SUIT VERSUS SETTLEMENT WHEN PARTIES SEEK NONMONETARY JUDGMENTS

*STEVEN SHAVELL**

I. Introduction

THIS article is concerned with the manifold situations in which plaintiffs seek nonmonetary judgments—custody of a child, an injunction, ownership of the family business, or award of a contested patent.

When in such situations will the parties be likely to settle, and, if so, what will be the nature of their settlements? When will the parties tend to go to trial? As we will see below, the answers to these questions are not the same as they are when plaintiffs seek purely monetary awards. In those cases, settlements involve only money payments, whereas here they involve the disposition of nonmonetary things as well (who obtains custody of a child, whether or not the right the plaintiff wants to enjoin is enjoyed by the defendant). Also, as is well known, when plaintiffs seek monetary judgments, the parties will be inclined to settle to save litigation costs and reduce risk if they agree about the likelihood of plaintiff success at trial,[1] but here that is not necessarily true.[2] In the analysis, I distinguish between two situations: where the judgment sought cannot be divided

* Professor of Law and Economics, Harvard Law School. I wish to thank Louis Kaplow, Robert Mnookin, and Kathryn Spier for comments and the National Science Foundation (grant SES-911-1947) for research support.

[1] See John Gould, The Economics of Legal Conflicts, 2 J. Legal Stud. 279 (1973); William M. Landes, An Economic Analysis of the Courts, 14 J. Law & Econ. 61 (1971); Richard A. Posner, Economic Analysis of Law (3d ed. 1986); and Steven Shavell, Suit, Settlement, and Trial: A Theoretical Analysis under Alternative Methods for the Allocation of Legal Costs, 11 J. Legal Stud. 55 (1982); and see the general survey by Robert D. Cooter & Daniel L. Rubinfeld, Economic Analysis of Legal Disputes and Their Resolution, 27 J. Econ. Lit. 1067 (1989).

[2] For simplicity and purposes of comparison with the monetary case, I assume in the analysis that the plaintiff and the defendant agree about the likelihood of the trial outcome, but see the remark on disagreement in Section III.

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between the parties, and where it can. These situations may be summarized as follows.

Judgment Sought Is Indivisible. This might be true if custody of a child is desired (suppose that the parents live in different cities, so that joint custody would be hard to arrange) or if an injunction against a factory's polluting operations is pursued (perhaps the factory cannot practically abate the pollution, so that the factory must either shut down or continue as it has). When the thing sought is indivisible, any settlement must provide for the disposition of the thing in its entirety to one of the two parties.

Now define two dollar amounts for each party. Let a party's *maximum willingness to pay* be the most the party would pay the other in order to have the thing sought (the most a parent would pay to have custody of the child) rather than go to trial and risk loss of the thing. Second, let the *minimum acceptable demand* be the least that a party would accept for agreeing to give up the thing sought (the least a parent would accept if he or she agreed to allow the other parent to have custody) rather than go to trial and win the thing with some likelihood. If the thing sought is sufficiently important to a party, the minimum acceptable demand may be very high, considerably exceeding the party's wealth, or may not even exist (there may be no amount of money that would compensate for loss of the opportunity to obtain custody of a child).

The parties' behavior can be simply expressed in terms of their maximum willingness-to-pay and minimum-acceptable-demand amounts. (i) If one party's willingness to pay for the thing sought exceeds the other's minimum acceptable demand, a mutually beneficial settlement exists, under which the thing sought would be obtained by the first party and a payment would be made to the second. (ii) If, however, each party's willingness to pay for the thing sought is lower than the other's minimum acceptable demand, there will be a trial. This would be the situation if the thing sought is quite important to both parties, so that the minimum acceptable demand of each would be high. (Custody of a child may well be considered vital by each parent, making each unwilling to relinquish the chance of securing custody through trial for any amount in the range of what the other could pay.) In such an instance, the point is that each party would rationally go to trial for the prospect of obtaining the very valuable judgment rather than accept the small-by-comparison maximum amount the other party could offer in settlement.[3]

[3] Interestingly, this point is asserted by Robert H. Mnookin & Lewis A. Kornhauser, Bargaining in the Shadow of the Law: The Case of Divorce, 88 Yale L. J. 950 (1979), who say: "If the object of dispute cannot be divided . . . there may be no middle ground on

Judgment Sought Is Divisible. If the thing sought by the parties can be divided, then there will exist a mutually beneficial settlement regardless of the parties' willingness to pay and minimum-acceptable-demand amounts. In particular, in the situation just described where there would be a trial, there will now tend to be a settlement, in which the thing sought is divided between the parties. (The parents who would go to trial if joint custody is unavailable will be likely to settle if they can arrange joint custody.)

Section II below provides the formal analysis demonstrating the points just summarized. This is done initially for the simple and illuminating case in which parties are assumed to be risk neutral; then the risk-averse case is addressed. Section III offers several concluding remarks.

II. Analysis

Assume that a plaintiff has brought suit against a defendant and that the parties are considering whether to settle or go to trial. If they go to trial, each would bear legal costs, and the judgment would be nonmonetary and would be of one of two forms—either in favor of the plaintiff or in favor of the defendant. Also, the parties have identical beliefs about the probability of each trial outcome.

Define the following variables:

w_i = initial wealth of party i—party p is the plaintiff and party d is the defendant; $w_i > 0$;
a_i = utility for party i from the nonmonetary thing; $a_i > 0$;
c_i = cost of going to trial for party i; $c_i > 0$; and
q = probability that the plaintiff will win at trial.

Also, let

x_i = maximum willingness to pay for the thing by party i; $w_i \geq x_i \geq 0$; and
y_i = minimum acceptable demand of party i for allowing the thing to be obtained by the other party; $y_i \geq 0$.

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which to strike a feasible compromise." *Id.* at 975. To illustrate the point, suppose that each parent seeking custody would value it as equivalent to \$1,000,000 and that each believes the likelihood of winning custody is 50 percent. Then, for either parent to agree to a settlement and give up custody, that parent would have to be paid at least \$500,000 (or, to be precise, \$500,000 less the costs of trial). But neither parent may have an amount remotely approaching \$500,000, so that trial would result. (In this example, the limited wealth of parents leads to trial. Limited wealth is an important sufficient condition for trial, but, as will be seen in Section II*B*, it is not a necessary condition for trial.)

These quantities, x_i and y_i, will be determined below. In addition, let

s = amount paid in settlement.

The amount paid and by whom will be discussed subsequently.

Let us now consider the case where the parties are risk neutral and then the case when they are risk averse. In each case, the thing sought will be supposed first to be indivisible and then to be divisible.

A. *Risk-neutral Case*

If the plaintiff goes to trial, his expected utility is

$$t_p = w_p - c_p + qa_p. \tag{1}$$

Hence, if there is an $x \leq w_p$ satisfying

$$w_p - x + a_p = t_p, \tag{2}$$

then this is x_p, and thus

$$x_p = c_p + (1 - q)a_p. \tag{3}$$

Otherwise, the plaintiff will be strictly better off paying his entire wealth w_p in order to have the thing, so that x_p will be w_p, and we will say that the plaintiff is *wealth constrained*. Continuing, y_p is determined by

$$w_p + y_p = t_p, \tag{4}$$

so that[4]

$$y_p = qa_p - c_p. \tag{5}$$

Similarly, if there is a trial, the defendant's expected utility is

$$t_d = w_d - c_d + (1 - q)a_d. \tag{6}$$

Hence, if there is an $x \leq w_d$ such that

$$w_d - x + a_d = t_d, \tag{7}$$

then this is x_d, and

$$x_d = c_d + qa_d. \tag{8}$$

Otherwise, $x_d = w_d$, and we will say that the defendant is wealth constrained. In addition, y_d is determined by

$$w_d + y_d = t_d, \tag{9}$$

[4] I assume here and below that $qa_p \geq c_p$, and that the plaintiff would be willing to go to trial (to avoid uninteresting cases), and I assume the analogue about the defendant, that $(1 - q)a_d \geq c_d$.

so that

$$y_d = (1 - q)a_d - c_d. \tag{10}$$

Before discussing settlement and suit, let me state the following.

REMARK 1. (*a*) A party is wealth constrained and his maximum willingness to pay equals his wealth if his wealth is sufficiently low; his cost of litigation is sufficiently high; his utility from the thing is sufficiently high; or, possibly, his probability of losing at trial is sufficiently high.

(*b*) If a party is not wealth constrained, his maximum willingness to pay is increasing in his cost of litigation, in his likelihood of losing the thing at trial, and in his utility from the thing.

(*c*) The minimum acceptable demand of a party for giving up the thing is higher the higher his likelihood of winning at trial, the higher his utility from the thing, and the lower his cost of litigation.

This remark follows from (3), (5), (8), and (10).

1. Indivisible Thing

Now let us consider settlement versus trial assuming that the thing sought is indivisibile.

A *settlement* is described by the identification of the party who obtains the thing and by what he pays the other party. A *Pareto-optimal settlement* is a settlement for which two things are true: each party is at least as well off as if he had gone to trial, and there is no different settlement such that each party would be at least as well off under it as under the given settlement. The main conclusion of the present section is the following.

PROPOSITION 1. (*a*) There exists a Pareto-optimal settlement whenever, for at least one party i, maximum willingness to pay x_i is greater than or equal to the other party j's minimum acceptable demand y_j. Under a Pareto-optimal settlement, where $x_i \geq y_j$, party i pays party j an amount between x_i and y_j and obtains the thing.

(*b*) Otherwise, there will be a trial; that is, whenever, for each party, willingness to pay x_i is less than the other party's minimum acceptable demand y_j. (This case is possible, as is case *a*.)

Note. The reason that there may exist a settlement is that this may save both parties litigation costs. But, if the parties are unable to meet each other's minimum demand for giving up the thing, there will be a trial despite the savings in litigation costs that could be achieved by settling.

Proof. (*a*) From the definitions of x_i and y_j, it is apparent that, if $x_i \geq y_j$, party i pays an amount between x_i and y_j to j, and i obtains the thing, then each will be at least as well off as if he had gone to trial. Also, it is clear that there can be no other settlement in which i obtains the thing that is Pareto superior (at least as good for both parties) to the given settlement. It is possible (as will be discussed below), however, that $x_j \geq y_i$ is also true, so that a settlement in which j obtains the thing and pays an amount between x_j and y_i to i is also Pareto superior to trial. In that case, the second kind of settlement may be Pareto superior to the first, but this also satisfies the claim of the proposition. Finally, to show that settlement is possible, suppose that $w_p = w_d = 10$, $a_p = a_d = 5$, $c_p = c_d = 1$, and $q = .5$. Then $x_p = x_d = 3.5 > y_p = y_d = 1.5$, so there exist settlements that are Pareto superior to trial.

(*b*) From the definitions, it follows that, if $x_p < y_d$ and $x_d < y_p$, there does not exist a Pareto-optimal settlement and trial must occur. To demonstrate this possibility, suppose that $w_p = w_d = 10$, $a_p = a_d = 50$, $c_p = c_d = 1$, and $q = .5$. Then $x_p = x_d = 10 < y_p = y_d = 24$, so there does not exist a Pareto-optimal settlement. Q.E.D.

It is informative to examine when the conditions under which trial and settlement will occur hold and, if settlement will occur, who will obtain the thing. The answers depend importantly on the wealth of the parties and the utility they would obtain from the thing they seek. In the remainder of this section, assume for simplicity that one of the a_i's is higher than the other.[5] We have the following.

PROPOSITION 2. (*a*) If the party who values the thing more is not wealth constrained, there is a Pareto-optimal settlement in which he will obtain the thing, and there is no Pareto-optimal settlement in which the other party obtains the thing.[6]

(*b*) Otherwise, there are three possibilities: a Pareto-optimal settlement in which the party who values the thing more obtains it, a Pareto-optimal settlement in which the party who values the thing less obtains it, or a trial.

Note. The explanation for a is that, not being wealth constrained, the party who values the thing more will be willing to pay more to have it in the "trade" that occurs through settlement negotiations. And the affirmative reason for settlement to be appealing to the two parties is that they thereby escape litigation costs. With regard to b, if the party who values the thing more is wealth constrained, he still may be able to pay enough to obtain the thing in a settlement. If not, the fact that there are

[5] The statement of the propositions would be cluttered if I treated the case where $a_p = a_d$, but I will comment about it in notes 6 and 15 *infra*.

[6] If the a_i's are equal, then, if at least one party is not wealth constrained, there will be a Pareto-optimal settlement, but the thing might be obtained by either party.

savings in litigation costs from settlement may make the settlement in which the other party obtains the thing mutually attractive. But, if the other party cannot or is not willing to pay enough to the party who values the thing more in order to meet his minimum demand, there will be a trial.

Proof. (*a*) Suppose that $a_p > a_d$ and the plaintiff is not wealth constrained (the opposite case, in which $a_d > a_p$, is essentially the same and will not be treated here or in *b*). We will first show that $x_p > y_d$, that is, $c_p + (1 - q)a_p > (1 - q)a_d - c_d$. But this is equivalent to $c_p + c_d > (1 - q)(a_d - a_p)$, which holds since $a_p > a_d$. Now, if also $x_d < y_p$, then the only type of settlement that Pareto dominates trial is that in which the plaintiff obtains the thing, so we are done.[7] Suppose, however, that $x_d \geq y_p$. (This is possible since $c_d + qa_d > qa_p - c_p$ may hold even though $a_p > a_d$.) Consider a settlement in which the defendant obtains the thing and pays an amount s between x_d and y_p to the plaintiff. Then the plaintiff's utility is $w_p + s$, and the defendant's is $w_d - s + a_d$. Consider instead a settlement in which the plaintiff obtains the thing and pays the defendant the amount $s' = a_p - s - \epsilon$, where ϵ is positive and small. Then the plaintiff is better off (for his utility is $w_p + s + \epsilon$), and so is the defendant (his utility is $w_d - s + a_p - \epsilon$, which exceeds $w_d - s + a_d$ since ϵ is small). Moreover, this payment s' is possible for the plaintiff to make, for it is bounded by $a_p - y_p = x_p$. Hence, we have shown that there is a Pareto-superior settlement in which the plaintiff obtains the thing.[8]

(*b*) Now suppose that, although $a_p > a_d$, the plaintiff is wealth constrained, so that $x_p = w_p$. Then there are several possibilities. One is that $w_p \geq y_d$ and $x_d < y_p$. In this case, there will be a Pareto-optimal settlement with the plaintiff obtaining the thing.[9] If, however, $w_p \geq y_d$ and $x_d \geq y_p$, then it may be that there is a Pareto-optimal settlement in which the

[7] An example of the case just discussed is this: $a_p = 20$, $a_d = 10$, $w_p = 15$, $w_d = 15$, $c_p = c_d = 2$, and $q = .5$. Then $x_p = 12 > 3 = y_d$, and $x_d = 7 < 8 = y_p$.

[8] To illustrate the case just discussed, suppose that $a_p = 20$, $a_d = 18$, $w_p = 15$, $w_d = 15$, $c_p = c_d = 2$, and $q = .5$. Then $x_p = 12 > 7 = y_d$, and $x_d = 11 > 8 = y_p$, so that a settlement in which the defendant obtains the thing is Pareto superior to trial. But the point is that such a settlement must be Pareto inferior to an alternative settlement in which the plaintiff obtains the thing. For instance, consider a settlement in which the defendant obtains the thing and pays the plaintiff 10. The defendant's utility is then $15 - 10 + 18 = 23$ and the plaintiff's is $15 + 10 = 25$. Now instead consider a settlement in which the plaintiff obtains the thing and pays the defendant 9. Then the plaintiff's utility is $15 - 9 + 20 = 26$ and the defendant's is $15 + 9 = 24$, so both are better off.

[9] For example, suppose that $a_p = 20$, $a_d = 10$, $w_p = 11$, $w_d = 15$, $c_p = c_d = 2$, and $q = .5$. Then $x_p = w_p = 11 > 3 = y_d$, and $x_d = 7 < 8 = y_p$.

defendant obtains the thing.[10] Second, it may be that $w_p < y_d$ and $x_d \geq y_p$.[11] In this case, there is a Pareto-optimal settlement in which the defendant obtains the thing. Third, it may be that $w_p < y_d$ and $x_d < y_p$.[12] In this case, there will be a trial. Q.E.D.

2. Divisible Thing

I now assume that, in a settlement, the parties may divide the thing between them.[13] Let

λ = fraction of the thing obtained by the plaintiff in a settlement.

I assume also that in a settlement the plaintiff will obtain utility from the thing of λa_p and that the defendant will obtain utility of $(1 - \lambda)a_d$.[14] A settlement is now described by a payment and by a λ. We have the following result.

Proposition 3. There always exists a Pareto-optimal settlement. In particular:

(*a*) The party who places greater utility on the thing either will obtain the entire thing or, if not, will spend all his wealth on the settlement.[15]

(*b*) If there would have been a trial had the thing been indivisible, the settlement will be such that the thing is partially divided, with the party who places greater utility on it paying all his wealth to the other party.

Note. That there will always exist a Pareto-optimal settlement is clear; for one possible settlement that dominates trial for each party is simply to split the thing according to the odds of success at trial; that is, the

[10] Suppose that $a_p = 20$, $a_d = 18$, $w_p = 9$, $w_d = 15$, $c_p = c_d = 2$, $q = .5$. Then $x_p = w_p = 9 > 7 = y_d$, and $x_d = 11 > 8 = y_p$. Consider the settlement in which the defendant obtains the thing and pays the plaintiff 8. The plaintiff's utility would be 9 + 8 = 17, and the defendant's, 15 − 8 + 18 = 25. A Pareto-superior settlement in which the plaintiff obtains the thing does not exist: for the defendant to be better off, he must receive a payment in settlement of at least 10, but the plaintiff has only 9 to pay.

[11] Suppose that $a_p = 20$, $a_d = 18$, $w_p = 5$, $w_d = 15$, $c_p = c_d = 2$, and $q = .5$. Then $x_p = w_p = 5 < 7 = y_d$, and $x_d = 11 > 8 = y_p$.

[12] Suppose that $a_p = 20$, $a_d = 18$, $w_p = 5$, $w_d = 5$, $c_p = c_d = 2$, and $q = .5$. Then $x_p = w_p = 5 < 7 = y_d$, and $x_d = w_d = 5 < 8 = y_p$.

[13] I continue to assume that the award in court would not be a division of the thing, but rather an award entirely in favor of one party or of the other.

[14] Another possible assumption is that the utility the parties obtain from the thing is of the form $a_i(\lambda)$, where a_i is increasing in λ but at a declining rate; that is, $a_i''(\lambda) < 0$. Were this the case, there would be greater reason for the parties to divide the thing than will be shown to be true below. Another assumption is that a_i is increasing in λ and at an increasing rate. Were this the case, there would be lesser reason for the parties to divide the thing than will be shown to be true.

[15] If the a_i's are equal, then the thing can be divided between the parties, and it may be that neither spends his entire wealth on the settlement.

plaintiff obtains $\lambda = q$ of the thing and the defendant $1 - q$. This, however, will not generally be a Pareto-optimal settlement since the party who values the thing more will be willing to trade money for a higher fraction of the thing and for all of it if he has enough money.

Proof. That there is always some settlement that is Pareto superior to trial is clear from what was stated in the note above. Now assume that the party who values the thing more is the plaintiff (the other case is similar), does not obtain all of the thing in the settlement, yet has positive wealth left. Then it is possible to increase λ by a small amount ϵ and to increase s by $\epsilon(a_d + \delta)$, where δ is small and satisfies $a_d + \delta < a_p$. But this change will make both parties better off. This argument establishes *a*.

With regard to *b,* observe that it is not possible for either party to obtain the entire thing in settlement since, by hypothesis, $x_i < y_j$ and $x_j < y_i$. This and *a* establish *b*. Q.E.D.

B. *Risk-averse Case*

Now assume that the plaintiff and the defendant are each risk averse in wealth. Specifically, let

$U(w)$ = plaintiff's utility from wealth; $U'(w) > 0$ and $U''(w) < 0$;
$V(w)$ = defendant's utility from wealth; $V'(w) > 0$ and $V''(w) < 0$.

Thus, the plaintiff's and the defendant's utilities from trial are, respectively,

$$t_p = U(w_p - c_p) + qa_p \tag{11}$$

and

$$t_d = V(w_d - c_d) + (1 - q)a_d. \tag{12}$$

Also, x_p is determined by

$$U(w_p - x) + a_p = t_p \tag{13}$$

if there is an $x \leq w_p$ satisfying (13); otherwise, the plaintiff is wealth constrained, and $x_p = w_p$. Similarly, x_d is determined by

$$V(w_d - x) + a_d = t_d \tag{14}$$

if there is an $x \leq w_d$ satisfying (14); otherwise, the defendant is wealth constrained, and $x_d = w_d$.

In addition, y_p is determined by

$$U(w_p + y) = t_p \tag{15}$$

if there is a nonnegative y satisfying (15); otherwise, y_p does not exist. The reason that y_p may not exist is that utility of wealth is assumed to be bounded.[16] (There may be no amount of money that would compensate a person for not having the chance to obtain something, such as custody or freedom from risk to health.) If b_p is the least upper bound of the plaintiff's utility from wealth and $b_p < qa_p$, it is apparent that y_p will not exist. Likewise, y_d is determined by

$$V(w_d + y) = t_d \tag{16}$$

if such a y exists.

Before considering settlement versus trial, let me state the following.

REMARK 2. The claims in remark 1 apply. Moreover, the maximum willingness to pay (when a party is not wealth constrained) and the minimum acceptable demand (when it exists) are each increasing in a party's wealth.

It is straightforward to demonstrate that wealth increases maximum willingness to pay and the minimum acceptable demand by implicit differentiation of the equations defining these quantities.[17] The explanation is that the marginal utility of money decreases with wealth, so the dollar amount corresponding to any given expected utility (and, in particular, the expected value of either gaining the thing sought through trial or losing this opportunity) increases with wealth.

1. Indivisible Thing

In this case, we have the following.

PROPOSITION 4. Proposition 1 continues to describe whether there will be a Pareto-optimal settlement or a trial.

The explanation is as before; it follows essentially from the definitions of maximum willingness to pay and of minimum acceptable demand. There is no natural analogue to proposition 2, however.[18] It is worth noting, though, two things. First, if the minimum acceptable demand fails

[16] That utility is bounded follows from the expected-utility theorem; see, for example, Kenneth J. Arrow, Essays in the Theory of Risk-bearing 63–69 (1971).

[17] For example, implicit differentiation of $U(w_p - x_p) + a_p = U(w_p - c_p) + qa_p$ with respect to w_p gives $x_p'(w_p) = 1 - U'(w_p - c_p)/U'(w_p - x_p)$. If the party is risk averse, then $U'(w_p - c_p) < U'(w_p - x_p)$ since, from (13), it is apparent that $x_p > c_p$; hence $x_p'(w_p) > 0$.

[18] This is because, unlike the risk-neutral case, the fact that party i has a higher a_i than party j does not have a clear interpretation since the marginal utility of wealth varies with the level of wealth. Notably, the amount that party i will be willing to pay for the thing will depend on his wealth and could be more or less than the amount that j would be willing to pay for the thing.

to exist (something that cannot occur in the risk-neutral case) for both parties, there must be a trial. Second, there may be a trial even though neither party is wealth constrained; that is, $x_i < y_j$ may be true for both parties even though $x_i < w_i$ for both parties. The reason is that, because the utility of dollars is high when parties have little wealth, they may not be willing to give up all their wealth to gain the thing they are seeking; yet they may demand a large amount if they are to give up the chance of obtaining it. Thus, it easily can be that there will be a trial even though the willingness to pay of each party is less than his wealth.

2. Divisible Thing

In this case, in a settlement the utility of the plaintiff is $U(w_p - s) + \lambda a_p$ and that of the defendant is $V(w_d + s) + (1 - \lambda)a_d$ (where we now will allow s to be negative and, if so, interpret it as a payment by the defendant to the plaintiff). We have the following.

PROPOSITION 5. There always exists a Pareto-optimal settlement. In such a settlement, if one of the parties does not obtain the entire thing, the settlement amount s will obey

$$U'(w_p - s)/a_p = V'(w_d + s)/a_d. \tag{17}$$

Also, this equation (and $0 < \lambda < 1$) will characterize the outcome if there would have been a trial had the thing been indivisible.

The proposition follows from the reasoning for proposition 2, except that (17) must be explained. To obtain (17), maximize $U(w_p - s) + \lambda a_p$ over λ assuming that $V(w_d + s) + (1 - \lambda)a_d = k$, where k is a constant.[19] The condition (17) is that the rates at which each party will trade money for an extra fraction of the thing be equal; otherwise, mutually beneficial exchange could occur.

III. DISCUSSION

I make several comments here about the interpretation of the analysis.

When Is the Nonmonetary Judgment Indivisible and When Is It Divisible? Some nonmonetary things that parties seek are, by their nature, indivisible: a divorce (there is no such thing as a partial divorce) or a declaration that a parcel of land is or is not zoned for commercial use.[20]

[19] The latter defines $s = s(\lambda)$, and, implicitly differentiating, we obtain $s'(\lambda) = a_d/V'(w_d + s)$. Hence, setting the derivative of $U(w_p - s) + \lambda a_p$ with respect to λ equal to 0, we obtain (17).

[20] In the latter case, I am assuming that the zoning authority would not allow parties to settle out of court and permit the use of the land for commercial purposes for a portion of the year.

Indeed, many decisions sought from regulatory or other governmental bodies are like the zoning declaration in that they have an either-or nature.

Many other things are divisible, but at a cost. If custody of children is divided between the parents, then additional transportation, clothing, and other living expenses will be incurred. If a family business is split, profits may fall because incentives may be compromised when two people operate the business rather than one. Similarly, if patent rights are divided, they may become less valuable because of reduced incentives to sell the patent to generate royalties. When things are fairly costly to divide, the consequences for suit and settlement will resemble those found in the analysis assuming indivisibility; parties will not want to divide these things, so either they will agree to settlements in which one party obtains the thing in its entirety or they will go to trial.

Of course, things may be cheap to divide, as would be a business or a patent where incentive problems do not arise. In addition, certain things are naturally divisible, such as a quantity of a good like lumber. It should also be noted that, even when something is not naturally divisible, if it has no utility to the parties in itself but has clear market value, then the situation is as if the parties are seeking a monetary award, for the thing can be sold and the receipts divided between the parties. In such cases, we would expect there to be settlement when the parties agree about the probability.

When Is Trial Likely? The analysis confirms and extends what intuition suggests about the likelihood of trial. Assuming the thing is indivisible (or sufficiently costly to divide), I showed that trial occurs where the amount that each person is willing and able to pay falls short of the minimum acceptable demand of the other party. I further indicated that this double situation tends to arise when the wealth of parties is low and/or the values they attach to having the thing are high. In these circumstances, trial is a valuable gamble for each of the parties and for which the amounts of money that can be offered in settlement do not compensate.

In the introduction, I illustrated the possibility of trial with the example of child custody because it is easy to imagine that each parent values custody highly yet has relatively little money to offer in settlement, so each would prefer trial to accepting the most the other could offer in settlement.

It is useful to reflect on other, less obvious, examples. Consider a case where people seek an injunction to halt a factory's pollution that poses a health risk, but where their wealth is not large. Why might trial occur even though the two sides agree on the likelihoods of possible trial outcomes? On the one hand, the people may not be able to pay enough in settlement to the factory to induce it to cease its activity: suppose the value of continued operations to the factory is $2 million and the odds of defeating the injunction are 50 percent; the factory then would have to be offered $1 million to induce it to end its operations, yet the people may have only $100,000 to offer in settlement. On the other hand, the people may value the threat to their health at $10 million, so they would have to be offered $5 million to allow the factory to continue, but the factory would offer at most $1 million. Hence, there could not be a settlement. Note here that it is the low wealth of the people that is responsible for trial, for, if they had higher wealth, they could have and would have paid the factory enough to settle.

But note as well that low wealth is not generally a necessary condition for trial to occur. For instance, as I indicated in Section II*B*, there may be no amount of money that would compensate a party for not having what that party is seeking at trial. This could be so for custody of a child; two very wealthy individuals quite rationally could decide to go to trial because, for each, no amount of money would compensate for the loss of the opportunity to obtain custody.

Empirical Test Suggested by the Theory. The theory considered here can be subjected to an empirical test because it implies that the frequency of trial should be higher, other things being equal, the more costly or difficult it is to divide the thing sought, the higher the values the parties attach to the thing, and the lower their wealth.

Differences of Opinion and Asymmetry of Information. In the standard models of settlement versus trial, differences of opinion about the likelihood of trial outcomes and asymmetry of information[21] lead to the possibility of trial. Obviously, these factors could also lead to trial when, as in this article, the judgment is nonmonetary, for the factors contribute to the possibility that a party's minimum acceptable demand exceeds the other's maximum offer.

Risk Aversion. In the standard models of litigation with monetary judgments, risk aversion is a factor that conduces to settlement because settlement means that the parties avoid the financial risk associated with trial. But, if the outcome is nonmonetary, one supposes that risk aversion often will not have comparable importance because losing will not signify a loss of money, apart from the cost of the trial itself. For instance, losing a legal fight for custody of a child will not mean that a party has suffered a financial loss (losing could actually result in a financial gain if child-rearing expenses thereby are avoided). Hence, the factor of risk aversion seems less significant in promoting settlement when judgments are nonmonetary than when they are monetary.

[21] On asymmetry of information and trial, see, for example, Lucian A. Bebchuk, Litigation and Settlement under Imperfect Information, 15 Rand J. Econ. 404 (1984).