL STUD. 93,

two-way cost-shifting.

A two-way cost-shifting rule, similar to Rule 68, has been implemented in the State of California as Section 998 of the California Code of Civil Procedure. Section 998 states: “Not less than 10 days prior to commencement of trial or arbitration...any party may serve an offer in writing upon any other party to the action to allow judgment to be taken or an award to be entered in accordance with the terms and conditions stated at that time.”¹⁵ This paper will examine the effectiveness of this symmetrical cost-shifting rule in promoting pre-trial settlements.

B. Court Costs and Settlement Incentives

The word “costs” as used in Rule 68 and Section 998 is a term of art and only refers to the shifting of certain costs. In *Marek v. Chesny*, the Supreme Court found that: “the term ‘costs’ in Rule 68 was intended to refer to all costs properly awardable under the relevant substantive statute or other authority. In other words, all costs properly awardable in an action are to be

123–124 (1986) (arguing that a mutual offer of judgment cost-shifting rule (which includes attorneys’ fees as costs) would provide greater benefits at less cost than the current Rule 68); Committee on Rules of Practice and Procedure of the Judicial Conference of the United States, Proposed Court Rules, 102 F.R.D. 407 (1984) (recommending Rule 68 should be modified so that all parties, including claimants, be allowed to make offers of settlement under Rule 68).

¹⁵ CAL. CODE OF CIV. PROC. § 998 (b). See also CAL. CODE OF CIV. PROC. § 998(c)(1):

If an offer made by a defendant is not accepted and the plaintiff fails to obtain a more favorable judgment or award, the plaintiff shall not recover his or her postoffer costs and shall pay the defendant’s costs from the time of the offer. In addition, in any action or proceeding other than an eminent domain action, the court or arbitrator, in its discretion, may require the plaintiff to pay a reasonable sum to cover costs of the services of expert witnesses, who are not regular employees of any party, actually incurred and reasonably necessary in either, or both, preparation for trial or arbitration, or during trial or arbitration, of the case by the defendant.

And CAL. CODE OF CIV. PROC. § 998(d):

If an offer made by a plaintiff is not accepted and the defendant fails to obtain a more favorable judgment or award in any action or proceeding other than an eminent domain action, the court or arbitrator, in its discretion, may require the defendant to pay a reasonable sum to cover costs of the services of expert witnesses, who are not regular employees of any party, actually incurred and reasonably necessary in either, or both, preparation for trial or arbitration, or during trial or arbitration, of the case by the plaintiff, in addition to plaintiff’s costs.

considered within the scope of Rule 68 ‘costs.’”¹⁶ Generally, this means that recoverable costs are limited to things like filing fees,¹⁷ copying fees,¹⁸ and the costs for witnesses.¹⁹ In most instances, attorneys’ fees, by far the most significant element trial expenditure, are not recoverable under Rule 68.²⁰ The Supreme Court has stated that: “absent congressional expressions to the contrary, where the underlying statute defines ‘costs’ to include attorneys’ fees, we are satisfied such fees are to be included as costs for purposes of Rule 68.”²¹

Section 998 does not expressly provide for the recovery of attorneys’ fees. Instead, attorneys’ fees may be awarded under Section 998 at the court’s decision,²² if they are specifically provided for by statute,²³ and in a number of other limited situations.²⁴

In this paper, we examine two different cost environments, capturing the inclusion and exclusion of attorneys’ fees as recoverable “costs.” This comparison is important because scholars disagree about whether including attorneys’ fees as costs would increase the likelihood of settlement.²⁵

¹⁶ *Marek v. Chesny*, 473 U.S. at 9.

¹⁷ *See* 28 U.S.C. 1920(1), 1923 (1994). *See also* *Gorelangton v. City of Reno*, 638 F. Supp. 1426, 1433 (D. Nev. 1986) (allowing the recovery of filing fees); *Raio v. American Airlines, Inc.*, 102 F.R.D. 608, 611 (E.D. Pa. 1984) (holding that recoverable costs include the filing fee).

¹⁸ *See* 28 U.S.C. 1920(4) (1994). *See also* *Radol v. Thomas*, 113 F.R.D. 172, 175 (S.D. Ohio 1986) (allowing recovery for the costs of copying for documents which were used and admitted into evidence as well as for the cost of jury books); *Gorelangton*, 638 F. Supp. at 1434 (permitting the recovery of photocopying costs).

¹⁹ *See* 28 U.S.C. 1821(b), 1920(3) (1994). *See also* *Quy v. Air America, Inc.*, 667 F.2d 1059, 1065 (D.C. Cir. 1981) (holding that witness costs are taxable under 28 U.S.C. 1821 even if the witness is called to testify at trial as long as the witness was called to be available to testify on counsel’s good faith and reasonable judgment); *Roberts v. S.S. Kyriakoula D. Lemos*, 651 F.2d 201, 203 (3d Cir. 1981) (holding that travel costs of witnesses are recoverable when witnesses appear pursuant to a court order, even if the travel is from a foreign nation).

²⁰ *See, e.g.*, *Agola v. Hagner*, 678 F. Supp. 988, 995 (E.D.N.Y. 1987); Avery Wiener Katz, *Indemnity of Legal Fees*, in 5 *ENCYCLOPEDIA OF LAW AND ECONOMICS* 63 (Boudewijn Bouckaert & Gerrit de Geest eds., 2000).

²¹ *Marek v. Chesney*, 473 U.S. at 9 (citing *Delta Air Lines, Inc. v. August*, 450 U.S. 346, 362–63 (1981) (Powell, J., concurring)).

²² *See* CAL. CODE OF CIV. PROC. § 1021.1.

²³ *See id.* at § 1021.

²⁴ *See* CAL. CODE OF CIV. PROC. §§ 1021–1038.

²⁵ Some scholars argue that fee shifting increases the likelihood of settlement. *See, e.g.*, Joshua P. Davis, *Toward a Jurisprudence of Trial and Settlement: Allocating Attorneys’ Fees by Amending Federal Rule of Civil Procedure 68*, 48 *ALA. L. REV.* 65, 65–69 (1996) (arguing that requiring the loser to pay if he had earlier rejected a settlement offer would

Avery Wiener Katz explains:

The current state of economic knowledge does not enable us reliably to predict whether a move to fuller indemnification would raise or lower the total costs of litigation, let alone whether it would better align those costs with any social benefits they might generate.

The reason for this agnostic conclusion is straightforward. Legal costs influence all aspects of the litigation process, from the decision to file suit to the choice between settlement and trial to the question whether to take precautions against a dispute in the first place. . . . The combination of all these external effects are too complicated to be remedied by a simple rule of “loser pays.” Instead, indemnity of legal fees remedies some externalities while failing to address and even exacerbating others.²⁶

C. Empirical Literature on Fee Shifting

There is a significant amount of theoretical research on fee shifting, but relatively little empirical research. In one of the few empirical studies, Coursey and Stanley used a set of experiments to simulate the process of bargaining under the threat of trial.²⁷ Their experiments were designed to simulate three cost allocation rules: the American Rule, under which both parties to a lawsuit bear their own legal costs; the English Rule, under which the loser pays the legal costs of both parties; and Federal Rule 68.²⁸ They find that subjects settled most frequently under Federal Rule 68, second-most under the English Rule, and least of all under the American Rule for cost allocation.²⁹ Coursey and Stanley also report, however, that

increase the likelihood of settlement). Others argue that fee shifting decrease the likelihood of settlement. See, e.g., Anna Aven Sumner, *Is the Gummy Rule of Today Truly Better Than the Toothy Rule of Tomorrow? How Federal Rule 68 Should be Modified*, 52 DUKE L.J. 1055 (2003). Stephen Shavell, *Suit, Settlement, and Trial: A Theoretical Analysis Under Alternative Methods for the Allocation of Legal Costs*, 11 J. Legal Stud. 55 (1982).

²⁶ Avery Wiener Katz, *Indemnity of Legal Fees*, in 5 ENCYCLOPEDIA OF LAW AND ECONOMICS 64–65 (Boudewijn Bouckaert & Gerrit de Geest eds., 2000).

²⁷ Don L. Coursey & Linda R. Stanley, *Pretrial Bargaining Behavior Within The Shadow of the Law: Theory and Experimental Evidence*, 8 INT’L REV. L. & ECON. 161 (1988).

²⁸ *Id.* at 160.

²⁹ *Id.* at 170.

Rule 68 redistributes wealth from plaintiffs to defendants by creating incentives for plaintiffs to accept lower settlement offers than they otherwise would.³⁰ They suggest that adoption of a symmetric cost-shifting rule, such as Section 998, California Code of Civil Procedure, might promote settlements while curbing Rule 68's redistributive tendencies, but do not test such a rule.³¹

Anderson and Rowe also conducted empirical research on fee shifting.³² They created an experiment that used computers to present participants (law students and attorneys) with a theoretical tort case. The computer provided information about claims and verdicts in similar cases and asked the participants to give estimates of the percentage likelihood of verdicts above several levels and a single best estimate of a likely jury award.³³ Anderson and Rowe predicted that a modified version of Rule 68, which includes two-way attorney fee-shifting, increases the likelihood of settlement because the attorney fee-shifting increased the maximum amount a defendant would be willing to pay to settle and decreased the amount a plaintiff would be willing to accept to settle.³⁴

A third empirical study was conducted by the Federal Judicial Center. To assist the Advisory Committee on Civil Rules of the Judicial Conference of the United States in considering possible amendments to Rule 68, the Federal Judicial Center sent surveys to a random sample of 1,951 attorneys who had been involved in cases in the Federal courts.³⁵ The survey asked the attorneys about the costs of the litigation in which they were involved, the proportion of cases that went to trial which could have settled, what portion of cases could have settled earlier, what portion of litigation expenses might have been saved whether or not the case settled, whether an offer-of-judgment rule hurt the risk-averse litigant, and the attorneys' views about offer-of-judgment rules.³⁶ The survey's authors conclude:

In spite of the dominance of opinion supporting an amendment to strengthen Rule 68 by allowing any party to make an offer of judgment and allowing the offeror to

³⁰ *Id.* at 176.

³¹ *Id.*

³² David A. Anderson & Thomas D. Rowe, Jr., *Empirical Evidence on Settlement Devices: Does Rule 68 Encourage Settlement?*, 71 *CHI.-KENT. L. REV.* 519, 520 (1995).

³³ *Id.* at 527.

³⁴ *Id.* at 541–42.

³⁵ John E. Shapard, *Likely Consequences of Amendments to Rule 68, Federal Rules of Civil Procedure* 1–3, Federal Judicial Center (1995).

³⁶ *Id.* at 5–6.

recover at least some portion of its post-offer attorneys' fees, it is important to recognize that attorneys have strong opinions on both sides of the issue. The majority believe strongly that a strengthened Rule 68 would enhance access to the courts, increase fairness, and reduce litigation expenses and delay. A minority believe just as strongly, however, that such a rule would penalize those seeking access to the courts; produce unfair results; and increase the costs, delay, and complexity of litigation.

The objective results, however, suggest that a strengthened Rule 68 may produce more fairness and achieve a sizable reduction in litigation expenses that are unnecessary, abusive, or at least avoidable by encouraging settlement of cases instead of trial or by encouraging earlier settlements. Such a rule could also expedite disposition for settled cases that could have settled earlier and for tried cases that could reasonably settle rather than go to trial. A strengthened Rule 68 that precludes an award of expenses in excess of the amount of a plaintiff's judgment would most likely increase the incidence of risk aversion only slightly while encouraging litigation of small but strong claims and discouraging pursuit of weak but high-stakes cases.³⁷

Our experiment tests the recommendations of the majority of those surveyed by studying the two-way cost shifting rule, currently implemented as Section 998, California Rule of Civil Procedure. In addition, we compare the inclusion and exclusion of attorneys' fees as costs for the purposes of a cost-shifting rule.

D. Discovery

In this paper we also look at discovery and its impact on settlement rates. We interpret the Federal Rules that relate to discovery as affecting the information available to the parties.³⁸ In our experiment, this is captured by looking at symmetric and asymmetric information. We examine how pre-trial negotiations and settlements are affected by these informational differences.

³⁷ *Id.* at 3.

³⁸ This is to say that we do not look at any one rule specifically, such as Rule 26, but rather we look at discovery as increasing the information available to both parties.

Some scholars have argued that surprise in litigation is a good thing and an integral part of the adversarial legal system.³⁹ Others, such as Justice Murphy, have argued that, “Mutual knowledge of all the relevant facts gathered by both parties is essential to proper litigation.”⁴⁰ Edson Sunderland, the drafter of what became Rules 26 to 37⁴¹ wrote:

It is probable that no procedural process offers greater opportunities for increasing the efficiency of the administration of justice than that of discovery before trial. Much of the delay in the preparation of a case, most of the lost effort in the course of the trial, and a large part of the uncertainty in the outcome, result from the want of information on the part of litigants and their counsel as to the real nature of the respective claims and the facts upon which they rest.⁴²

Another legal scholar has explained that discovery’s proponents believed that discovery would lead to a more efficient administration of justice:

Besides converting trials and pretrial negotiations into more orderly searches for the truth, discovery was expected to reduce the number of trials and thus relieve the burden on the courts. If the full truth would soon be revealed, fewer sham suits would be filed. If the adversaries and the court knew the facts before trial, the court could render more summary judgments. If both sides knew the full truth and each other’s strengths and weaknesses, they would settle the case and avoid the costs and uncertainties of trial. If both sides knew all the facts, lawyers and clients would be more satisfied with settlement terms and would carry out the agreement willingly.⁴³

In essence, with discovery, “Each party may in effect be called upon by

³⁹ See, e.g., Kenneth B. Hawkins, *What’s So Wrong About Surprise*, 39 A.B.A.J. 1075 (1953).

⁴⁰ *Hickman v. Taylor*, 329 U.S. 495, 507 (1947).

⁴¹ Stephen N. Subrin, *Fishing Expeditions Allowed The Historical Background for the 1938 Federal Discovery Rules*, 39 B.C. L. Rev. 691, 698 (1998).

⁴² Edson R. Sunderland, *Foreword to GEORGE RAGLAND, JR., DISCOVERY BEFORE TRIAL* at iii (1932).

⁴³ WILLIAM A. GLASER, *PRETRIAL DISCOVERY AND THE ADVERSARY SYSTEM* 11–12 (1968).

his adversary or by the judge to lay all his cards upon the table, the important consideration being who has the stronger hand, not who can play the cleverer game.”⁴⁴

Some researchers have studied the effect of informational symmetry on settlement rates. For example, Babcock and Landeo studied pre-trial bargaining in a state of asymmetric information.⁴⁵ Their study also examined the effect of a newly proposed litigation institution called a settlement escrow. Babcock and Landeo examined subjects’ behavior as they bargained with and without certainty⁴⁶ and with and without escrow.⁴⁷ They found that escrow only affected settlements when bargaining was conducted under uncertainty.⁴⁸ They also found that “when uncertainty was present . . . settlement rates were positively and significantly influenced by the escrow bargaining institution.”⁴⁹ And lastly, they found that settlement rates are negatively, but not significantly, influenced by uncertainty.⁵⁰

II. Experimental Design

This experiment models a lawsuit as a bargaining game between subjects, interacting anonymously in the roles of plaintiff’s attorney and defense attorney.

A. *The Economic Environment*

Plaintiffs and defendants did not take part in the experiment but instead

⁴⁴ Edson R. Sunderland, *Discovery Before Trial Under the New Federal Rules*, 15 TENN. L. REV. 737, 739 (1939).

⁴⁵ Linda Babcock & Claudia M. Landeo, *Settlement Escrows: An Experimental Study of a Bilateral Bargaining Game*, 53 J. ECON. BEHAV. & ORG. 401 (2004). They describe a settlement escrow as, a new litigation institution whereby:

a neutral agent receives settlement offers from both parties in a lawsuit. If the defendant offers more than the plaintiff demands, the court imposes a settlement at the midpoint of the offers. If the offers do not overlap in this way, the offers remain secret and litigants proceed to pre-trial bargaining.

Id. at 402.

⁴⁶ Babcock and Landeo defined certainty as “where the plaintiff and defendant know the true level of damages, and uncertainty as where the plaintiff know the damage level but the defendant is uncertain about the damages caused to the plaintiff.” *Id.*

⁴⁷ *Id.* at 406.

⁴⁸ *Id.* at 410.

⁴⁹ *Id.* at 409.

⁵⁰ *Id.* at 410.

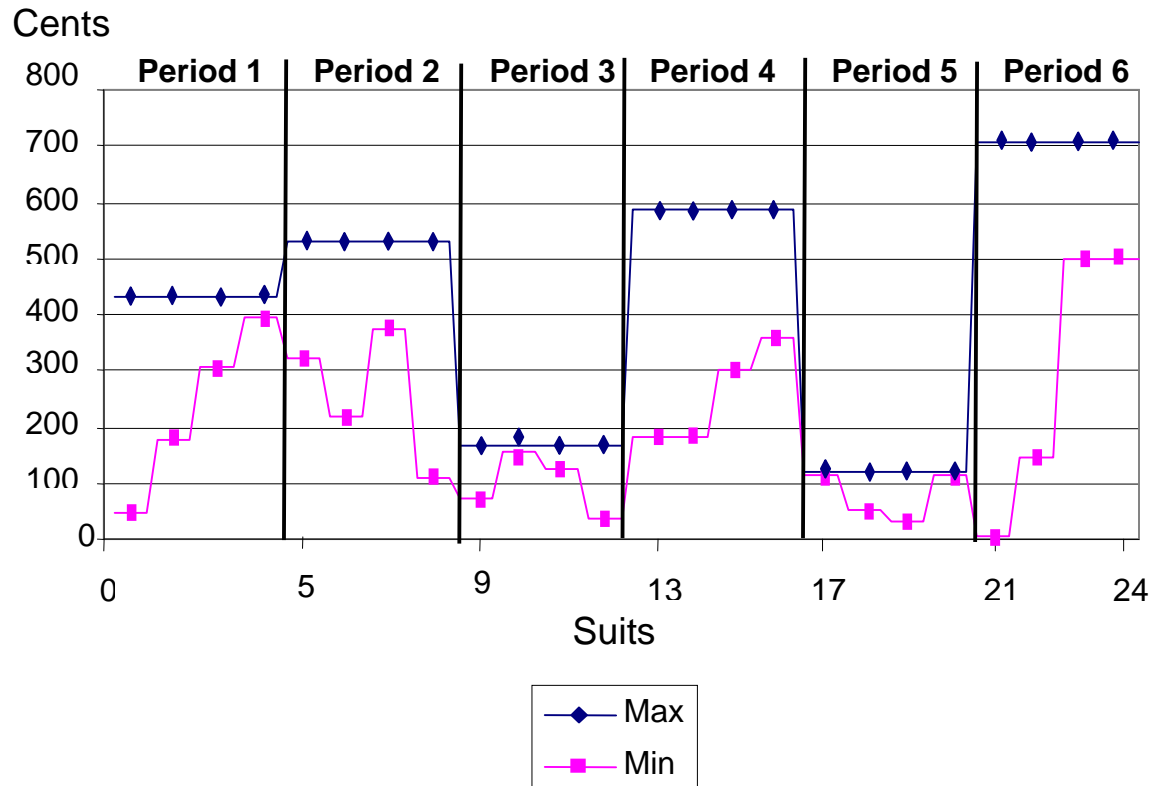
were simulated. We modeled harm as the interaction between the defendant's act and the plaintiff's susceptibility evaluated in monetary terms. Each plaintiff incurred a level of harm which had an uncertain causal relationship to the defendant's action. This uncertainty produced a range of potential court awards bounded below by Min and above by Max, where Min and Max were related as follows:

$$\mathbf{Min = Max \times C.}$$

The factor C, between 0 and 1, captured the merit of the plaintiff's claim, whereas Max denoted the maximum damage awardable to any claimant. In this experiment Max was an equiprobable random number between 0 and 1000.

This study considers the results of sixteen experiments. Each experiment involved eight subjects, four acting as defense attorneys and four as plaintiff's attorneys. Every experiment was divided into six periods. Each period consisted of four suits that arose out of a single action taken by the defendant. This resembles the real-world situation in which a defendant took some action that caused harm to four different parties, each of whom is then represented by the same attorney. For design purposes, all four defendants caused the same level of harm in a given period and encountered an identical set of plaintiffs.

Figure 1 shows the sequence of Min and Max values encountered by each subject in the course of one experiment. Four pairs of subjects experienced this environment simultaneously, giving us a total of 96 suits in each experiment.

Figure 1: Economic Environment

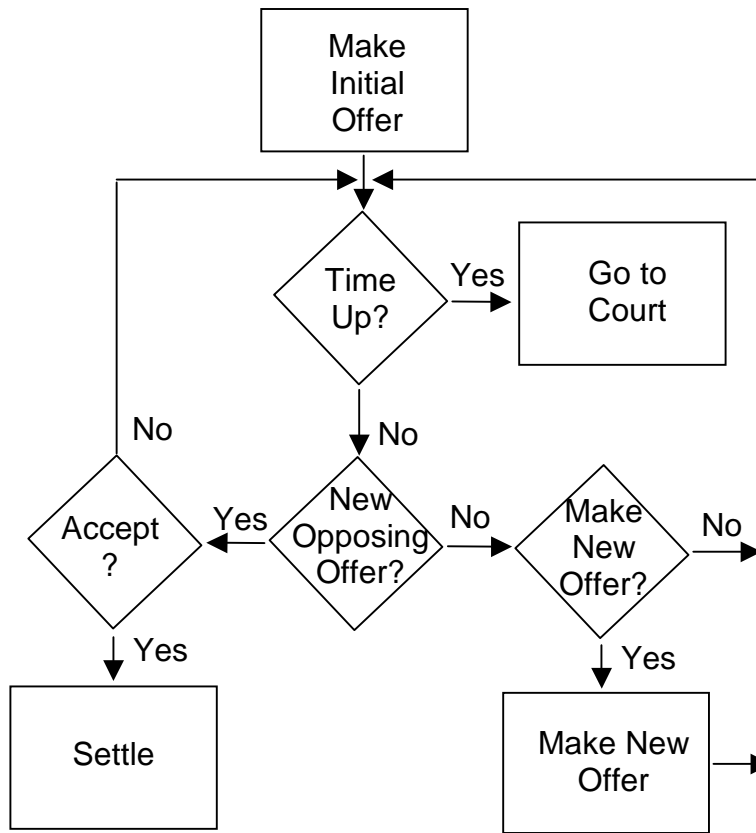
In Period 1, for example, every defendant's attorney, representing a single defendant, was paired with a plaintiff's attorney, representing four different plaintiffs. These four suits, each with a different C-value, were filed in the order shown. In Period 2, each defense attorney was paired with another randomly selected plaintiff's attorney, who again represents four different plaintiffs. This process of re-matching at the start of each new period continued throughout the experiment.

B. The Legal Process

In this study, the subjects participated in the pretrial bargaining process shown in the flowchart in Figure 2. Before each suit began, the plaintiff's and defendant's attorneys were each given information about some or all of

Max, Min, and C, to enable them to estimate the magnitude of the plaintiff's harm.

Figure 2: The Legal Process



The plaintiff's attorney initiated the suit by paying a fee and submitting a compensation request to the defendant's attorney. The plaintiff's attorney was required to initiate every suit.

Bargaining continued until a predetermined amount of time had elapsed. If no settlement had been reached within this time, the attorneys were required to pay an additional fee to have the court settle the dispute. The court was modeled as an equiprobable random decision between Min and Max. Subjects were informed that the court judgment would be equally probable, but, as described in subsection c, they did not know the actual range of Min and Max in the asymmetric information treatment. On the other hand, if either attorney accepted the current opposing offer before the

time ran out, then the parties settled out of court, avoiding the additional court fees and the court's decision.

C. Experimental Treatments

This study consists of three treatments arranged in a 2x2x2 design. (See Table 1) The primary goals of this design were (1) to test the effectiveness of Section 998, California Code of Civil Procedure, in promoting out-of-court settlements; (2) to test the effects of information asymmetries produced by disclosure rules, and (3) to look at the effect of court costs on settlement decisions.

The first treatment studies cost-shifting by comparing Section 998 to the American Rule, a simple no cost-shifting environment. In the case of Section 998, any party who turned down a settlement offer that would have been better for him than the court's ultimate decision must pay the legal costs of both sides. In the case of the American Rule, each party is strictly responsible for his own expenses. Eight experiments were conducted using Section 998 and eight using the American Rule.

A second treatment studies the effects of changing the information available to the parties. For half of each experiment (three periods), information given to the parties was both symmetric and complete. Both the plaintiff's attorney and the defense attorney knew the upper and lower bound for every claim as well as its merits. For the other half of each experiment, however, information was incomplete and asymmetric. In this treatment, the defense attorney only knew the upper bound (Max), while the plaintiff's attorney only knew merits of the claim (C). Neither party knew the lower bound (Min). In eight of the experiments, symmetric information was presented first, while in the other eight, asymmetric information was presented first.

The third treatment varies the cost of taking a case to trial. Within each cost-shifting condition, we ran eight experiments with 50-cent court fees and eight experiments with 150-cent court fees. In the case of Section 998, this translates to increasing the penalty for rejecting favorable settlement offers. (An offer is deemed favorable if it is better for the party in question than the court-awarded decision.) Thus, under the low-fee version of Section 998, rejection of a favorable offer results in a penalty of 100 cents; under the high-fee condition, however, this penalty is increased to 300 cents. The high-fee condition captures the inclusion of attorney's fees as

recoverable “costs” under Section 998.⁵¹

Table 1 is also divided according to the values of Max and C. For half of each experiment (3 periods), the defendant’s action produced a high potential court award ($Max \geq 500$); in the other three periods, Max was below 500. Similarly, in each experiment, half of the suits had high merit ($C \geq 0.5$), while the other half had low merit. There are a total of 48 suits in every cell of Table 1.

**Table 1: Treatment Matrix
48 Suits in Each Block**

		SYMMETRIC				ASYMMETRIC			
		AMER.	998	AMER.	998	AMER.	998	AMER.	998
High FEE		1	2	3	4	17	18	19	20
		HIGH Max LOW C		HIGH Max HIGH C		HIGH Max LOW C		HIGH Max HIGH C	
Low FEE		5	6	7	8	21	22	23	24
		LOW Max LOW C		LOW Max HIGH C		LOW Max LOW C		LOW Max HIGH C	
High FEE		9	10	11	12	25	26	27	28
		LOW Max LOW C		LOW Max HIGH C		LOW Max LOW C		LOW Max HIGH C	
Low FEE		13	14	15	16	29	30	31	32
		LOW Max LOW C		LOW Max HIGH C		LOW Max LOW C		LOW Max HIGH C	

⁵¹ See e.g., Miller, *supra* note 14, and Shapard, *supra* note 35

D. Experimental Procedures

The subjects for this study were primarily undergraduate students from George Mason University, recruited by e-mail or by flyers distributed on campus. Most had participated in previous behavioral experiments, but all were new to this particular design. They were paid for arriving on time in addition to their earnings in the experiment.

The experiments were conducted in the laboratories of the Interdisciplinary Center for Economic Science and the Center for the Study of Neuroeconomics at George Mason University. The laboratories contained computer terminals for the subjects, separated by partitions to ensure individual privacy. Talking between participants was not allowed.

Upon entering the laboratory, each subject was randomly assigned the role of defense attorney or plaintiff's attorney. They continued in these roles for the duration of the experiment. The subjects were seated at networked computer terminals and told to read through a set of online instructions. Any questions were answered in the hearing of the whole group before the start of the experiment.

The screen seen by a typical plaintiff's attorney is shown in Figure 3. In this example, the case had a C-value of 0.80, indicating strong merit, although the maximum awardable damage was only 100.

Figure 3: A Typical Plaintiff's Attorney's Task Screen

The screenshot shows a web interface for a negotiation task. At the top, it displays 'I admin' on the left and 'User' and 'Result' links in the center. Below this is a header bar with 'User two', 'Player T', 'Period 1', and 'Cash 1000'. The main heading is 'Starting Negotiation'. Below the heading is a table with columns: Transaction, Min, =, Max, *, C, Your Offer, Counterparts Offer, and TimeLeft. The first row of data shows Transaction 1, Min 80, =, Max 100, * 0.8, Your Offer 92, Counterparts Offer 83, and TimeLeft 1:20. A 'Send' button is located to the right of the table. Below the table, the text reads 'You accept an offer by sending back the same offer'.

Transaction	Min	=	Max	*	C	Your Offer	Counterparts Offer	TimeLeft
1	80		100	0.8		92	83	1:20

To guard against cultural preconceptions, the subjects were not told the

legal nature of the experiment. Instead of “defense attorney” or “plaintiff’s attorney” their roles were given to them as “Player D” or “Player T.” Other legal terminology was also excluded; suits were referred to as “rounds” and the court was introduced as “the computer.”

We provided the following incentives to the subjects. Each defense attorney received a budget at the beginning of each period, from which he had to finance the suits brought against his client. He was allowed to keep whatever remained of these budgets at the end of the experiment. Plaintiffs’ attorneys received half of every settlement obtained for their clients minus all court expenses.⁵²

To reduce the risk of bankruptcy during the experiment, each defendant’s attorney began the experiment with 2000 cents and received a fresh budget of 1500 cents at the start of every period. After all lawsuits and court fees had been subtracted, the defendant’s attorney kept the remaining sum as his earnings for the experiment. Each plaintiff’s attorney began the experiment with 1000 cents. The plaintiff’s attorney did not receive further endowments, but kept half of every settlement or decision, minus the initiation fees and any court fees, as his earnings. Every subject could see his accumulated earnings throughout the experiment. (See the box labeled “Cash” in Figure 3).

As shown in Figure 3, the latest offers were displayed in boxes labeled “Your Offer” and “Counterparts Offer.” To accept an offer, a subject simply repeated his counterpart’s offer as his offer. Bargaining lasted for up to two minutes. If the parties reached an agreement within the allotted time, the defendant’s attorney paid the negotiated amount from his budget and the plaintiff’s attorney kept half of this as payment. The other half was paid to the simulated plaintiff. If they did not agree, the computer, acting as the

⁵² It is customary for the client to pay court costs, travel expenses, and other litigation costs. In the experiment, clients are not represented by a subject who negotiates with his or her attorney. While this is an interesting line of research, it detracts from studying the adversarial relationship between plaintiffs and defendants. In order to focus on the adversarial nature of torts the principal/agent problem is minimized by having the plaintiff’s attorney share the same incentives as the plaintiff.

It is customary for defendants to pay their attorneys on an hourly basis. However, the type of defendant modeled here is a repeat player and as such can monitor the performance of his attorney over time. Under this arrangement the defendant has more control over the litigation costs than merely being charged an hourly rate. We model this by giving each defense attorney a budget. This allows us to minimize the principal/agent problem and to focus on the adversarial nature of torts.

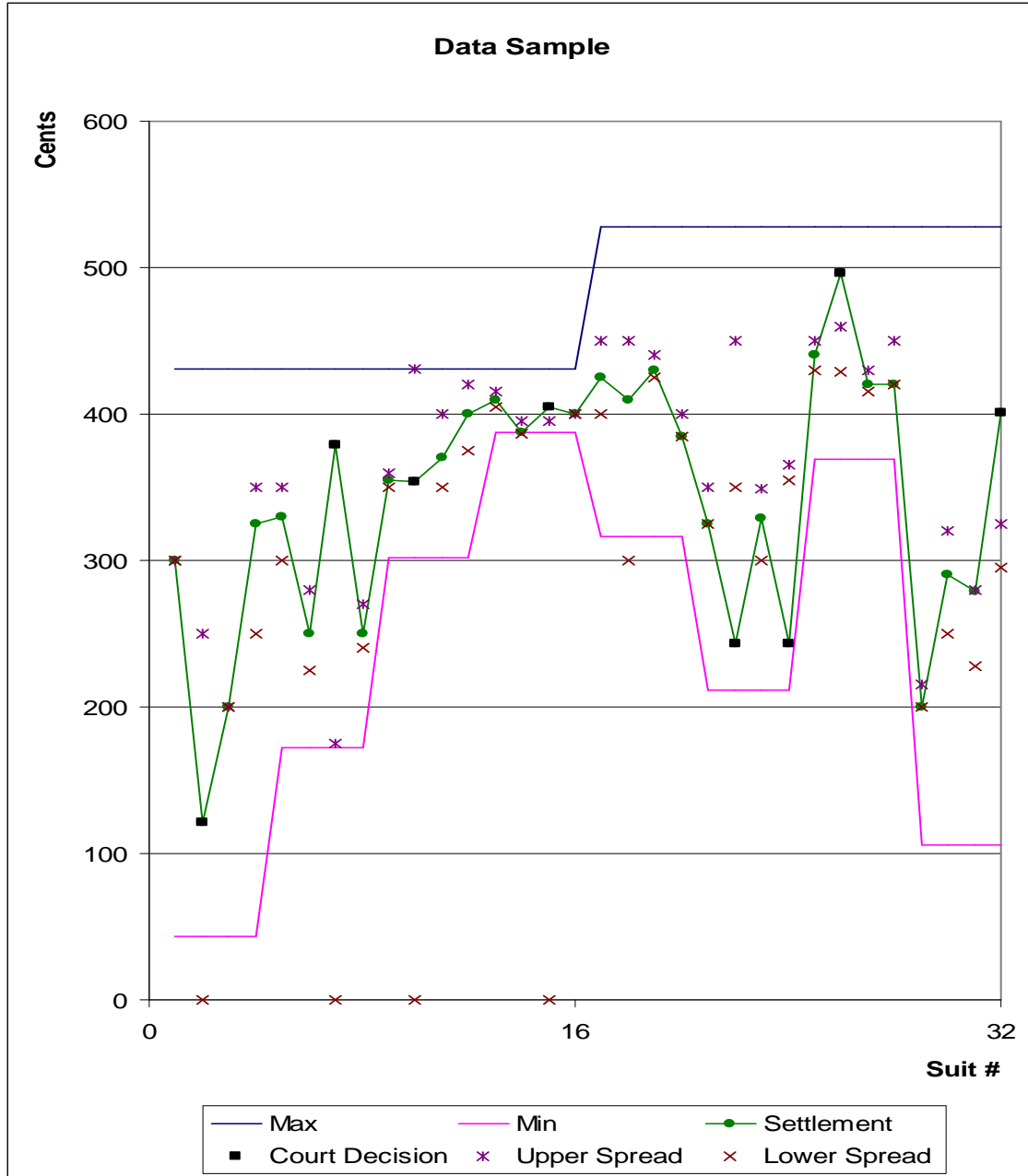
court, imposed a random decision between Min and Max and both attorneys were assessed a court fee. The court decision was paid from the defendant's budget and awarded in equal shares to the plaintiff and his attorney.

III. RESULTS

A. Measurement

In each experiment, we recorded the series of offers made by each attorney and whether or not a settlement was reached. In this paper we report the following data: (1) The final offers, before settlement or court decisions, (2) the settlement amount, if applicable, and (3) the court decision, otherwise. Figure 4 shows this data for all four pairs of subjects during the first two periods of one experiment. "Upper Spread" indicates the last offer submitted by the plaintiff's attorney prior to the decision (settlement or trial). "Lower Spread" indicates the last offer submitted by the defense attorney. Solid circles indicate a settlement, while solid squares indicate a court decision.

Figure 4: Data Sample (2 Periods)



B. Data Analysis

1. Settlements

First we consider the effects of our treatments on subjects' tendency to reach a settlement before trial. Settlement rates for each condition are reported in Table 2.

Table 2: Settlement Rates

		Percentage of Suits that Settled									
		Percentage of Settlements that Favored Plaintiff (Settlement - Midpoint > 0)									
		48 Suits in Each Block									
		SYM				ASYM					
Max		American	\$ 998	American	\$ 998	Max		American	\$ 998	American	\$ 998
		1	2	3	4			17	18	19	20
High Fee		85.42	89.58	77.08	85.42			83.33	83.33	81.25	83.33
		21.95	34.88	13.51	12.20			45.00	37.50	15.38	17.50
		5	6	7	8			21	22	23	24
Low Fee		60.42	58.33	56.25	64.58			79.17	60.42	60.42	58.33
		17.24	35.71	14.81	35.48			15.79	48.28	10.34	25.00
		9	10	11	12			25	26	27	28
High Fee		81.25	77.08	91.67	87.50			66.67	75.00	50.00	45.83
		48.72	56.76	43.18	50.00			75.00	77.78	41.67	68.18
		13	14	15	16			29	30	31	32
Low Fee		62.50	66.67	83.33	75.00			47.92	43.75	33.33	29.17
		36.67	59.38	32.50	38.89			69.57	76.19	25.00	50.00
		C						C			

The top entry in each cell of Table 2 gives the percentage of suits in that cell for which the subjects were able to reach a settlement.

A t-test was used to make a cell by cell comparison ($N = 48$) of settlement rates between the American rule and Section 998 we find only the comparison of cells 21 and 22 (see Table 1) shows a significant difference at the .05 level. This difference goes away when we compare 21 + 29 with 22 + 30. Thus we are led to conclude that the American rule and Section 998 have the same effect on pretrial settlement rates.

Next, a t-test was used to make a row by row comparison ($N = 192$) of settlement rates between the High Fee and Low Fee treatments we find a significant difference at below the .01 level for all 4 comparisons. We are led to conclude that the increase in court fees creates a strong incentive for early settlement.

Finally, a t-test was used to make a row by row comparison ($N = 192$) of settlement rates between the Symmetric (SYM) and Asymmetric (ASYM) information treatments. We find a significant difference at below the .01 level for the Low Max cells (see Table 1) in both the High and Low Fee treatments. We find no significant differences in the High Max cells. We are led to conclude that the asymmetry of information greatly reduces settlement rates when the maximum potential court award (Max) is low.

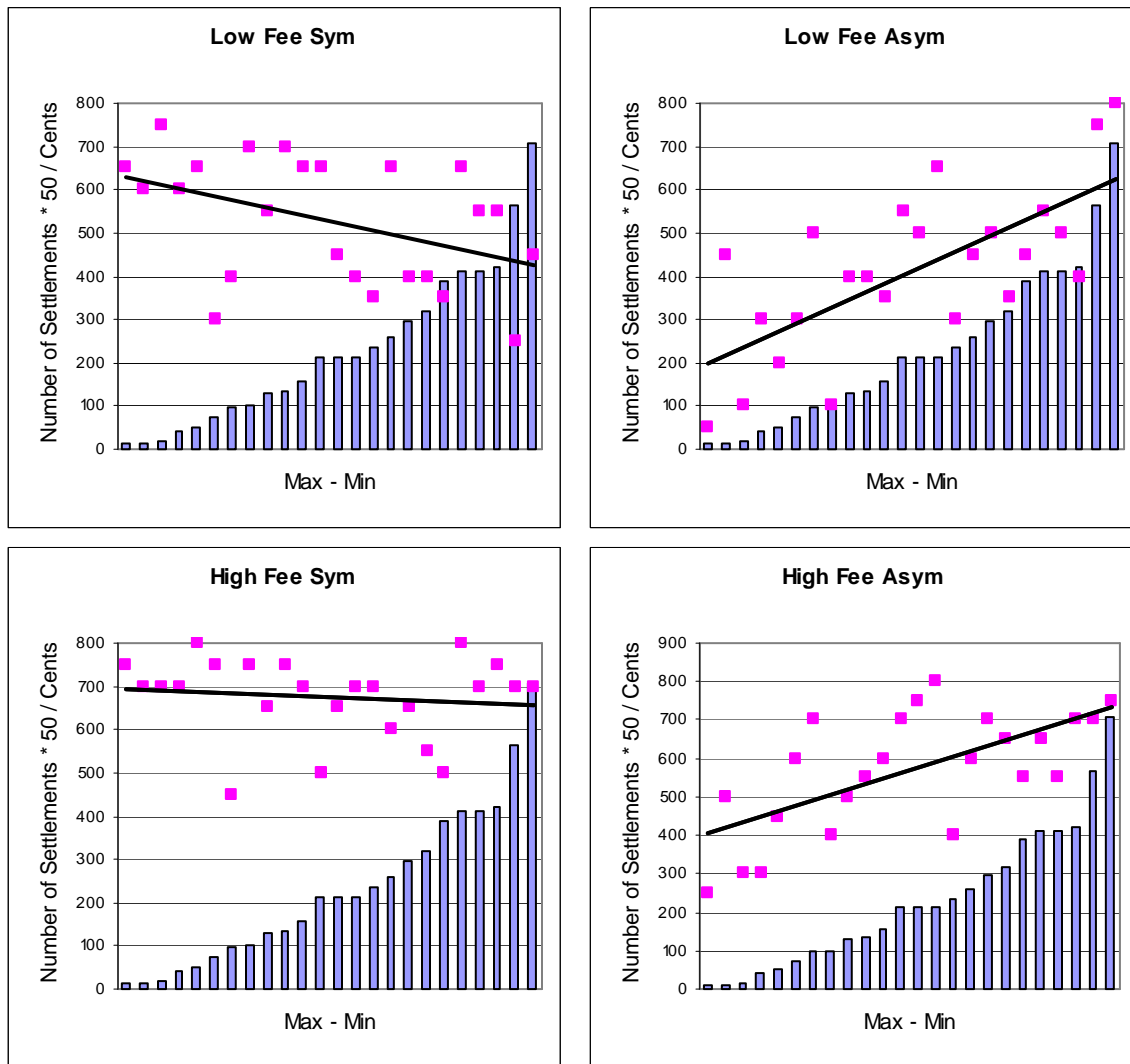
The second entry in each cell of Table 2 indicates the percentage of settlements that were favorable to the plaintiff's attorney. A settlement is deemed favorable to the plaintiff's attorney, relative to the expected court award, if it is greater than the midpoint between Min and Max.⁵³ Consistent with their threat points in this experiment, plaintiff's attorneys often settled below the midpoint, although, in all but two of the comparisons, plaintiff's attorneys did better under Section 998 than under the American rule. We are led to conclude that Section 998 improves outcomes for plaintiffs over the American rule.

Figure 5 examines how the settlement rates vary with the level of uncertainty about the court's decision. The main source of uncertainty under symmetric information is the range of the court's decision. When the difference between Max and Min is large, the court's decision is more uncertain, since all values over this range are equiprobable. The columns in Figure 5 represent the uncertainty level, i.e., $\text{Max} - \text{Min}$, for each of the 24 suits. The suits have been sorted from least uncertainty to greatest. The

⁵³ In this experiment no performance measure exists for deciding whether a particular settlement is 'fair' to the plaintiff, the defendant, or society as a whole. Instead we determine how favorable or unfavorable the outcome is, in a more limited sense, by comparing settlement outcome to expected court decisions.

squares show the number of settlements that occurred in each suit, multiplied by 50 for scaling purposes. The American Rule and Section 998 treatments have been combined for this analysis, since there are no significant differences in settlement rates between them.

Figure 5: Settlement Rates and Increasing Uncertainty in Court Decisions



Under symmetric information, we find that subjects settle the low-uncertainty cases more frequently with settlement rates falling as

uncertainty increases. This is most evident in the Low Fee Sym cases, although the effect is present in the High Fee Sym cases as well. However, the strong incentives for settlement produced by the High Fees this trend less pronounced. The opposite effect occurs in the asymmetric information cases. We believe this is due to the additional uncertainty caused by differences in expectations under asymmetric information.

Under asymmetric information, the defendant knows Max, and that C is equally likely between 0 and 1 with a mean of 0.5. Therefore the defendant's expected min is $E_{Min} = 0.5 * Max$. The defendant's anticipated court award is then $DAC = E_{Min} + (Max - E_{Min})/2 = 0.75 * Max$. The plaintiff knows C so $E_{Max} = 500$ and $E_{Min} = C * 500$. Therefore, the plaintiff's anticipated court award is $PAC = E_{Min} + (E_{Max} - E_{Min})/2 = 250(1+C)$. We can now measure the additional uncertainty caused by a lack of mutual expectations as the unsigned difference between defendant's and plaintiff's expected court awards, i.e., $U = |DAC - PAC|$. For this model, over optimism occurs when $PAC > Min + (Max - Min)/2$ for the plaintiff, or when $DAC < Min + (Max - Min)/2$ for the plaintiff, or when $DAC < Min + (Max - Min)/2$.

Figure 6 shows how settlements rates are affected by differences in expectations U. Notice that settlement rates tend to decline as U increases, and for $U > 125$ the variance in settlement rates increases dramatically.

Figure 6: Differences in Expectations Affect Settlement Rates

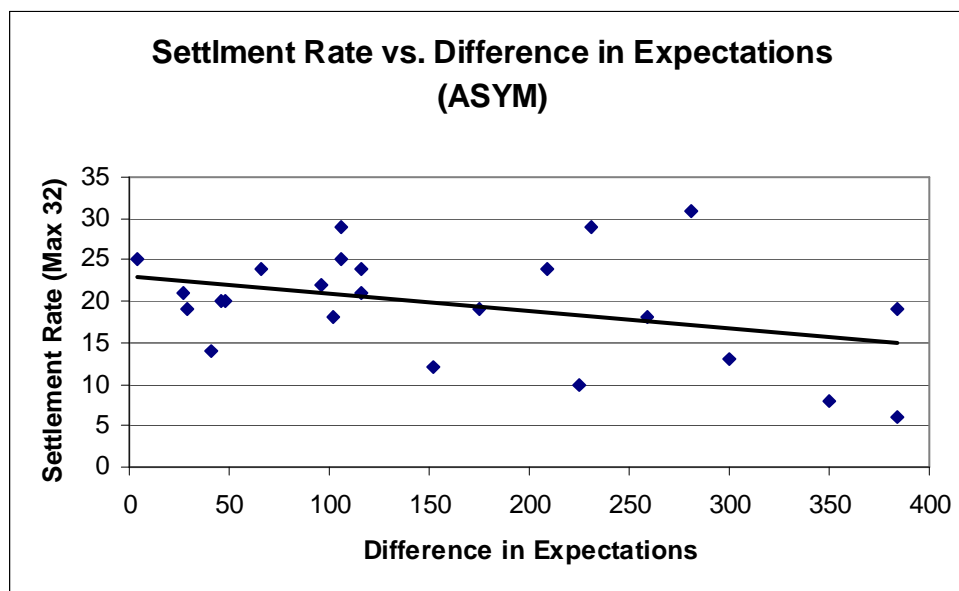
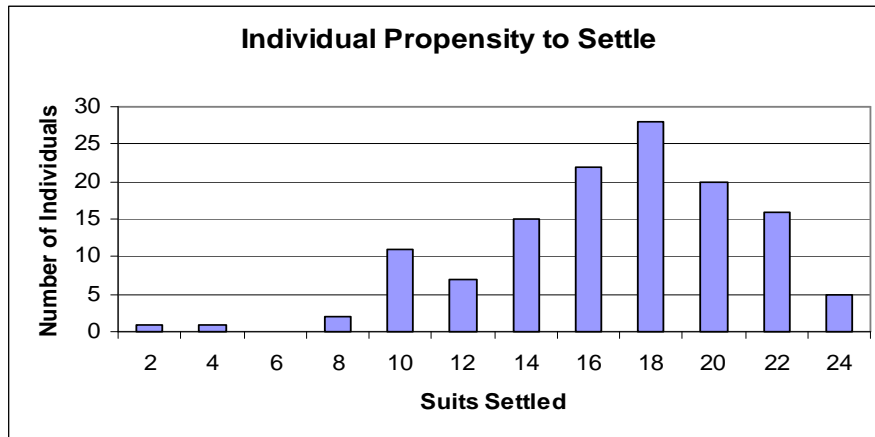


Figure 7 shows the number of subjects who settled a given number of their 24 suits. For example, 27 subjects settled either 17 or 18 of their suits. The number of settlements appears to be negative binomially distributed with a mode of 18 and a mean of 16.25.

Figure 7: Individual Propensity to Settle



2. Efficiency

Several lawsuits in each treatment are inefficient by virtue of the experimental environment. A lawsuit is considered *ex ante* inefficient if $\text{Max} - \text{Min} \leq 2 * \text{CourtFee}$. If this condition holds, the parties always stand to save money by settling the dispute without going to court. Cost-minimizing subjects would never proceed to trial under such condition. Figure 8 shows the number of *ex ante* inefficient cases within each treatment, as well as how many of them actually went to court. Notice that by this measure, inefficiency was quite low. Furthermore, high court fees tended to decrease the percentage of inefficient cases that went to court.

Figure 8: Ex Ante Inefficiency

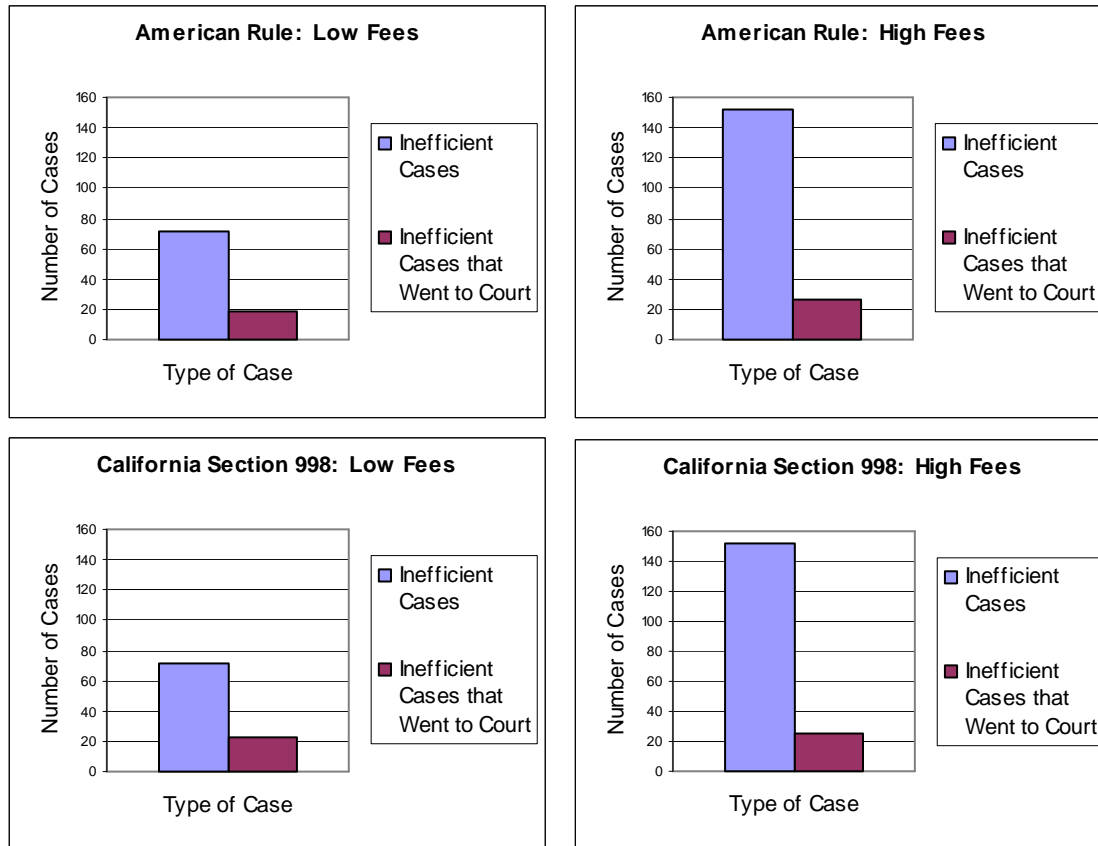


Figure 9 examines a stricter definition of efficiency by comparing the total number of court cases in each treatment to the number of times when *either* party failed to cost-minimize in his decision to go to court. A defendant has failed to cost-minimize if the last offer received from the plaintiff is less than the expected court outcome plus the court fee., i.e.,

$$\text{Last_Opposing_Offer} < (\text{Min} + \text{Max})/2 + \text{Court_Fee}.$$

A plaintiff has failed to cost-minimize if the last offer received from the defendant is greater than the half the expected court decision minus the court fee, i.e.,

$$\text{Last_Opposing_Offer} > 1/2(\text{Min} + \text{Max})/2 - \text{Court_Fee}.$$

Clearly, if either of these conditions hold, at least one attorney would have been better off accepting the opposing attorney's offer instead of going to court. Since these calculations can only be made at the conclusion of the bargaining process, we refer to this form of inefficiency as *ex post* inefficiency. Notice that *ex post* inefficiencies are much more likely to occur than *ex ante* inefficiencies. Furthermore, high court costs tend to exacerbate this form of inefficiency.

Figure 9: *Ex Post* Inefficiency

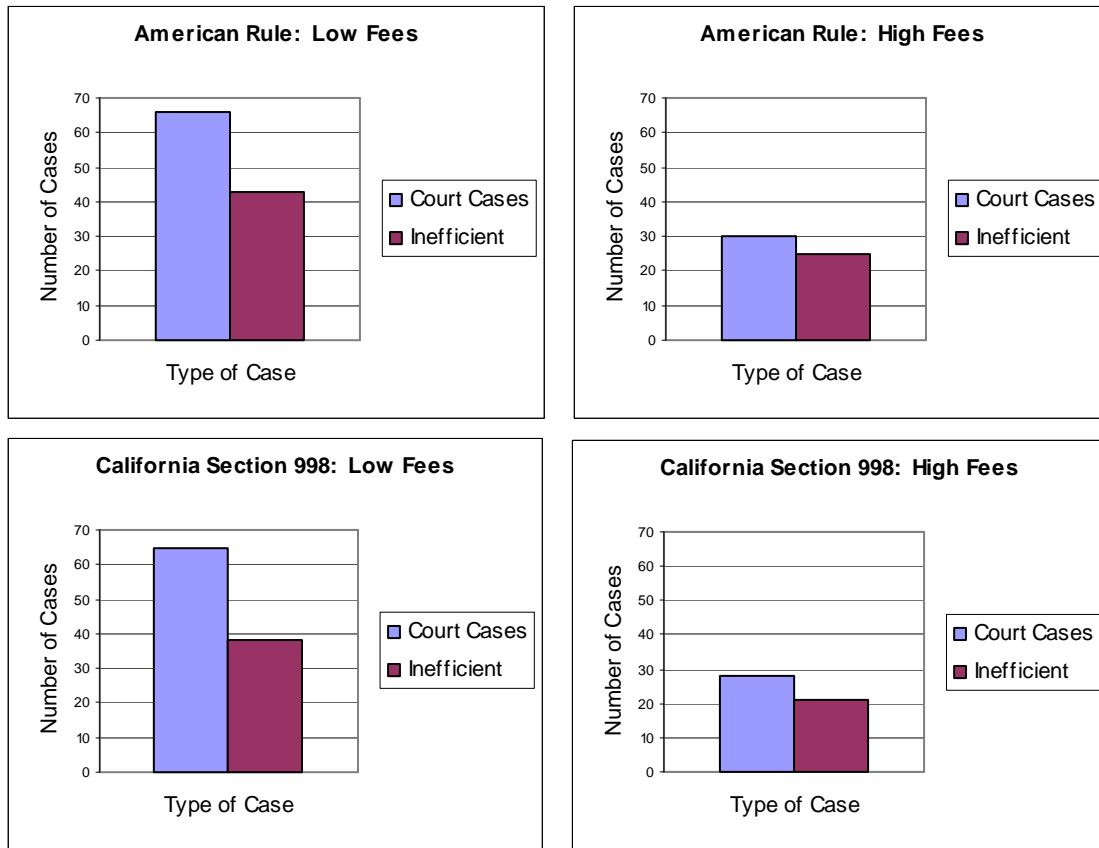
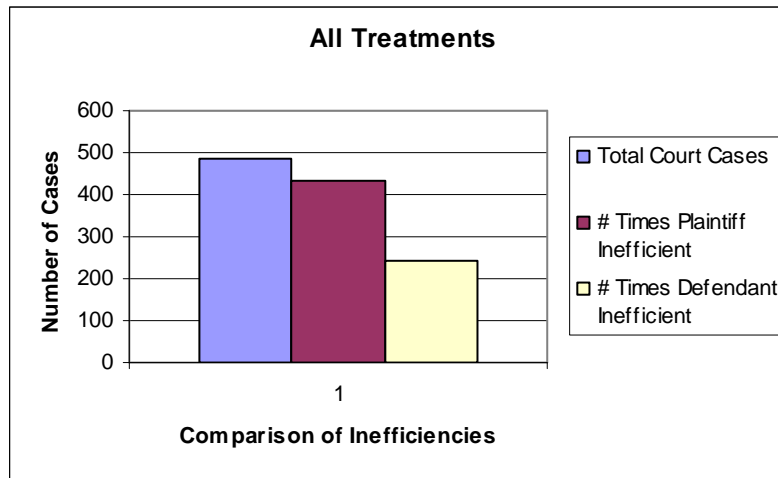


Figure 10 separates these inefficiency levels by role, demonstrating that plaintiffs are twice as likely as defendants to be the cause of *ex post* inefficiency.

Figure 10: Ex Post Inefficiency Sorted by Role

3. Fee-Shifting

The final analysis focuses exclusively on the effects of Section 998 on the distribution of court costs. The first row of each cell in Table 3 gives the number of times a penalty occurred (i.e., one party had to pay the court costs of both sides) compared to the total number of court cases. As can be seen, penalties were applied over 76% of the time. This implies that the majority of the subjects who went to court had rejected advantageous offers at some point during the negotiation process.

The second row of each cell in Table 3 breaks down the frequency of penalties between defense attorneys (D) and plaintiff's attorneys (P). We find a systematic difference in these frequencies only in the Low Max condition where plaintiff's attorneys are 4 times more likely to be penalized than defense attorneys.

Table 3: Analysis of Section 998 Penalties

Analysis of Section 998 Penalties

48 Suits in Each Block

Number of Times Penalty was Assigned / Total Number of Court Cases

	Max	Sym	Asym	Sym	Asym
High Fees		2	18	4	20
		4 / 5	8 / 8	6 / 7	7 / 8
		D = 0, P = 4	D = 4, P = 4	D = 6, P = 0	D = 4, P = 3
Low Fees		6	22	8	24
		18 / 20	12 / 19	14 / 17	13 / 20
		D = 7, P = 11	D = 6, P = 6	D = 11, P = 3	D = 9, P = 4
High Fees		10	26	12	28
		7 / 11	11 / 12	3 / 5	15 / 26
		D = 1, P = 6	D = 0, P = 11	D = 2, P = 1	D = 4, P = 11
Low Fees		14	30	16	32
		16 / 16	25 / 27	6 / 12	24 / 34
		D = 5, P = 11	D = 3, P = 22	D = 1, P = 5	D = 5, P = 19

C

IV. CONCLUSIONS

In our experiments we show that a symmetric fee shifting rule, such as Section 998, California Code of Civil Procedure, does not change the tendency to settle before trial. However, Section 998 produces settlement outcomes more favorable to plaintiffs than does the American rule. This suggests that Section 998 makes defendants more cautious during negotiations with plaintiffs. This interpretation is further substantiated by the fact that defendants were penalized less often for rejecting favorable

offers, only 67 times, compared to plaintiffs who were penalized 120 times.

In other comparisons, our subjects tend to behave rationally when confronted with changes in the magnitude of court costs. The overall settlement rate under low costs was 58.7% compared to 77.7% under high costs. Also, cases settled more often under symmetric information: 75.1% of the time, compared to 61.3% under asymmetric information. Overall, this suggests that subjects behave rationally with respect to better information and increased opportunity cost of going to court.

Symmetric information, as promoted by liberal discovery rules, improves the efficient use of the courts. In particular, the court is used less when there is a smaller range of potential outcomes producing less uncertainty among participants. In the asymmetric treatment the efficient use of the courts tends to decrease. In particular, additional uncertainty about the potential outcome can cause to become overly optimistic leading to bargaining failures

In the asymmetric information treatments, most of the difference in settlement rates can be attributed to cases with low maximum potential court awards (Max). Our interpretation is that plaintiffs, not knowing Max, are likely to have too optimistic an idea of what they can get in court and therefore to reject reasonable defendant offers. This interpretation is further substantiated by the excessive penalizing of plaintiffs in the low Max conditions under Section 998. (See Table 3) Consider also the significant improvement in settlements in the low Max conditions, favoring plaintiffs. (See Table 2)

Finally, when we look at efficiency, as measured by whether or not the court should have been avoided, we observe an interesting difference when we compare *ex ante* to *ex post* efficiency. First, using an *ex ante* measure of efficiency, we observe that 20% of the cases that should have settled actually ended up in court. While efficiency is not affected by the switch between the American rule and Section 998, efficiency measures do improve under higher court costs. This result is consistent with the increase in settlement rates due to higher court costs.

However, when we look at *ex post* inefficiency by taking into account the final offers that were made before going to court, we see a dramatic decrease in inefficiency, with 67% of the cases that should have settled ending up in court. Furthermore, this inefficiency is exacerbated by high court costs. Since *ex ante* efficiency is more likely than *ex post* to be

measured in field studies, these results suggest that a more cautious interpretation of field data is required. It may be that rules which encourage the taking of final offers could have a dramatic effect on the overall efficiency in use of the courts.