

DAMAGE CAPS, MOTIVATED ANCHORING, AND BARGAINING IMPASSE

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ABSTRACT

This paper reports results from a bargaining experiment testing the effect on settlement rates of a damage cap set much higher than the value of the underlying claim. We presented 462 student subjects with materials outlining a personal injury lawsuit and permitted randomly assigned subject pairs to negotiate a pretrial settlement. We find that imposition of a \$1 million cap reduced the settlement rate through a process termed “motivated anchoring,” in which a relatively high damage cap disproportionately anchors the plaintiff’s estimate of the likely damage award. The result is a widened disparity in opposing litigants’ judgments and less settlement. These results contrast with findings from previous experiments where a relatively low cap constrains the parties’ judgments and produces more settlement. This pair of results suggests the effect of a cap will depend on its size relative to the stakes of the case.

THE adjudication of civil disputes in this country often engenders controversy and criticism. Because of the public perception that there is too much litigation,¹ policy makers have debated and periodically initiated profound changes in the civil justice process. In this paper, we investigate one popu-

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¹ This perception is debatable based on recent litigation trends. Data from the National Center for State Courts indicate that for a sample of 16 states, tort filings have declined since 1986 and contract filings have declined since 1990. See Brian J. Ostrom & Neil B. Kauder, *Examining the Work of the State Courts, 1995: A National Perspective* from the Court Statistics Project 26 (National Center for State Courts report 1996).

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lar tort reform—capping the amount of damages obtainable by a plaintiff.² Reform advocates urge caps will quell litigation, in part by increasing the proportion of cases that settle in lieu of trial.³

We investigated this point in earlier work with a bargaining experiment testing the effect of a cap on the pretrial settlement rate.⁴ Subjects received materials outlining a personal injury lawsuit, were designated as either plaintiff or defendant in the lawsuit, and were permitted to negotiate a pretrial settlement with a randomly assigned adversary. A judge's award determined the outcome for subjects failing to settle during a 20-minute negotiating period. For half the subjects, the judge's award was capped at \$250,000, while for the balance of subjects the award was uncapped. The \$250,000 cap increased the rate of pretrial settlement.

That prior study, however, left unresolved several issues that we pursue in the current paper. In the previous experiment, the case was large relative to the \$250,000 damage cap—the average settlement in the uncapped condition was \$490,000. The cap therefore narrowed the range of possible trial outcomes rather severely, producing convergence in the expectations of negotiating partners. Ultimately, this increased the rate of settlement. That work did not, however, investigate a cap set vastly higher than the likely outcome of the case.

There are two reasons for our interest in this circumstance. First, we believe it to be widely applicable, since caps often limit awards to at least several hundred thousand dollars, though in many lawsuits the amount in contention is far less. Second, we are interested in whether a cap provides an “anchor” or “focal point” for the litigants' beliefs about the value of the case. Indeed, this paper presents evidence that a very high cap “an-

² Cap legislation began during the medical malpractice insurance crisis of the mid-1970s and continues today. Current damage cap laws vary widely across the approximately 30 states that employ them. Some states limit noneconomic damages, defined as compensation for pain and suffering, loss of spousal services, and other “noneconomic” harms, while other states limit punitive damages. Some states cap awards only for particular classes of cases, such as product liability or medical malpractice, while other states limit damages in all cases. The formula for deriving the cap amount also varies, with some states limiting damages to a specified dollar amount and others employing a “multiplier,” which limits punitive or noneconomic damages to some multiple (usually two to four) of the compensatory damages awarded. For more extensive background about the history of damage caps and various capping methods, see Linda Babcock & Greg Pogarsky, *Damage Caps and Settlement: A Behavioral Approach*, 28 *J. Legal Stud.* 341 (1999).

³ For example, in 1991, President Bush's council on competitiveness produced a widely publicized report, which included a proposal to cap punitive damages at the amount of compensatory damages awarded. The council claimed its proposals were “geared toward reducing excessive and unnecessary litigation and decreasing the costs and time associated with resolving disputes.” See Dan Quayle, *Civil Justice Reform*, 41 *Am. U. L. Rev.* 559, 561 (1992).

⁴ Babcock & Pogarsky, *supra* note 2.

chors' litigants' judgments, and the effect is disproportionately larger for plaintiffs. As a result, a relatively high damage cap tends to widen the disparity in opposing litigants' judgments about the case and discourage settlement.

This paper is organized in the following manner. Section I reviews how a "contract zone" and the litigants' judgments about the likely trial result affect negotiation outcomes. The section then outlines four alternative depictions of the manner in which a damage cap can influence settlement. Section II describes the current experiment, which is similar to that reported in our earlier work,⁵ except that we raise the damage cap to \$1 million and reduce the severity of the plaintiff's injuries. Section III reports the results, and Section IV concludes.

I. LITIGANTS' JUDGMENTS AND DAMAGE CAPS

This section outlines how a damage cap can affect the settlement rate by influencing the litigants' judgments about the likely adjudicated outcome. We cull from both the law and economics and negotiation literatures to fashion a simple framework for the role of such judgments in pretrial negotiations. We focus on litigants' judgments because of their well-accepted influence over the formation of bargaining positions and the prospects for settlement.⁶ The presentation abstracts from the strategic interactions that occur once negotiations have begun, as these are the subject of a separate literature based largely in game theory.⁷

We assume litigants enter settlement discussions having determined their reservation value, or "bottom line" bargaining position. For the plaintiff, this is the lowest payment the plaintiff is willing to accept from the defendant in order to forgo a trial. For the defendant, the reservation value is the most he is willing to pay the plaintiff to avoid a trial. Two aspects of the bargaining environment determine the parties' reservation values—the cost of litigating the case to a verdict, and the alternative to a negotiated agreement, which in this context is the expected damage award after a trial.

On this second point, neither litigant can predict the trial result with perfect accuracy. Consequently, each litigant's beliefs can be summarized by

⁵ *Id.*

⁶ See William M. Landes, An Economic Analysis of the Courts, 14 *J. Law & Econ.* 61 (1971); Richard A. Posner, An Economic Approach to Legal Procedure, 2 *J. Legal Stud.* 399 (1973); and George L. Priest & Benjamin Klein, The Selection of Disputes for Litigation, 13 *J. Legal Stud.* 1 (1984).

⁷ See Andrew Daugherty, Settlement, in *Encyclopedia of Law and Economics* (B. Bogaert & G. De Geest eds. 1997).

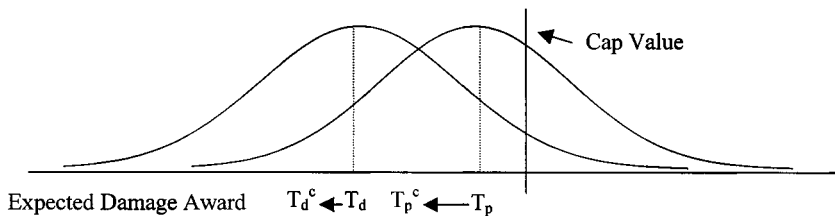


FIGURE 1.—Binding damage cap: truncates belief distribution

a subjective probability distribution over potential trial outcomes. Figure 1 presents two such belief distributions for a hypothetical negotiating pair.⁸ We note first that the plaintiff's beliefs are distributed across higher potential damage awards, consistent with the abundant empirical evidence that self-serving biases influence judgments in many domains, including litigation.⁹ Assuming risk neutrality, each litigant can summarize their distribution with one statistic, the mean (T).¹⁰ Since the plaintiff's distribution lies to the right of the defendant's distribution, T_p will likely exceed T_d .¹¹ The parties can avoid a trial if the aggregate litigation costs expected from trying the case exceed the belief disparity, $T_p - T_d$. This necessary condition for settlement is termed a contract zone.¹²

A contract zone influences settlement discussions in two important respects. First, under the law and economics approach to pretrial bargaining, settlement is impossible absent a contract zone.¹³ Second, there is evidence that, in a given case, settlement becomes more probable the larger the contract zone.¹⁴ Having already demonstrated the importance of the belief dis-

⁸ Though the distributions in Figures 1–4 are drawn normally for convenience, their actual shape is an empirical question. The current discussion does not depend on a particular distributional assumption.

⁹ See Linda Babcock & George Loewenstein, *Explaining Bargaining Impasse: The Role of Self-Serving Biases*, 11 *J. Econ. Persp.* 109 (1997).

¹⁰ We discuss later whether our predictions differ if parties are assumed to be risk averse.

¹¹ Howard Raiffa, *The Art and Science of Negotiation* 44–51 (1982).

¹² Introducing some notation, the reservation values of the plaintiff and defendant, respectively, are $RV_p = T_p - C_p$ and $RV_d = T_d + C_d$. If the maximum the defendant will pay to avoid trial exceeds the plaintiff's minimum demand, that is, $RV_d > RV_p$, settlement is possible. This condition can be restated as $T_p - T_d < C_p + C_d$, hence the proposition that settlement should be possible only if aggregate litigation costs exceed the belief disparity, $T_p - T_d$.

¹³ Richard A. Posner, *Economic Analysis of Law* 554–60 (4th ed. 1992).

¹⁴ See Linda Babcock, George Loewenstein, & Xianghong Wang, *The Relationship between Uncertainty, the Contract Zone, and Bargaining Efficiency*, 22 *J. Econ. Behav. & Org.* 475 (1995). For dissenting views, see David Bloom, *Is Arbitration Really Compatible with Bargaining?* 20 *Indus. Rel.* 233 (1981); and Vince Crawford, *A Theory of Disagreement in Bargaining*, 50 *Econometrica* 607 (1982).

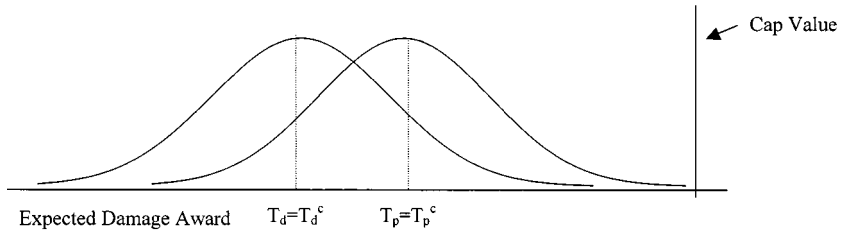


FIGURE 2.—Nonbinding cap: no belief distortion

parity in determining the existence and size of a contract zone, this section next outlines several alternative depictions of the manner in which a cap may affect the parties' beliefs.

Scenario 1. Binding Cap Truncates Belief Distributions

Figure 1 depicts a low damage cap relative to the parties' belief distributions over potential damage awards. We term this low cap "binding" because it truncates a portion of each distribution, rendering impossible certain trial awards the litigants would have thought possible absent a cap.¹⁵ The area of probability above the truncation point is added to the existing probability mass at that point. Because the plaintiff's belief distribution is to the right of the defendant's distribution (reflecting self-serving biases), a binding cap truncates a larger portion of the plaintiff's distribution, producing a commensurately larger reduction in the plaintiff's mean estimate.¹⁶ Figure 1 depicts this circumstance with a larger arrow from T_p to T_p^c than the one connecting T_d to T_d^c . Our earlier work examined just such a cap, which ultimately improved prospects for settlement.¹⁷ On average, the binding cap produced a convergence in the trial predictions of negotiating pairs and a higher settlement rate.

Scenario 2. Nonbinding Cap without Belief Distortion

Figure 2 shows a high damage cap relative to the parties' belief distributions over potential damage awards. We term this high cap "nonbinding"

¹⁵ Our use of the word "binding" should not be interpreted to mean compulsory. In all four scenarios the damage cap is assumed to be compulsory. We term a cap "binding" if it precludes certain damage awards a litigant would have thought possible.

¹⁶ If the parties are instead risk averse, a cap could have the opposite effect if the degree of risk aversion is large enough to offset the extent of self-serving biases. However, the magnitude of self-serving biases found here is quite substantial, thus reducing the likelihood this circumstance would occur.

¹⁷ Babcock & Pogarsky, *supra* note 2.

because it exceeds the largest damage award either litigant would have thought possible. Under this scenario, a nonbinding cap produces no belief distortion and no ensuing effect on the judgmental disparity and leaves the settlement rate intact.

Scenario 3. Nonbinding Cap with Anchoring

We consider here the possibility that a nonbinding cap influences the parties' expectations by "anchoring" the litigants' predictions of the adjudicated result. Simply put, anchoring refers to the influence of a numerical reference point over an ultimate judgment. There is evidence for anchoring across a variety of judgmental domains in the decision-making literature. These include the pricing of gambles,¹⁸ probability estimation,¹⁹ judgments about oneself,²⁰ and predictions about the future.²¹ A seminal study by Amos Tversky and Daniel Kahneman confirms the robustness of the phenomenon, even for anchors that are patently irrelevant to the ultimate judgment.²²

Researchers have recently explored the implications of anchoring for legal judgments. Both G. B. Chapman and B. H. Bornstein²³ and Reid Hastie, David Schkade, and John Payne²⁴ found a positive correspondence between the dollar request of plaintiffs' attorneys during closing arguments and the

¹⁸ Bruce W. Carlson, Anchoring and Adjustment in Judgments under Risk, 16 *J. Experimental Psychol.* 665 (1990); Eric J. Johnson & David A. Schkade, Bias in Utility Assessments: Further Evidence and Explanations, 35 *Mgmt. Sci.* 406 (1989).

¹⁹ S. Plous, Thinking the Unthinkable: The Effects of Anchoring on Likelihood Estimates of Nuclear War, 19 *J. Applied Soc. Psychol.* 67 (1989).

²⁰ Daniel Cervone & Philip K. Peake, Anchoring, Efficacy, and Action: The Influence of Judgmental Heuristics on Self-Efficacy Judgments and Behavior, 50 *J. Personality & Soc. Psychol.* 492 (1986).

²¹ Fred S. Switzer III & Janet Sniezek, Judgment Processes in Motivation: Anchoring and Adjustment Effects on Judgment and Behavior, 49 *Org. Behav. & Human Decision Processes* 208 (1991).

²² The authors asked subjects to estimate the percentage of African countries in the United Nations. Before subjects answered this question, the authors spun a wheel numbered 1 to 100, which was rigged to land on 10 for half the subjects and 65 for the other half. After the spin, the experiments asked subjects whether their estimate was higher or lower than the result of the spin. Then they asked subjects to estimate the percentage. Subjects for whom the wheel landed on 10 gave an average estimate of 25 percent, while subjects for whom the wheel landed on 65 gave an average estimate of 45 percent. See Amos Tversky & Daniel Kahneman, Judgment under Uncertainty: Heuristics and Biases, 185 *Science* 1124 (1974).

²³ G. B. Chapman & B. H. Bornstein, The More You Ask for the More You Get: Anchoring in Personal Injury Verdicts, 10 *Applied Cognitive Psychol.* 519 (1996).

²⁴ Reid Hastie, David A. Schkade, & John W. Payne, Juror Judgments in Civil Cases: Effects of Plaintiff's Requests and Plaintiff's Identity on Punitive Damage Awards, 23 *Law & Human Behav.* 445 (1999).

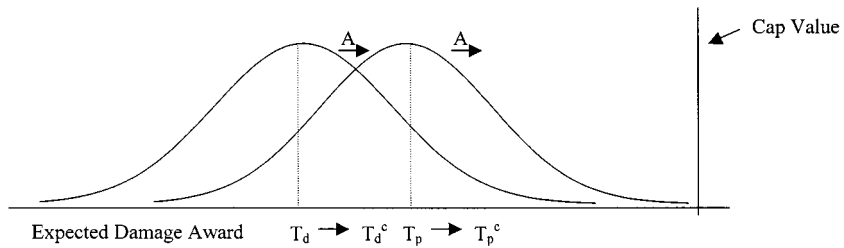


FIGURE 3.—Nonbinding damage cap: anchoring

damage awards of mock jurors. Both V. B. Hinsz and K. E. Indahl²⁵ and Michael Saks et al.²⁶ found that a relatively high damage cap biased upward the damage awards of mock jurors.²⁷ It remains for us to address how anchoring can affect litigants' judgments and pretrial bargaining.

One possibility is that a nonbinding cap shifts the belief distributions of both parties upward toward the cap. Figure 3 depicts this scenario, in which each litigant's belief distribution shifts upward by the same amount, A . Under this scenario the cap "anchors" each party's trial prediction equally, has no effect on the judgmental disparity, and leaves the rate of settlement unchanged.

Scenario 4. Nonbinding Cap with Motivated Anchoring

In this final scenario, the parties' "motivational biases" cause a nonbinding cap to disproportionately anchor the plaintiff's beliefs.²⁸ David Messick and Keith Sentis²⁹ investigated motivational biases using scenarios in which each subject was informed they had completed a project with another student. A fixed sum was available to pay both subjects, and each subject was asked to select an allocation. Some subjects were told they had worked 10 hours while their partner worked only 7, and for other subjects this pattern

²⁵ V. B. Hinsz & K. E. Indahl, Assimilation to Anchors for Damage Awards in a Mock Civil Trial, 25 J. Applied Soc. Psychol. 991 (1995).

²⁶ Michael J. Saks et al., Reducing Variability in Civil Jury Awards, 21 Law & Human Behav. 243 (1997).

²⁷ Saks et al., *id.*, for example, asked mock jurors to provide damage awards for several hypothetical cases. For a case with minor injuries, the mean award was \$3,895, but it rose to \$15,718 for subjects informed of a \$250,000 damage cap.

²⁸ See David J. Schneider, Albert H. Hastorf, & Phoebe C. Ellsworth, Person Perception 105 (2d ed. 1979); and Ziva Kunda, The Case for Motivated Reasoning, 108 Psychol. Bull. 480 (1990).

²⁹ David Messick & Keith Sentis, Fairness and Preference, 15 J. Experimental Soc. Psychol. 418 (1979).

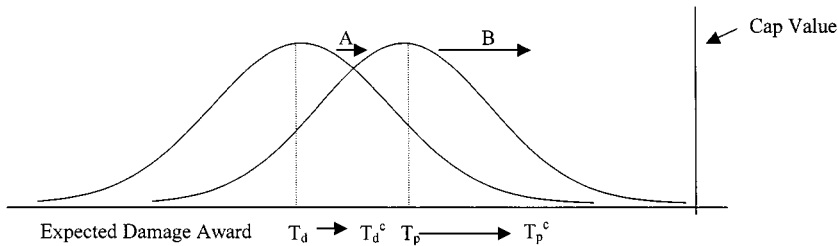


FIGURE 4.—Nonbinding damage cap: motivated anchoring

was reversed. Subjects told they had worked 10 hours preferred payment in proportion to hours worked, while subjects informed they had worked 7 hours chose to split the funds evenly.

This result suggests the underlying motives of decision makers affect their selection of judgmental criteria. In Machiavellian fashion, the students in the Messick and Sentis experiments tended toward the payment method that yielded them the most money. Analogously, litigants may also employ judgmental heuristics that best comport with their underlying motives. If anchoring is at least to some degree motivationally induced, plaintiffs may be more susceptible to anchors than are defendants. Since plaintiffs likely desire the highest possible trial award, a high damage cap supplies a ready excuse to inflate their trial prediction. However, since defendants likely possess the opposite wish, they may be more resistant to the lure of the anchor.

Figure 4 depicts the process of motivated anchoring. Here the nonbinding cap increases the plaintiff's trial prediction by B and increases the defendant's trial prediction by the lesser amount, A . In this scenario, the nonbinding cap widens the judgmental gap within negotiating pairs. If the litigants behave consistently with scenario 4, a nonbinding cap should decrease the rate of settlement. In the next section, we describe the bargaining experiment used to assess which scenario best describes litigant behavior in the presence of a nonbinding damage cap.

II. EXPERIMENTAL PROCEDURE

A total of 462 subjects were recruited from the undergraduate and graduate programs at the University of Arizona's business college, the MBA program at the University of Chicago, and the Harvard Business School subject pool (consisting of undergraduates in the Boston area). The experiment lasted about 1 hour. To begin, each subject received a packet describing a personal injury lawsuit in which the only unresolved claim was the amount of damages the plaintiff should receive for pain and suffering. Subjects

were then randomly designated as either plaintiff or defendant. They were given half an hour to review the case and prepare for a pretrial negotiation. In particular, they were told they would be paired with an adversary and permitted to resolve the case in one of two ways—they could settle with their adversary or accept the award of an actual trial judge who had reviewed the materials and rendered a ruling.

The case materials contained four pages of narrative and 14 pages of excerpts from the deposition testimony of various witnesses. In the case, while walking on a sidewalk, the plaintiff fell into a street vent that was covered by a grating. Several aspects of the case are noteworthy. First, to justify the inclusion of only two parties, the lone defendant, Clayton Fencing and Roofing, both owned the property on which the accident occurred *and* installed the failed grating. Second, to confine subjects' judgments to one class of civil damages, they were instructed that all claims arising from the incident had been resolved except for the amount, if any, the plaintiff should receive from the defendant for physical pain and suffering and mental anguish. To this end, the plaintiff had been fully compensated for his medical expenses and lost wages, and all future medical expenses were expected to be reimbursed.

The plaintiff suffered several injuries. He strained his back on the sidewalk attempting to avoid the fall, which resulted in a broken rib. His initial contact with the ground was "feet first," causing a twisted ankle and several bruises and abrasions. The plaintiff braced the fall with his right hand, causing several shattered metacarpals that were surgically repaired. Finally, subsequent to the accident, he was treated by a psychiatrist, though some deposition testimony alluded to preexisting psychological problems.

Subjects were instructed that their case materials were identical to those received by their counterpart. Monetary figures were purposely omitted from the case to avoid confounding the primary purpose of the study, which was to test whether the cap provides a numerical focal point for litigants' judgments. As for the computation of damages, subjects were instructed simply: "The law does not provide a schedule or formula with which a person's pain and suffering may be measured in dollars. In making such awards, courts consider factors such as the plaintiff's age, usual activities, occupation, the nature and character of the injury, and the level of discomfort and suffering. It is generally up to the sound discretion of the court to choose an amount that provides just and reasonable compensation to the plaintiff under the circumstances."

Recall that in our earlier study, half the bargaining pairs were informed of a \$250,000 cap that applied in their case. In order to explore the effect of a nonbinding cap, we modified the earlier experiment in two ways. First, we increased the damage cap to \$1,000,000. Second, we reduced the sever-

ity of the plaintiff's injuries.³⁰ These changes were designed to insure that the damage cap would exceed what most subjects felt was the highest possible damage award.

After reading the case materials, subjects were instructed about the negotiating procedure and the manner in which they would be compensated. The negotiation consisted of at most four periods, each lasting 5 minutes. Following each period, subjects wrote down and exchanged offers. If the amount the defendant offered exceeded the amount the plaintiff demanded, the case settled at the midpoint of the two amounts. If not, the parties continued to negotiate. For any pair that negotiated for four periods without settling, the judge's award was imposed. All subjects were informed that we had already given the identical case materials to an actual trial court judge who had rendered a ruling. Unbeknownst to the subjects, that award was \$325,000.

Subjects who settled after the first negotiating period paid no legal fees. Thereafter, both litigants were assessed \$10,000 per negotiating period and an additional \$10,000 if they went to trial. Subjects were compensated with a fixed appearance fee and a payment that varied with the outcome of the negotiation. The following example illustrates how we determined each party's final monetary outcome. Assume an uncapped subject pair settled for \$350,000 after the third negotiating period. In this case, the defendant would pay \$370,000 (adding \$20,000 in legal fees), and the plaintiff would receive \$330,000 (subtracting \$20,000 in legal fees). Alternatively, for all negotiating pairs that went to trial, the judge's award was \$325,000. In this case, the plaintiff received \$285,000 (subtracting \$40,000 in legal fees) and the defendant paid \$365,000 (adding \$40,000 in legal fees).

The fixed appearance fee was \$15 for each subject, with the balance of their compensation depending on their monetary outcome in the experiment. For the variable portion of their compensation, every \$50,000 in experimental dollars translated into 1 real dollar. Thus, in the first example above, the plaintiff would leave the experiment with a \$15 appearance fee, plus 8 additional dollars ($\$370,000/\$50,000$ is rounded up to 8). Defendants were also informed of the exchange rate and were told we had set aside experimental dollars, from which they would pay either a settlement amount or a trial judgment, plus their fees. Each defendant could then convert the remaining balance into real dollars and keep them. Defendants were not informed of the amount set aside for each of them (\$1,000,000), to avoid artificially influencing their beliefs or negotiating strategy.

³⁰ In the earlier experiment, the plaintiff received several injuries in addition to those described here. He suffered a compound fracture of his left leg, which necessitated surgery and an ensuing 12-day hospital stay. He also received a concussion during the fall.

Before negotiating, subjects privately predicted the damage award were the case to be tried. Any subject whose estimate was within \$25,000 of the actual trial award received a \$5 cash bonus. Our design allowed us to compare settlement rates, case duration, and legal fees across experimental conditions. By eliciting litigants' predictions of the trial award, we were also able to assess which of our scenarios best describes the effects of a non-binding damage cap.

III. RESULTS

Throughout the ensuing presentation of results, we incorporate findings from our earlier study³¹ to supply a broader context for assessing the effects of a cap. Table 1 presents summary measures from both studies, with results from the binding cap experiment in the columns 1 and 2 and the non-binding experiment in columns 3 and 4. We note immediately that the non-binding damage cap significantly reduced the settlement rate: while 79 percent of uncapped subject pairs settled, this percentage fell to 67 percent for litigants negotiating under a \$1 million damage cap. Legal fees also rose significantly with the cap. These results contrast sharply with the increase in settlement rates produced by the binding \$250,000 cap in our earlier work. The balance of this section seeks to explain why the nonbinding cap reduced the settlement rate and why the effects of a cap appear to depend on whether it is binding.³²

In developing a theory for the effects of a cap on settlement, we began with four scenarios describing the process by which a cap influences litigants' judgments. That discussion relied on several assumptions. First, in each scenario, on the basis of the abundant prior research demonstrating the existence of self-serving biases, we assumed plaintiffs' beliefs would be distributed over higher values than defendants' beliefs. We find strong evidence for this assertion. As can be seen in columns 3 and 4 of Table 2, the

³¹ Babcock & Pogarsky, *supra* note 2.

³² We attend here to a comparison of uncapped conditions across the two studies. In Table 1, the settlement rate for nonbinding control subjects far exceeds that for binding control subjects (79 percent compared to 57 percent). Since our primary purpose in the current study is to investigate a nonbinding cap, we made several modifications to the experimental design used in the previous experiment. To insure that the \$1 million cap would be nonbinding, we revised the experimental materials to make the plaintiff's injuries less severe. Thus, control subjects in the binding cap study litigated a far more serious case than control subjects in the nonbinding cap study. Binding control subjects may simply have perceived there was more at stake than their nonbinding counterparts. This supposition is supported by the fact that binding uncapped subjects negotiated longer (14.7 compared to 10.73 minutes), paid more legal fees (\$47,778 compared to \$34,454), and settled for higher amounts (\$490,000 compared to \$394,986) than nonbinding control subjects.

TABLE 1
 MEANS BY CONDITION, FOR BINDING AND NONBINDING CAP STUDIES

	BINDING CAP (\$250,000)		NONBINDING CAP (\$1,000,000)	
	Uncapped (1)	Capped (2)	Uncapped (3)	Capped (4)
Settlement rate	.57	.73	.79	.67
SE	.07	.06	.04	.04
<i>p</i>		.08		.03
Average negotiating time (pairs that settled) (minutes)	14.70	14.50	10.73	11.87
SE	.95	.82	.54	.63
<i>p</i>		.90		.17
Average legal fees (\$)	56,296	49,285	34,454	44,821
SE	3,550	6,586	2,721	2,884
<i>p</i>		.31		.01
Total number of pairs	54	56	119	112
Number of pairs that settled	31	41	95	75

NOTE.—Binding cap results are reproduced from Linda Babcock & Greg Pogarsky, Damage Caps and Settlement: A Behavioral Approach, 28 J. Legal Stud. 341 (1999). *p*-Values are for two-tailed hypothesis test for differences in means within study across conditions.

TABLE 2
 MEDIANS BY CONDITION, FOR BINDING AND NONBINDING CAP STUDIES

	BINDING CAP (\$250,000)		NONBINDING CAP (\$1,000,000)	
	Uncapped (1)	Capped (2)	Uncapped (3)	Capped (4)
Plaintiff's prediction of trial award (\$)	600,000	225,500	300,000	495,000
SD	229,519	56,369	683,354	504,227
<i>p</i>				.00
Defendant's prediction of trial award (\$)	350,000	150,000	170,000	275,000
SD	226,230	68,208	306,492	225,814
<i>p</i>				.01
Disparity in predicted trial awards (\$)	158,000	50,000	60,000	150,000
SD	293,988	91,437	936,951	401,689
<i>p</i>				.01
Settlement amount (pairs that settled) (\$)	500,000	175,000	260,000	375,000
SD	153,934	86,469	388,370	235,377
<i>p</i>				.23
Total number of pairs	54	56	119	112
Number of pairs that settled	31	41	95	75

NOTE.—Binding cap results are reproduced from Linda Babcock & Greg Pogarsky, Damage Caps and Settlement: A Behavioral Approach, 28 J. Legal Stud. 341 (1999). *p*-Values are for difference in medians within study across conditions.

median plaintiff's estimate of the trial award is significantly higher than the median defendant's estimate ($p = .00$ for both conditions).³³

Second, we assumed the size of the contract zone relates positively to the likelihood of settlement. Using the equations outlined in note 17, we calculated each subject's reservation value. For each negotiating pair, we then subtracted the plaintiff's reservation value from the defendant's reservation value to calculate the size of the contract zone. Of negotiating pairs with contract zones smaller than the median, 58 percent settled, compared to 89 percent of pairs whose contract zone exceeded the median.³⁴

Having corroborated two assumptions from our theoretical discussion, we next investigate why the nonbinding cap reduced the settlement rate. The medians in the first three rows of Table 2 offer support for our motivated anchoring hypothesis. In the nonbinding study, while the cap increased the median trial prediction of plaintiffs from \$300,000 to \$495,000, the cap increased the median trial prediction of defendants by a smaller margin (from \$170,000 to \$275,000). Further, the cap widened the median disparity in the trial predictions of negotiating pairs by 150 percent.^{35,36}

³³ Throughout this section, we compare medians to account for the presence of extreme outliers. The unavoidable effect of a \$1 million damage cap is to provide an upper bound on litigants' judgments. Thus, for both trial predictions and settlement amounts, the uncapped distributions have a much more pronounced rightward skew than the corresponding capped distributions.

³⁴ The value of $p = .00$ for two-tailed hypothesis test for difference in settlement rates.

³⁵ From \$60,000 to \$150,000, $p < .01$.

³⁶ As is evident from the standard deviations in Table 2, settlements and predicted trial awards were exceedingly more variable in the nonbinding experiment than in the binding experiment. This comports entirely with recent findings by Daniel Kahneman, David Schkade, & Cass R. Sunstein (Shared Outrage and Erratic Awards: The Psychology of Punitive Damages, 16 *J. Risk & Uncertainty* 47 (1998)) that difficulties in "monetizing" civil transgressions produce wildly unpredictable judgments by mock jurors, particularly when the monetary scale for such judgments is unbounded. We "bounded" the scale in the binding cap study for this very reason—to minimize the discomfort from making monetary judgments with no guidance about the value of the case. In the binding cap study we therefore informed all subjects that the plaintiff was suing "for \$1 million." To avoid confounding the results, both conditions required this instruction. To reconcile this language with a \$250,000 cap, we instructed capped subjects that there was a political debate surrounding enactment of the \$250,000 cap. At the time of filing, the plaintiff's attorney advised the plaintiff to sue for \$1 million in case the statute was repealed. It has since become clear that the statute will not be repealed and would therefore apply in the instant case. Since the current study investigates whether a nonbinding cap provides an upward focal point for judgments, we could not risk introducing a competing focal point into the decision environment. We therefore purged all monetary cues from the instructions, except for the \$1 million damage cap in the experimental condition. As a result, consistent with Kahneman, Schkade, & Sunstein, *supra*, settlement amounts and predicted trial awards varied much more in the nonbinding cap experiment. A comparison of capped experimental groups across studies shows that binding subjects effectively operated on a \$0–\$250,000 scale, while nonbinding subjects operated on an expanded \$0–\$1 million scale. The standard deviations for settlement and predicted trial awards are commensurately larger for nonbinding capped subjects than bind-

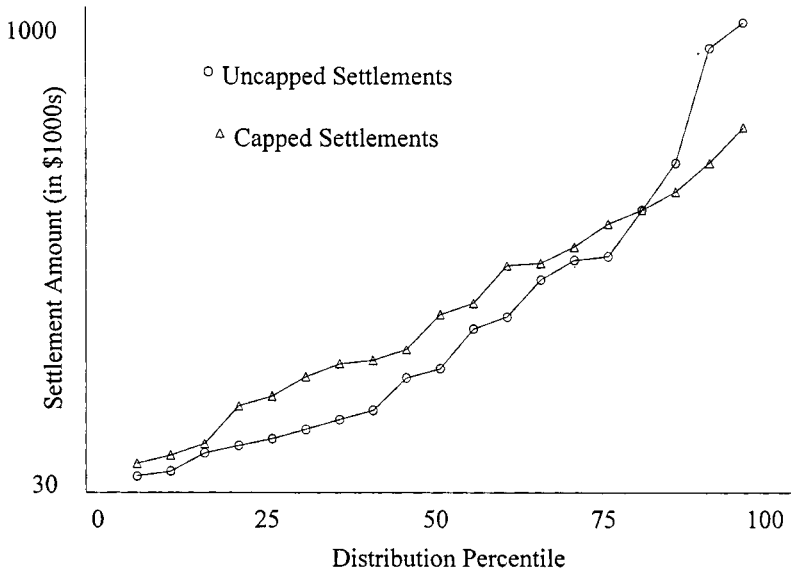


FIGURE 5.—Settlement distributions, by condition

The distribution of settlement amounts across conditions provides further evidence for anchoring.³⁷ The fourth row of Table 2 reports median settlement amounts by condition. Though the cap increased the median settlement by a substantial margin (from \$260,000 to \$375,000), this difference falls short of conventional significance levels. However, as is clear from the cumulative distributions contained in Figure 5, for every percentile until about the eightieth, capped settlements are larger than uncapped settlements. This pattern reverses for the upper tail of the distribution because litigants in the uncapped condition were not bounded by the \$1 million cap.³⁸

ing capped subjects. With respect to uncapped subjects, while binding subjects operated on a \$0–\$1 million scale, the judgments of nonbinding subjects were unbounded. In similar fashion, the standard deviations for settlement and predicted trial awards are larger for nonbinding uncapped subjects.

³⁷ Though settlement amounts alone do not indicate whether the cap disproportionately anchored plaintiffs' judgments, they generally corroborate the anchoring tendencies of the cap.

³⁸ As a result, only one of the 12 largest settlements (ranging from \$940,000 to \$2,050,000) corresponded to a capped subject pair. Capped defendants may have been reluctant to settle for even close to \$1 million, since this was the worst possible result after a trial. While one capped subject pair settled for \$1 million, the next highest capped settlement was \$887,500.

To summarize briefly, we find that, unlike a binding damage cap, a non-binding cap reduces the rate of pretrial settlement. It appears that subjects responded to the cap in a manner consistent with our motivated anchoring hypothesis. Under this view, the nonbinding cap provides an upward focal point for litigants' judgments about the case. However, consonant with the underlying motives of the parties, plaintiffs appear more susceptible to such anchoring than defendants. The result is a widened judgmental disparity and less settlement.

IV. CONCLUDING REMARKS

From both a legal and economic perspective, damage caps profoundly alter the administration of civil justice. Indeed, many recent state court decisions declare caps not simply a drastic intrusion into the civil justice process but a constitutionally impermissible one. Recently, caps have been held to violate federal equal protection³⁹ and due process guarantees.⁴⁰ Damage caps have also been held to violate various state constitutional provisions affording the right to trial by jury.⁴¹

From an economic standpoint, caps necessarily transfer wealth from the victims of civil transgressions to those held liable for such conduct by reducing the total compensation afforded plaintiffs. While the ultimate magnitude of this transfer is an empirical question, results from prior research are suggestive. Both Patricia Danzon⁴² and Frank Sloan, Paula Mergenhagen, and Randall Bovbjerg⁴³ found damage caps were associated with substantial reductions in the value of medical malpractice claims paid by insurance carriers during the approximate period 1975–84.

The institution of a cap creates a category of cases for which the ultimate damage award results not from an adversarial proceeding but rather from a legislative pronouncement of the maximum permissible compensation. Such circumscription becomes more justifiable if cap proponents can identify ancillary benefits from the policy that counterbalance the wealth transfer to those held civilly liable. In this spirit, proponents have advanced the potential for caps to quell litigation and commensurately reduce the private

³⁹ See *Thompson v. KFB Insurance*, 850 P.2d 773 (1993); *Richardson v. Carnegie Library Restaurant*, 763 P.2d 1153 (1988); *Arenson v. Olson*, 270 N.W.2d 125 (1978).

⁴⁰ See *Morris v. Savoy*, 576 N.E.2d 765 (1991).

⁴¹ See *Sofie v. Fibreboard Corp.*, 771 P.2d 711 (1989); *Kansas Malpractice Victims Coalition v. Bell*, 757 P.2d 251 (1988); *Smith v. Department of Insurance*, 507 S.2d 1080 (1987).

⁴² Patricia M. Danzon, *The Frequency and Severity of Medical Malpractice Claims: New Evidence*, 49 *L. Contemp. Probs.* 57 (1986).

⁴³ Frank A. Sloan, Paula M. Mergenhagen, & Randall R. Bovbjerg, *Effects of Tort Reform on the Value of Closed Medical Malpractice Claims: A Microanalysis*, 14 *J. Health Pol. Pol'y & L.* 663 (1989).

and social costs of dispute resolution. The studies reported here and in our earlier study⁴⁴ suggest such claims are at best overly simple and at worst specious.

Each study investigates an extreme form of cap. In the former, the cap was low relative to subjects' perceptions of the value of the case, while in the current study, the cap far exceeded most subjects' predictions of the adjudicated award. Were these results generalizable across the range of potential cap values, the propensity for a cap to encourage settlement would appear highly dependent on its placement along the distribution of claim severity. Aggregating over all cases, these two studies suggest that the lower the cap, the greater will be the improvement in settlement rates. Of course, the lower the cap, the greater the wealth transfer from civilly aggrieved parties. Even more, a high damage cap does not simply reduce the cap's tendency to quell litigation. The present results suggest that for minor cases, a sufficiently high damage cap can prolong litigation.

Indeed, while the academic literature and transcripts of legislative sessions squarely address the question of whether to cap damages, scarce attention is devoted to the mechanism best equipped to do so. We noted at the outset the difference, for example, between a multiplier cap, whose limit on punitive or noneconomic damages depends on the amount of compensatory damages, and a flat dollar cap, whose limit is a fixed sum. We find no reported discussion of the relative efficacy of these capping strategies. Further, we find no discussion about selecting an appropriate dollar sum at which to cap damages, nor do we find any acknowledgment of the importance of the underlying claim distribution.

We observe finally that we identified the subtler effects of this policy by expanding the traditional rational choice approach to problems of this nature. We share the rational choice perspective that litigants' expectations of the alternative to settlement will influence the ability to settle. However, by recognizing that motivated cognitive biases often influence judgments, we showed that policies produce complex effects that are sometimes the opposite of those intended by reform advocates.

⁴⁴ Babcock & Pogarsky, *supra* note 2.

