

## Explaining Bargaining Impasse: The Role of Self-Serving Biases

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## Abstract

We review studies conducted by ourselves and coauthors that document a "self-serving" bias in judgments of fairness and demonstrate that the bias is an important cause of impasse in negotiations. We discuss experimental evidence showing that (a) the bias *causes* impasse; (b) it is possible to reduce impasses by debiasing bargainers; and (c) the bias results from selective evaluation of information. We also review results from a field study of negotiations between teachers' unions and school boards in Pennsylvania that both documents the fairness bias in a naturalistic setting and demonstrates its impact on strikes.

A major unsolved riddle facing the social sciences is the cause of impasse in negotiations. The consequences of impasse are evident in the amount of private and public resources spent on civil litigation, the costs of labor unrest, the psychic and pecuniary wounds of domestic strife, and in clashes between religious, ethnic and regional groups. Impasses in these settings are not only pernicious, but somewhat paradoxical since negotiations typically unfold over long periods of time, offering ample opportunities for interaction between the parties.

Economists, and more specifically, game theorists, typically attribute delays in settlement to incomplete information. Bargainers possess private information about factors such as their alternatives to negotiated agreements and costs to delay, causing the bargainers to be mutually uncertain about the other side's reservation value. Uncertainty produces impasse because bargainers use costly delays to signal to the other party information about their own reservation value (Kennan and Wilson, 1989; Cramton, 1992). However, this hypothesis is explanation for impasse is difficult to test because satisfactory measures of uncertainty are rare. With only a few exceptions (Tracy, 1986, 1987), most field research in this area has been limited to testing secondary hypotheses such as the relationship between wages and strike duration (Farber, 1978; Card, 1990; McConnell, 1989; Kennan, 1985, 1986). Experimental tests of incomplete information accounts of impasse have been hindered by the difficulty of completely controlling important aspects of the experimental environment such as the beliefs maintained by the subjects (Roth, 1995), and those that have been conducted have generally not provided strong support for the specific models under examination.

This paper identifies a different and relatively simple psychological mechanism as a major cause of bargaining impasse. This is the tendency for parties to arrive at judgments that reflect a self-serving bias --

to conflate what is fair with what benefits oneself. Such self-serving assessments of fairness can impede negotiations and promote impasse in at least three ways. First, if negotiators estimate the value of the alternatives to negotiated settlements in self-serving ways, this could rule out any chance of settlement by eliminating the contract zone (the set of agreements that both sides prefer to their reservation values). Second, if disputants believe that their notion of fairness is impartial and shared by both sides, then they will interpret the other party's aggressive bargaining not as an attempt to get what they perceive of as fair, but as a cynical and exploitative attempt to gain an unfair strategic advantage. Research in psychology and economics has shown that bargainers care not only about what the other party offers, but also about the other party's motives.<sup>1</sup> Third, negotiators are strongly averse to settling even slightly below the point they view as fair (Loewenstein, Thompson, and Bazerman, 1989). If disputants are willing to make economic sacrifices to avoid a settlement perceived as unfair but if their ideas of fairness are biased in directions that favors themselves, then bargainers who are "only trying to get what is fair" may not be able to settle their dispute.

The evidence we review shows that the self-serving bias, and the impasses it causes, occur even when disputants possess identical information, which suggests that private and incomplete information may not be as critical for non-settlement as is commonly believed. The bias is also present when bargainers have incentives to evaluate the situation impartially, which implies that the bias does not appear to be deliberate or strategic.

We begin by reviewing some evidence from the psychology literature that demonstrates the existence of the self-serving bias in different domains. We then present results from experimental and field research, conducted by ourselves and several co-authors (Colin Camerer, Samuel Issacharoff and

Xianghong Wang), which establishes the connection between self-serving bias and impasse, and helps to pinpoint the cognitive and motivational mechanisms underlying the bias. Finally, we review previous experimental economics research on bargaining and show that some of the results can be interpreted as manifestations of the self-serving bias.

### Psychological Research on the Self-Serving Bias

Although psychologists debate the underlying cause of the self-serving bias, its existence is rarely questioned. The self-serving bias is evident in the "above average" effect, whereby well over half of survey respondents typically rate themselves in the top 50 percent of drivers (Svenson, 1981), ethics (Baumhart, 1968), managerial prowess (Larwood and Whittaker, 1977), productivity (Cross, 1977), health (Weinstein, 1980), and a variety of other desirable skills. It is also evident in the large body of research showing that people overestimate their own contribution to joint tasks. For example, when married couples estimate the fraction of various household tasks they are responsible for, their estimates typically add to more than 100 percent (Ross and Sicoly, 1979). People also tend to attribute their successes to ability and skill, but their failures to bad luck (Zuckerman, 1979).

The self-serving bias affects not only individuals' evaluations of themselves, but also of groups they are affiliated with. For example, in one early study, Hastorf and Cantril (1954) examined individuals' judgments of penalties committed during a football game between Princeton and Dartmouth. Students at these schools viewed a film of the game and counted the number of penalties committed by both teams. Princeton students saw the Dartmouth team commit twice as many flagrant penalties and three times as

many mild penalties as their own team. Dartmouth students, on the other hand, recorded an approximately equal number of penalties by both teams. While the truth probably lies somewhere in-between, the researchers concluded that it was as if the two groups of students "saw a different game."

A subset of research on the self-serving bias has shown that people tend to arrive at judgments of what is fair or right that are biased in the direction of their own self-interests. For example, Messick and Sentis (1979) divided subjects into two groups: one group was told to imagine that they had worked seven hours at a task and the others had worked ten hours. Subject who worked seven hours were always paid \$25. Subjects were asked how much the subjects who had worked ten hours should be paid. Seven-hour subjects, on average, thought the ten-hour subject should be paid \$30.29. However, the ten-hour subjects thought they should be paid \$35.24. The difference between \$30.29 and \$35.24 -- \$4.95 -- was cited as evidence of a self-serving bias in perceptions of fairness.

This experiment also yielded insights about the underlying cause of the bias. The perceived fair wage for the 10 hour workers was bimodal: some people thought it was fair to pay both parties equally, regardless of hours worked; others thought it was fair to pay both an equal hourly wage (which would mean paying the 10 hour workers approximately \$35.70). The difference between the seven-hour and ten-hour subjects resulted from the higher fraction of ten-hour subjects who believed that an equal hourly wage was fair. This research suggests that self-serving assessments of fairness are likely to occur in morally ambiguous settings in which there are competing "focal points" -- that is, settlements that could plausibly be viewed as fair (Schelling, 1960).

An Experimental Investigation: A Texas Tort Case

To investigate the role of self-serving assessments in bargaining, we designed an experimental paradigm, which we then used in a number of experimental studies. We developed a tort case that is based on a trial that occurred in Texas, in which an injured motorcyclist sued the driver of the automobile that collided with him, requesting \$100,000. Subjects are randomly assigned to the role of plaintiff or defendant, and attempt to negotiate a settlement. Subjects first receive a page explaining the experiment, the sequence of events, rules for negotiating, and the costs they would face if they failed to reach an agreement. Both subjects then receive the same 27 pages of materials from the original legal case in Texas. The materials included witness testimony, police reports, maps, and the testimony of the parties.<sup>2</sup> Subjects are informed that we gave the identical case materials to a judge in Texas, who reached a judgment between \$0 and \$100,000 concerning compensation to the plaintiff.

Before negotiating, subjects are asked to write down their guess of what the judge awarded. They are told they will receive a bonus of \$1 at the end of the session if their prediction is within \$5,000 (plus or minus) of the actual judge's award. They are also asked what they considered a fair amount for the plaintiff to receive in an out-of-court settlement "from the vantage point of a neutral third party." Subjects are told that none of this information will be shown to the other party. The two subjects are then allowed to negotiate for 30 minutes. Delays in settlement were made costly to the subjects by imposing "court costs" that accumulate in each period in which the subjects fail to settle. If they fail to reach a voluntary settlement within 30 minutes, then the judge's decision determines the defendant's payment to the plaintiff and legal costs are levied on the parties.

At the beginning of a session, both subjects are paid a fixed fee for participating (e.g. \$4) and the defendant is given an extra \$10. Ten-thousand dollars is equivalent to \$1 for the subjects. For example,

if the subjects reach a \$60,000 settlement and each side owes court costs of \$10,000, the defendant keeps \$4 and gives \$6 to the plaintiff, and both parties give \$1 to the experimenter in court costs. If the parties fail to settle, the defendant pays the plaintiff \$3.06, representing the judgment of \$30,560 actually awarded by the judge (that was unknown to the subjects during the negotiation), and both parties pay legal costs of \$2.50 for not settling.

The experiment was designed to test for the effect of the self-serving bias in a contextually rich and controlled experimental setting. Since both parties are given the same case information and neither party has private information about the judge, differences in estimates between defendant and plaintiff cannot be attributed to differences in information.

Our first experiment with this framework found strong evidence that the negotiators formed self-serving assessments of the judge's award, and that the discrepancy between the plaintiffs' and defendants' assessments was correlated with the parties' ability to reach voluntary settlements (Loewenstein, Issacharoff, Camerer, and Babcock, 1993). The subjects were 80 undergraduates from the University of Chicago and 80 law students at the University of Texas at Austin. Subjects were assigned randomly to roles as either the defendant or plaintiff immediately upon entering the experiment.

The self-serving bias was clear in that plaintiffs' predictions of the judge averaged \$14,527 higher than defendants', and plaintiffs' fair settlement values averaged \$17,709 higher than defendants', with both differences statistically different from zero ( $p < .0001$ ). Table 1 presents a median split of the discrepancy in the parties' assessments of the judge and summarizes the percent of pairs that reached an impasse for each group. The first row of the table shows that in this experiment, non-settlement was strongly related to the discrepancy between the plaintiffs' and defendants' predictions of what the judge would award.



One limitation of this study was that it does not necessarily demonstrate that the self-serving bias causes impasse. It is possible, for example, that there is a third factor, perhaps some element of personality such as aggressiveness, that causes certain subjects to mis-estimate the judge and to be unwilling to settle. To avoid this problem, in a new study we introduced a manipulation to diminish the magnitude of the discrepancy in expectations without changing other key features of the experiment. The manipulation involved changing the order of the events in the experiment. In the control condition, the participants learned whether their role would be defendant or plaintiff before they read the case materials and offered their anonymous assessments of the judge and a fair settlement; in the experimental condition, they learned which role they would play after reading the case materials and offering their estimates of the judge and a fair settlement. Our prediction was that the discrepancy between the plaintiffs' and defendants' assessments would be smaller for those who learned their role after reading the case, because, not knowing their role when they read through the case, they would process the information in an unbiased fashion.

The experiment was run with 38 public policy students at Carnegie Mellon University, 120 law students from the University of Texas, and 30 business students from the University of Pennsylvania (Babcock, Loewenstein, Issacharoff and Camerer, 1995). Consistent with a causal relationship running from the self-serving bias to impasse, when the subjects did not learn their roles until after they read the case and made their assessments of the judge and fairness, only 6 percent of the negotiations were resolved by the judge; however, when the subjects knew their roles initially, 28 percent of negotiations had to be resolved by the judge (this statistically significant difference is shown in the first row of Table 2). As in the previous experiment, the discrepancy in the parties' assessments of the judge's decision was related to settlement; only 4% of the negotiations in which the discrepancy was below the median ended in impasse

while 28% of pairs above the median discrepancy failed to settle (see the second row of Table 1).

Prior research on self-serving biases (Dunning et al., 1989), and on biased processing of information in general (Darley and Gross, 1983) suggests that the bias results from selective information processing. As Danitioso, Kunda and Fong (1990, p. 229) argue, "people attempt to construct a rational justification for the conclusions that they want to draw. To that end, they search through memory for relevant information, but the search is biased in favor of information that is consistent with the desired conclusions. If they succeed in finding a preponderance of such consistent information, they are able to draw the desired conclusion while maintaining an illusion of objectivity." We explored this explanation by giving subjects a questionnaire at the end of the bargaining session in which they were asked to rate the importance of a series of eight arguments favoring the plaintiff and eight favoring the defendant (Babcock, Loewenstein, Issacharoff and Camerer, 1995). Consistent with the psychology research, plaintiffs tended to weight arguments favoring the plaintiff as much more compelling than those favoring the defendant and vice versa. This provides evidence that the self-serving bias results from role-dependant evaluation of information.

Might other experimental manipulations offer suggestions for practical ways of reducing the discrepancy in the parties' expectations and thus avoid impasse? Obviously, our experiment that gave subjects their role after reading the case materials has no practical implication, since parties to a dispute usually know their own roles from the outset.

We experimented with several interventions that were designed to "debias" the disputants' judgments as a way to promote settlement. In one experimental treatment subjects read a paragraph describing the extent and consequences of the self-serving bias after they were assigned their roles and read

the case, but before they recorded their assessments of fairness and their predictions of the judge's decision. They also took a short test to make sure that they had understood the paragraph explaining the bias. However, being informed of the bias had no effect on the discrepancy in the parties' expectations, nor on the likelihood of settlement. One interesting result, however, did emerge from this study. In addition to asking their perception of fairness and the judge, we asked subjects to guess their opponent's prediction of the judge. Our results indicate that informing subjects of the bias made them more realistic about the predictions of the other party. However, it did not cause them to modify their own prediction of the judge. When they learned about the bias, subjects apparently assumed that the other person would succumb to it, but did not think it applied to themselves.

In another treatment, before they negotiated, subjects were instructed to write an essay arguing the opponent's case as convincingly as possible. This intervention was inspired by research that has suggested that people with better perspective-taking ability resolve disputes more efficiently (Bazerman and Neale, 1982). This did change the discrepancy in expectations, and in a way that was marginally statistically significant, but opposite to the intended direction. Again, there was no significant impact on the settlement rate.

Finally, we turned to research in psychology showing that biases are diminished when subjects question their own judgment. Slovic and Fischhoff (1977), for example, found that the "hindsight bias" (the tendency to view the past as having been more predictable than it actually was) was reduced when subjects were instructed to give reasons for why outcomes other than the one that actually occurred could have occurred. Koriat, Lichtenstein, and Fischhoff (1980) found that a bias called "overconfidence" was reduced by having subjects list counterarguments to their beliefs. They conclude (p. 113) that

"overconfidence derives in part from the tendency to neglect contradicting evidence and that calibration may be improved by making such evidence more salient." Research on other biases has produced similar debiasing success stories when subjects are instructed to "consider the opposite" (Lord, Lepper, and Preston, 1984; Anderson, 1982, 1983).

Based on this common finding, we designed an intervention in which subjects, after being assigned their role and reading the case materials, were informed of the self-serving bias (as in the previous experiment) and told that it could arise from the failure to think about the weaknesses in their own case (Babcock, Loewenstein, and Issacharoff, 1996). They were then asked to list the weaknesses in their own case. The effect of this intervention was to diminish the discrepancy in the parties' expectations about the judge (see the third row of Table 2): the discrepancy averaged \$21,783 in the control condition, where neither party received this intervention but only \$4,674 when the subjects received the debiasing procedure ( $p < .05$ ). The debiasing treatment also reduced the rate of impasse from 35 percent to 4 percent ( $p < .01$ ). Notice that this intervention can be implemented after an individual realizes that he or she is involved in a dispute. It thus holds a possibility of serving as a practical tool in mediation.

Our research on debiasing begs the question of whether the self-serving bias is indeed "self-serving." In fact, one reviewer commented that it was more of a "self-defeating" bias since it caused individuals to make systematic errors that made them worse off. However, psychologists have argued that these biases are clearly beneficial to well-being in some domains. For example, Taylor and Brown (1988) argue that unrealistically positive self-evaluations promote happiness as well as other aspects of mental health. Furthermore, they suggest that individuals that have more accurate self-evaluations are either low in self-esteem, moderately depressed, or both. However, it is clear from our research that, in negotiations

where the costs of impasse are high, the self-serving bias hurts both parties economically. An unresolved issue, which we are exploring in our current research, is whether it benefits a party to be less biased, holding constant the beliefs of the other party. While this will help to reduce impasse, it may also cause that party to be less persuasive in a negotiation, leading to an inferior outcome should a settlement be reached.

#### A Field Study: Public School Teacher Negotiations

In presenting these findings at seminars and conferences, we are often questioned as to whether experienced negotiators would succumb to the self-serving bias. To address this point, we conducted a study to examine the bias and its impact on bargaining in a real world setting -- public school teacher contract negotiations in Pennsylvania (Babcock, Wang, and Loewenstein, 1996). Since 1971, approximately 8 percent of all teacher contract negotiations have ended in a strike, with an average strike duration of 16.4 days.

In public sector contract negotiations, it is commonplace for both sides to make references to agreements in "comparable" communities. We hypothesized that both sides would have self-serving beliefs about which communities were comparable, and that impasses would be more likely as the gap between their beliefs widened. To explore this hypothesis, we surveyed union and school board presidents from all school districts in Pennsylvania to obtain a list of districts that they viewed as comparable for purposes of salary negotiations.<sup>3</sup> We linked the survey data to a data set that included district-level information about strikes, teachers' salaries, community salary levels, and other demographic and financial information. The combination of survey and field data allows us to examine the relationship between strike activity and the

subjective perceptions of the respondents.

Considering only the districts in which both the union and school board returned the survey, we found that both sides listed about the same number of districts as being comparable (about 4.5). However, the actual districts listed by the two sides differed in a way that reflected a self-serving bias. The average salary in districts listed by the union was \$27,633, while the average salary in districts listed by the board was \$26,922. The mean difference of \$711 is statistically, and economically significant; it is equivalent to about 2.4 percent of average teacher salary at a time when salary increases averaged less than 5% per year.

To test for the effect of self-serving bias on strikes, we regressed the percent of previous contract negotiations that ended in a strike against the difference in the average salaries of the two parties' lists of comparables. The regression also included variables controlling for district wealth and local labor market conditions. This regression produced a significant effect of differences in the list of comparables on strike activity. The point estimate suggests that a district where the average salary of the union's list is \$1000 greater than the board's list will be approximately 49 percent more likely to strike than a district where the average salaries of the union's and board's lists are the same.

We also found that the difference in the list of comparables was correlated with the variance in the salaries of teachers in the neighboring districts. Apparently, larger variation in neighboring salaries provides more opportunity for each side to choose self-serving comparison groups. However, the difference in the list of comparables was unrelated to the level of experience of either the union or board presidents. Experience with bargaining does not seem to inoculate one against the self-serving bias.

## Reinterpreting Findings From Previous Bargaining Experiments

The existence of the self-serving bias offers a useful tool for reinterpreting a number of past findings in the research on bargaining. In one study, for example, two subjects bargained over how to distribute 100 tickets for a lottery (Roth and Murnighan, 1982). However, one subject would receive \$5 for winning the lottery, while the other would receive \$20. Given this setup, there were two focal points for splitting the chips: 50 chips to each (equal chance of winning) or 20 chips to the \$20-prize player and 80 chips to the \$5-prize player (equal expected value). When neither player knew who would receive which payoff, subjects generally agreed to divide the chips about equally and only 12 percent of pairs failed to reach an agreement and ended up with no payoff. However, when both subjects knew who was assigned to which payoff, 22 percent failed to reach agreement. A likely interpretation is that both sides viewed as fair the focal settlement that benefitted themselves, so the \$20-prize player was likely to hold out for half of the chips, while the \$5 player demanded equal expected values.

Another well-known bargaining framework is the so-called "shrinking pie" game, in which one subject (the "proposer") is presented with a sum of money and asked to divide it with another subject (the "responder"). If the responder rejects the offer, the amount of money to be divided (the "pie") shrinks, the players switch roles, and the game continues either until an offer is accepted, or until a specified number of rounds have been played. In this game, it is common to see a responder reject a lopsided offer, and then propose a counteroffer that gives them less than the offer they just rejected but is more equitable because the other side's amount has been reduced by even more. In one investigation of this game, Weg, Rapoport, and Felsenthal (1990) found that when the pie shrunk at the same rate for both individuals, the rejection

rate was only 12 percent in the first round, but when the pie shrank at different rates for each subject, the rejection rate was 57 percent in the first round. Again, consistent with the self-serving bias, perhaps subjects whose pies shrank relatively slowly viewed this as justification for requesting a large fraction of the pie, but subjects whose pies shrank quickly rejected the rate of pie-shrinkage as a criterion for allocating the pie.

A special case of the shrinking pie game is the "ultimatum" game in which there is only a single round. In this case, if the responder rejects the proposer's offer in the first round, the pie shrinks to zero and neither side gets any payoff. If proposers only care about self-interest, and if they believe responders do too, the proposer should offer a trivial amount (like 1 cent) and it should be accepted. But in practice, the modal offer is typically half the pie, and smaller offers are often rejected.<sup>4</sup>

Although ultimatum experiments have been used by economists to illustrate the importance of fairness considerations, rejections in these experiments can be explained by self-serving biases. Proposers, who view themselves in a powerful role, believe that they deserve more than half of the pie, whereas responders do not believe that role should affect the division of the pie. Beyond the simple fact of non-settlement, certain variants of the standard ultimatum game have produced results that provide more direct evidence of the role of self-serving biases. In one variant of the game, the roles of proposer and responder were determined either randomly or by the outcome of a trivia contest with the winner playing the role of proposer (Hoffman, McCabe, Shachat and Smith, 1994). Offers in the contest condition were lower than in the chance condition, and the rejection rate was substantially higher. It seems that proposers in the contest condition felt self-servingly entitled to a higher payoff, but responders did not view the contest as relevant to the fair division of the pie.



In another variant of the ultimatum game, Knez and Camerer (1995) conducted experiments in which players earned a known dollar amount if the responder rejected the proposer's ultimatum offer. For example, if the amount to be divided is \$10, and, if the offer was rejected, proposers earned \$4 and responders earned \$3. There are two obvious fair divisions: to simply divide the \$10.00 evenly, giving both parties an equal payoff of \$5.00 or to divide the surplus over the outside offers evenly; in this example, an offer of \$4.50 would give the responder a surplus of \$1.50 ( $\$4.50 - \$3.00$ ) and the proposer an equal surplus of \$1.50 ( $\$5.50 - \$4.00$ ). These alternative definitions create scope for self-serving assessments of fairness, and indeed, respondents in this situation consistently demanded more than half the "pie," and about half of the offers were rejected -- a rate of disagreement much higher than previous ultimatum studies.

Two studies of labor negotiations have produced similar evidence that can be interpreted as showing self-serving biases. In an experimental study of labor-management negotiations, Thompson and Loewenstein (1992) found that management estimates of a fair settlement were significantly lower than those provided by the union, and observed a significant positive correlation between the difference in assessments of fairness and the length of strikes. They also manipulated the complexity of information provided to the two sides and found that complexity had a small but significant effect in increasing the discrepancy between the union and management's self-serving perceptions of the fair wage.

In a field study examining the use of arbitration in contract negotiations for public school teachers in Wisconsin, Babcock and Olson (1992) found that increases in the variation of wage settlements within a district's athletic conference increased the probability that the district failed to negotiate a contract and ended up using arbitration. This evidence can be interpreted in the same way as our field study of Pennsylvania teachers mentioned earlier; when there are numerous potential comparison groups to assess

fairness, the parties focus on those that favor themselves.

## Discussion

Taken as a body, the research discussed here presents strong evidence that the self-serving bias is an important determinant of bargaining impasse. As a general lesson, the research suggests that, for the bias to occur, there needs to be some form of asymmetry in how the negotiation environment is viewed. This should not be taken to mean that the bias comes from asymmetric information. Instead, what we have in mind is that the parties -- even with complete information -- interpret the situation in different ways. Few subjects placed in a symmetric bargaining setting in which they are instructed to divide \$10 with another party will believe that anything other than an even split is fair. However, even in a very simple setting like this, as soon as asymmetries are introduced between the parties -- for example, different non-agreement values or costs of non-settlement, or subtle differences in roles -- both parties' notions of fairness will tend to gravitate towards settlements that favor themselves. They will not only view these settlements as fair, but believe that their personal conception of fairness is impartial.

We have attempted to show that the self-serving bias provides an account of impasse that has greater explanatory power than models based on incomplete information. Moreover, the self-serving bias may also help explain other important economic phenomena, such as unemployment. If job searchers have inflated evaluations of their productivity, they will have unrealistically high reservation wages, leading to longer unemployment spells. Research has found that job search assistance programs lead unemployed workers to find jobs more quickly. One reason these programs are successful may be that, like our

debiasing treatment described above, they deflate expectations causing individuals to be more objective about their alternatives. Self-serving biases may also help to explain the low take-up rate for unemployment insurance (the percent of eligible individuals that use the program). Again, if workers have inflated expectations regarding their job search, they will believe that they will quickly find a good job, reducing the incentive to apply for assistance. Other research has found that self-serving biases contribute to the "tragedy of the commons" problems. When individuals evaluate their "fair share" of the scarce resource in a self-serving way, they will deplete the resource at a faster rate (Wade-Benzoni, Tenbrunsel, and Bazerman, 1996). A closely related bias, over-confidence, may help to explain what some researchers view as excessive trading in foreign exchange markets and on the New York Stock Exchange. Odean (1995) develops a financial market model in which traders are over-confident about the precision of their private information. This leads to a quasi-rational expectations equilibria where there is excessive trading volume.

The self-serving bias has other wide-ranging ramifications. Whenever individuals face tradeoffs between what is best for themselves and what is morally correct, their perceptions of moral correctness are likely to be biased in the direction of what is best for themselves (Loewenstein, 1996). In making the tradeoff, then, self-interest enters twice -- directly, when it is traded off against moral correctness, and indirectly via its impact on perceptions of moral correctness. Transplant surgeons, for example, must often decide how to allocate scarce organs between potential recipients. To maintain favorable statistics, their self-interest may not be to transplant those who would benefit most in terms of *increased* survival, but instead those where the probability of a successful operation is highest. Based on the research we have reviewed, it seems likely that transplant surgeons' views of who benefits most from the transplant will be

distorted by their interest in "cream skimming." Similarly, we suspect, doctors who change to a remuneration system that compensates them less for conducting medical tests are likely to alter their views concerning the medical value of testing. In a different domain, it seems likely that the judgments of auditors, who ostensibly represent the interests of shareholders but are hired (and fired) by the people they audit, are likely to be blinded to some degree by the incentive for client retention.

### Will Experience and Learning Minimize the Bias?

When we have presented this work, three issues are commonly raised, all relating to the importance of the self-serving bias in the real world. First, it is suggested that, while naive experimental subjects might exhibit such a bias, trained professionals, such as lawyers, would be resistant. Besides the evidence from our field study of Pennsylvania teachers, which shows that seasoned negotiators are subject to the bias, other evidence also shows that professionals are not immune. For example, Eisenberg (1994) analyzed a survey conducted with 205 experienced bankruptcy lawyers and 150 judges involved in bankruptcy cases, that asked a series of questions about lawyers' fees, such as how long it takes judges to rule on fee applications and the fairness of fees. Comparisons of judges' and lawyers' responses revealed a self-serving bias in virtually every question in the survey. For example, 78 percent of judges reported that they rule on interim fee applications at the fee hearing, but only 46 percent of lawyers report that the judges rule so quickly. Thirty-seven percent of judges reported that they most frequently allow reimbursement at the "value of the services," while only 15 percent of lawyers reported that judges reimburse at such rates. Sixty percent of lawyers report that they always comply with fee guidelines, but judges reported that only 18 percent of attorneys always comply. Whether the lawyers or judges or, most likely, both, are responsible

for these discrepancies, this evidence certainly does not suggest that professionals are immune to the self-serving bias.

A second criticism raised is that the stakes involved in our experiments are too low -- that our subjects are insufficiently motivated to process the information in an unbiased way. This criticism fails on several grounds. First, these biases are observed in real world settings in which the stakes are extremely high such as the teacher contract negotiations described above. Second, individuals are unlikely to be conscious of their biased processing of information so that increases in incentives will not cause them to be more conscientious. Third, "high stakes" experiments, such as those conducted by Hoffman, McCabe and Smith (1996), have not produced substantively different behavior than those with lower stakes.

A third criticism of the experiments is that they fail to allow for learning. While our experiments were "one-shot", in most economics experiments it is common to run subjects through the same procedure multiple times to allow for learning. It is not at all obvious, however, that the real world allows for anything like the opportunities for learning that are present in economics laboratory experiments. Most people find themselves only sporadically involved in bargaining, and each bargaining situation differs from past situations on numerous dimensions. Undoubtedly, all of our experimental subjects, especially the law and business school students, had numerous experiences with bargaining prior to participating in our experiment, but this experience did not seem to alert them even to the existence of the self-serving bias, let alone actually give them the capacity to counteract it. We should also note that our results from the Pennsylvania field study are not consistent with the notion that experience will eliminate the bias.

In fact, there is reason to be concerned that experience and real history almost always contain the kind of ambiguous information and competing claims that are breeding grounds for self-serving assessments

of fairness. In a study by Camerer and Loewenstein (1993), subjects bargained over the sale of a piece of land, knowing only their reservation value. All pairs agreed on a sale price. In a second phase, the same pairs of students negotiated the identical situation again, after learning their partners' reservation value. Twenty percent of pairs failed to settle on this second round, despite the fact that they possessed more information. Students who did poorly in the first round felt that they deserved to be compensated for the previous bad outcome. Those who did well in the first round viewed the first round as irrelevant to the second. One important implication of these results for mediation is that recriminations about the past should be excluded from negotiations to the greatest extent possible. If the adage "let bygones be bygones" applies to economic decision making, it applies doubly to negotiations.

#### Methods: Psychology and Economics

Experimental economists find several features of the studies discussed in this paper to be unusual. The first is the inclusion of a rich legal context in the experiment. Experiments in economics often deliberately limit the context of the interaction, with generic labeling of roles and rigidly controlled communications between the parties. As Cox and Isaac (1986) write, experiments in economics do not normally involve 'role playing' by subjects, that is "experiments in which the instructions, context, and/or motivation of the experimental design draw upon subjects' knowledge of economic agents or institutions outside the laboratory." In contrast, in our Texas tort experiment subjects took the role of a party in a realistic law case with unstructured face-to-face communication. As our choice of method implies, we think the emphasis among economists on expunging context in experiments is a mistake. Human thinking, problem solving, and choice, is highly context-dependent. Psychologists have found that there are many

problems that people are unable to solve in the abstract, but are able to solve when placed in a real-world context (Goldstein and Weber, 1995).

One classical illustration is the Wason "four card problem." Subjects are shown a deck of cards, each with a number on one side and a letter on the other. The exposed sides they see are: X, Y, 1, and 2. They are asked which cards need to be turned over to test the rule that "if there is an X on one side there is a 2 on the other." When the problem is given to people in the abstract form just described, very few people give the correct answer, which is "X" and "1." However, when the task is put into a familiar context, almost everyone answers correctly. For example, when the rule is "If a student is to be assigned to Grover High School, then that student must live in Grover City," and students are shown cards that read "lives in Grover city," "doesn't live in Grover city," "assigned to Grover High School," and "not assigned to Grover High School" (with the relevant information on the other side of the card), 89 percent of subjects state correctly which cards need to be turned over (Cosmides, 1989).

The notion of a "context-free" experiment is, in any case, illusory. Experiments using the ultimatum game have shown that seemingly subtle variations in procedure that should not matter from a strictly economic point of view -- for example, the mechanism that determines the roles, whether the game is framed as an offer game or a demand game, and the timing and method of eliciting an offer -- all have powerful effects on how people play the game (Blount, 1996; Hoffman, McCabe, Shachat, and Smith, 1994). Researchers who subscribe to the illusion that their particular experiment is "context free" are likely to come away with an exaggerated sense of the generalizability of their findings.

A second non-standard feature of the Texas tort experiments and the Pennsylvania teachers field study is that we measured subjects' perceptions. Economists, like behaviorist psychologists, sometimes

pride themselves on measuring behavior, rather than perceptions. As a practical matter, we often delude ourselves by this distinction. Much of the data on "behavior" used in economic analyses comes from surveys, such as the National Longitudinal Survey and Current Population Survey, in which respondents provide information on such things as jobs, wages, spells of unemployment, and so on. However, such self-reports of behavior are highly fallible, because of biases, limitations in memory, and deliberate misreporting. Indeed, Akerlof and Yellen (1985) have shown that people do not even seem able to remember with any great accuracy whether they were employed or unemployed during the past year.

Moreover, failure to collect data on psychological constructs robs us of information that can contribute to more nuanced tests of theory. For example, Tracy (1986, 1987) finds a positive relationship between investor uncertainty (a proxy for the union's uncertainty about the firm) and strike activity and cites this as evidence consistent with an asymmetric information model of impasse. However, there are undoubtedly many theories that could predict this positive correlation. Only by actually collecting data on the unions' perceptions of firm profitability before and after contract negotiations can one directly test the notion that firms are using delay in settlement to signal information about their profitability to the union. Because of the reluctance to collect and analyze data on intervening variables, economists have sometimes been forced into very coarse tests of their models' predictions.

Some economists are concerned that incorporating psychology would complicate economic analysis or force an abandonment of the traditional tools of constrained maximization. Nothing could be further from the truth. Models that incorporate individuals' preferences for "fair" outcomes still use traditional methods, yet lead to predictions with more empirical support than conventional models (Bolton, 1991; Rabin, 1993). Recent attempts to model self-serving interpretations of fairness (Rabin, 1995) we



hope will help to persuade more economists that psychological factors can be incorporated into formal economic analyses.

All economics involves psychology. Bayes' rule, the rational expectations assumption, and the theory of revealed preference are all *psychological* assumptions about how people form expectations and what motivates them. The question for economics is not whether to include or exclude psychology, but rather what type of psychology to include.

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**Table 1**

**Probability of Impasse by  
Discrepancy Between Plaintiffs' and Defendants' Assessments of the Judge**

	<b>Pairs in which the discrepancy is:</b>	
	<b>Below the Median</b>	<b>Above the Median</b>
Loewenstein, Issacharoff, Camerer, and Babcock (1993) (n=80)	.03 (.03)	.30 (.09)
Babcock, Loewenstein, Issacharoff, and Camerer (1995) (n=94)	.04 (.03)	.28 (.06)
Babcock, Loewenstein, and Issacharoff (1996) (n=49)	.04 (.04)	.36 (.10)

Standard errors are in parentheses. All differences are significant at the .01 level.



**Table 2**

**Discrepancy in Assessments of the Judge and Rates of Impasse by Condition**

<b>Babcock, Loewenstein, Issacharoff, and Camerer (1995)</b>	<b>Learned roles before read case</b>	<b>Learned roles after read case</b>
Discrepancy in Assessments of the Judge	\$18,555 (3,787)	\$-6,936 (4,179)
Impasse Rate	.28 (.07)	.06 (.03)

  

<b>Babcock, Loewenstein, and Issacharoff (1996)</b>	<b>Control</b>	<b>Learned about Bias and Listed Weaknesses</b>
Discrepancy in Assessments of the Judge	\$21,783 (3,956)	\$ 4,674 (6,091)
Impasse Rate	.35 (.10)	.04 (.04)

Standard errors are in parentheses. All differences are significant at the .05 level.

## Endnotes

1. Blount (1996) offers an empirical investigation of this point, while Rabin (1993) provides a literature review and a theoretical analysis. See also Kagel, Kim and Moser (1996).
2. In some of the experiments, subjects were given a week to read the case and in other experiments, they were given thirty minutes.
3. The response rate for returning the survey was 57 percent for the union presidents and 35 percent for the school board presidents. See Babcock, Wang, and Loewenstein (1996) for details on the response rate and issues of selectivity bias.
4. For a brief discussion of the game and an overview of findings from various permutations, see Camerer and Thaler (1995).