Faculty Scholarship | Faculty Publications

2005

Incomplete Contracts and the Theory of Contract Design

Robert E. Scott
Columbia Law School, rscott@law.columbia.edu

George G. Triantis
University of Virginia School of Law

INCOMPLETE CONTRACTS AND THE THEORY OF CONTRACT DESIGN

Robert E. Scott[†]

George G. Triantis[‡]

We are delighted to accept this invitation to write a short essay on the economic theory of incomplete contracts and to illuminate its current and potential impact on the legal analysis of contracts and contract law. Economic contract theory has made significant inroads in legal scholarship over the past fifteen years, and this is a good time to take stock of its strengths and weaknesses. Several recent publications in the *Yale Law Journal* have offered evaluations of the contributions of contract theory.[1] In this essay, we offer our opinion as to its future path in legal scholarship.[2] In particular, we suggest that economic contract theory should incorporate a more textured understanding of the process for judicial enforcement of contracts. In Part I, we describe briefly the economic theory of incomplete contracts and summarize its most important lessons for lawyers. In Part II, we highlight a limiting feature of economic contract theory: its stylized representation of legal enforcement in the concept of verifiability. We then outline an agenda for research that incorporates a more sophisticated understanding of litigation in the analysis of contract design. We de-

---

[†] David and Mary Harrison Distinguished Professor, University of Virginia School of Law; Justin W. D'Atri Visiting Professor of Law, Business and Society, Columbia Law School.

[‡] Perre Bowen Professor, University of Virginia School of Law; Visiting Professor of Law, Yale Law School.

[1] *See, e.g.,* Ian Ayres, *Valuing Modern Contract Scholarship,* 112 YALE L.J. 881 (2003); Richard Craswell, *In That Case, What Is the Question? Economics and the Demands of Contract Theory,* 112 YALE L.J. 903 (2003); Eric A. Posner, *Economic Analysis of Contract Law After Three Decades: Success or Failure,* 112 YALE L.J. 829 (2003); Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law,* 113 YALE L.J. 541 (2003) [hereinafter Schwartz & Scott, *Contract Theory*].

[2] In this respect, we offer a somewhat different prediction for the future than the pessimistic assessment of Eric Posner or the more optimistic perspective of Ian Ayres. *See* Posner, *supra* note 1; Ayres, *supra* note 1.

scribe briefly the initial steps we have taken in this direction in a forthcoming article.[3]

I. INCOMPLETE CONTRACT THEORY FOR LAWYERS, IN A NUTSHELL

The economic theory of contracts is primarily about contract design, though it indirectly yields normative insights for contract law.[4] The literature assumes that the private goal of contracting parties is to maximize the shared value created by a contract (the "surplus"). The value created by an *exchange* is straightforward: in the sale of a widget, the buyer values the widget more than the seller. But how does a *contract* create additional value? By "contract," lawyers usually mean a legally binding promise to act in the future, such as the promise to deliver a good on a specified future date in exchange for a promise to pay a specified price.[5] There are a number of reasons why parties might contract for future performance. First, they may reside in geographically distant locations so that the tender of performance and its acceptance occur at different times. Second, one party may extend credit to the other so that the performance of the debtor is postponed until a future date. Third, the parties may benefit by shifting risks between each other. Fourth, one or both of the parties may be in a position to make investments in anticipation of the exchange that will increase the exchange value by either (a) lowering the cost of performance or (b) raising the benefit from performance.[6] Economic contract theory, however, is particularly interested in the last of these purposes because it raises intriguing challenges in managing the conflicts between the parties' shared and private incentives.[7]

---

[3] Robert E. Scott & George G. Triantis, *Anticipating Litigation in Contract Design*, 115 YALE L.J. (forthcoming 2006).

[4] For discussion see Aaron S. Edlin, *Breach Remedies*, in 1 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 174-79 (Peter Newman, ed. 1998) [hereinafter NEW PALGRAVE DICTIONARY] (using contract theory to evaluate standard common-law contract remedies); Schwartz & Scott, *Contract Theory*, *supra* note 1 (using contract theory to develop a normative theory of contract law for firms and other business entities).

[5] *See, e.g.*, RESTATEMENT (SECOND) OF CONTRACTS § 1 (1979) ("A contract is a promise . . . for the breach of which the law gives a remedy . . . .").

[6] For discussions of risk shifting and relation-specific investments as the two paradigmatic reasons why parties wish to make legally enforceable contracts, see Schwartz & Scott, *Contract Theory*, *supra* note 1, at 556-65; Alexander J. Triantis and George G. Triantis, *Timing Problems in Contract Breach Decisions*, 41 J.L. & ECON. 163, 170-72 (1998).

[7] Economists distinguish between self (or selfish) specific investment and cooperative investment. For example, a seller may invest to reduce its own cost of performance (self) or to increase the value of its performance to the buyer (cooperative). Efficient cooperative investment can be more difficult to motivate than efficient self investment. For example, when renegotiation is permitted, a contract may be insufficient to motivate cooperative investment. *See* Yeon-Koo Che & Donald Hausch, *Cooperative Investment and the Value of Contracting*, 89 AMER. ECON. REV. 125 (1999); Ilya Segal, *Complexity and Renegotiation: A Foundation for Incomplete Contracts*, 66 REV. ECON. STUD. 57 (1999). Specific investment that is selfish is

Contracts can protect, and thereby encourage, what economists call "specific investments" and what lawyers refer to as "reliance expenditures." Specific investments are made when the resources constituting each party's investment generate more value if they are deployed in the relationship than if they are used for other purposes. Economists identify the optimal level of specific investment as "ex ante efficiency." At the same time, contractual commitments that motivate efficient investment ex ante can upset the efficiency of exchanges ("ex post efficiency") by compelling exchange when there is no surplus to be gained. The source of this problem is that forward contracts are made under uncertainty as to the cost and value of the contractual performance. A contract can commit a party to an exchange that might later become wasteful in that the cost to the promisor of performance exceeds the value to the promisee. At the time of the contract, therefore, the parties should seek to ensure that the exchange takes place in all circumstances when it produces value, but not when it is wasteful.

The objectives of ex ante and ex post efficiency are in tension when parties contract under uncertainty. This is because the commitment necessary to protect the specific investments that generate the expected contractual surplus is often antithetical to the flexibility needed to ensure ex post efficiency. It may turn out, for example, that the value of the contract performance to the promisee is less than the promisor's cost of performance. Under these circumstances, the parties would want the flexibility to avoid an inefficient trade. But an effort to build in flexibility (say by agreeing to renegotiate an inefficient contract ex post) may expose the party that has made sunk cost investments to the risk of exploitation by the noninvesting party. This prospect, in turn, may cause the investing party to reduce or even decline to make welfare enhancing investments, thus undermining ex ante efficiency.

A benchmark solution to the dual objective of ex ante and ex post efficiency is the complete, contingent contract—one that specifies obligations in each possible state of the world. Such a contract ensures that performance occurs when, but only when, it is efficient. And, either by directly specifying an obligation to make a specific investment or by compelling exchange in states when it yields a surplus, the complete, contingent contract encourages the efficient

---

easier to motivate with appropriate contracts. For purposes of our exposition, we confine our attention to selfish specific investment.

amount of specific investing. Unfortunately, however, complete, contingent contracts are impeded by the transaction costs of contracting.

Rather than speaking in general terms about "transaction costs," contract theorists now identify and analyze separately distinct categories of such costs. The most salient categories in economic theory stem from the fact that information is costly, sometimes prohibitively so. Building on this more precise analysis, the information costs of contracting can be separated according to two distinct stages of contracting. At the front-end stage, parties incur ex ante transaction costs, including the costs of anticipating future contingencies and writing a contract that specifies an outcome for each one. At the back-end stage, parties incur ex post enforcement costs, including the costs of observing and proving the existence (or nonexistence) of any relevant fact after uncertainty has been resolved. Both ex ante and ex post contracting costs, then, prevent parties from writing complete contracts and give rise to what economists refer to as the problem of incomplete contracts.

The incompleteness of a contract has a different meaning to an economist than to a lawyer. To a lawyer, a contract may be incomplete in failing to describe the obligations of the parties in each possible state of the world. Should a state of the world materialize that falls within the gap, the enforcing court must choose either to decline to enforce the contract or to fill the gap with a default obligation. The problem with this conception of incompleteness is that it is difficult to explain why parties would leave such gaps. After all, the cost to making contracts complete in this sense is trivial: the parties can simply provide for an obligation that applies to a broadly defined set of contingencies.[8] For example, a contract term that states, "the seller shall deliver a blue widget on September 1, 2005 for a price of $10,000," completely defines the parties' obligations, even if the contract is not efficient.

Economists use incompleteness in a different sense. A contract is incomplete if it fails to provide for the *efficient* set of obligations in *each* possible state of the world. Such a contract is "informationally incomplete" even though it is "obligationally complete" in the sense that it does not contain any gaps. Suppose that, in return for a payment of $10,000, the seller promises to deliver a blue widget to the buyer on a specified date. As just noted, this contract is obligationally complete. But if there are circumstances in which the widget costs

---

    [8] Robert E. Scott, *A Theory of Self-Enforcing Indefinite Contracts*, 103 COLUM. L. REV. 1641 (2003); George G. Triantis, *Contractual Allocations of Unknown Risks: A Critique of the Doctrine of Commercial Impracticability*, 42 U. TORONTO L.J. 450, 464-68 (1992) (arguing that contracts are rarely obligationally incomplete).

more to produce than it is worth to the buyer, the performance of this contract is inefficient. Thus, the contract is incomplete in the economic sense.

What obstacles might prevent the parties from completing their contract by providing explicitly that the seller will not produce and deliver the widget in this contingency? In contract theory, incompleteness is due to the fact that information is costly and sometimes unavailable to (a) the parties at the time of contracting or (b) the parties or the enforcing court at the time of enforcement. We refer to the former as "front-end" transaction costs and the latter as "back-end" enforcement costs. In particular, consider the information necessary to identify contingencies and to provide for the optimal trade obligations in each contingency. On the front end, the parties might not foresee all possible contingencies or they would have to incur prohibitively high negotiation and drafting costs to partition all contingencies sufficiently to provide for efficient obligations in each case. On the back end, contracts that provide optimal obligations for all contingencies may be too costly to enforce because they require the court to distinguish among too many possible states of the world, some of which may be known only to one party or known to the parties but not the court. Over the past twenty years or so, back-end obstacles have driven a large body of the theorists' models: namely, that some states of the world are not verifiable to a court, even though they may be observable to both the parties. As we explain below, this link between enforcement and contract design is a critical one, and is worthy of more focused and careful analysis.

Since Eric Maskin's seminal contribution in 1977,[9] economists have developed models of "mechanism design" as a way of eliciting information from two mutually informed contracting parties.[10] These mechanisms can be used to resolve back-end information obstacles and, in particular, enable a court to verify private information that is observable to both parties.[11] For example, assume that demand for the

---

[9] Eric Maskin, *Nash Equilibrum and Welfare Optimality, reprinted in* 66 REV. ECON. STUD. 23 (1999) (originally distributed as an MIT Mimeo in 1977).

[10] A mechanism is a simple device that compares the announcements of the parties and rewards them on the basis of this comparison. The structure of the reward induces the parties to reveal nonverifiable facts to a court or other decision-maker. For a review, see John Moore, *Implementation, Contracts, and Renegotiation in Environments with Complete Information, in* 1 ADVANCES IN ECONOMIC THEORY: SIXTH WORLD CONGRESS, 182 (Jean-Jacques Laffont ed., 1992); ANDREU MAS-COLELL, MICHAEL D. WHINSTON & JERRY R. GREEN, MICROECONOMIC THEORY, 857-918 (1995).

[11] For concise but moderately technical discussions of these implementation mechanisms, see Alan Schwartz, *Incomplete Contracts, in* 2 NEW PALGRAVE DICTIONARY, *supra* note 4 at 277-83 Patrick W. Schmitz, *The Hold-Up Problem and Incomplete Contracts: A Survey of Recent Topics in Contract Theory*, 53 BULL. OF ECON. RES. 1 (2001).

contract good is observable by the parties but cannot be verified by a
court. The contract specifies a price of $100 if demand for the good at
the time for performance is low and $200 if the demand for the good
turns out to be high. The mechanism feature of the contract might
provide that both parties must send messages to the court indicating
the state of demand ex post. If the messages are the same, then the
court orders the parties to trade. But if their responses differ, they are
both jailed for a long period.[12] Under these assumptions, the parties
clearly are motivated to report the true state of demand to the court.
The premise of this argument, however, is at odds with the existing
litigation system. Although laws against perjury exist, they do not
operate in this manner and, in any event, perjury rules are almost
never invoked in civil trials. Many, if not most, implementation
mechanisms are similarly unrealistic.

To be sure, economists have also identified mechanisms for elicit-
ing information in more familiar institutions, such as auctions and
option contracts.[13] For example, suppose that a buyer holds an option
to buy a good at a fixed price of $10. Setting aside the possibility of
renegotiation discussed below, the buyer's decision to exercise (or not
exercise) the option reveals that the buyer's valuation exceeds (or is
less than) $10. By ensuring that the trade occurs when it is efficient,
but not otherwise, this contract can induce efficient ex ante invest-
ment as well.[14] Option contracts and other similar implementation
mechanisms, however, are parameter-specific and are not general
solutions to back-end information problems.

An important concern of contract theory is the renegotiation of
agreements. The ability of parties to renegotiate an incomplete con-
tract can have mixed effects. First, renegotiation can ensure ex post
efficiency. Consider a contract that is incomplete because it lumps

---

[12] Rather than jail, the mechanism might simply have the court prohibit the parties from
trading when their messages conflict. In any case, it is a dominant strategy under such a mecha-
nism for each party to report the ex post state truthfully. Quite obviously, the inability of the
parties to renegotiate the consequences of a mismatch is crucial to the revelation mechanism.
Thus, if courts were willing to specifically enforce the content of the messages, including the
penalty when the messages conflict, this form of contract can provide for efficient trade. The
fact that this enforcement assumption is not borne out in the real world may explain the absence
of such mechanisms from real contracts. Robert E. Scott, *Rethinking the Default Rule Project*, 6
VA. J. 84, 87 (2002).

[13] *E.g.*, Jean Tirole, *Incomplete Contracts: Where Do We Stand?*, 67 ECONOMETRICA 741,
755 (1999).

[14] *See* Georg Nöldeke & Klaus M. Schmidt, *Option Contracts and Renegotiation: A Solu-
tion to the Hold-Up Problem*, 26 RAND J. ECON. 163 (1995) (explaining that option contracts
are preferable to contract renegotiations because of their simplicity and relative efficiencies);
Aaron Edlin & Benjamin Hermalin, *Contract Renegotiation and Options in Agency Models*, 16
J.L. ECON. & ORG. 395, 397 (2000) (noting that option contracts increase efficiency when the
improved bargaining position gained from the agent's efforts dominate the hold-up effect).

together two states of the world by excusing performance in both: performance is indeed inefficient in one state, but it is efficient in the other. The reason for the incompleteness is that the distinction between the states is excessively costly to specify ex ante or verify ex post. If the efficient state materializes, the parties can renegotiate the terms of exchange so that the promisor will find it in her interest to perform. It is sometimes said that the promisee will "bribe" the promisor to perform. Conversely, the contract may require performance in two lumped states and the parties may renegotiate to a no-trade outcome when it is inefficient: here the promisee would "bribe" the promisor not to perform.

While injecting the flexibility needed to promote ex post efficiency, the prospect of renegotiation may, however, undermine ex ante efficiency. Consider the case in which the parties renegotiate a contract to achieve efficient performance. To do so, they must reach a new agreement as to the division of the surplus created by their trade. Unfortunately, this surplus includes the gains from any specific investment, and the investing party will have already incurred the investment costs. So, by sharing in the redivision of the surplus, the noninvestor will enjoy a greater portion of the gains from the investment but will not bear a greater portion of the investment's sunk costs. This prospect of being "held-up" upon renegotiation deters the initial investment and thus, undermines ex ante efficiency.

Renegotiation can also unravel mechanisms designed to elicit information ex post. Consider the option contract introduced earlier in which the seller makes a specific investment and the buyer has the right to exercise an option to purchase the good at a specified price. If the parties can renegotiate, the buyer might let his option expire once the seller has made his investment in order to enter into a new contract with the seller. If the seller's investment is specific to the contract with the buyer (and thus of little or no value to other buyers), it is a sunk cost once incurred. The buyer can thereby force a new bargain over the price, by which he can hold-up the seller and capture a greater share of the benefits from the seller's specific investments. Anticipating this outcome, the seller would not make the specific investment and may decline to grant the option in the first place. This prospect cannot be cured easily. Courts generally do not enforce consensual prohibitions on contract modification.[15] And, even if they did,

---

[15] RESTATEMENT (SECOND) OF CONTRACTS § 311 cmt. a (1979); *see also* Beatty v. Guggenheim Exploration Co., 122 N.E. 378, 381 (N.Y. 1919) ("Those who make a contract may unmake it. The clause which forbids a change may be changed like any other. . . . Whenever two men contract, no limitation self-imposed can destroy their power to contract again."); Zumwinkel v. Legget, 345 S.W.2d 89, 93-94 (Mo. 1961) (reaffirming that parties to a contract are as

these prohibitions would be difficult to enforce because it is relatively easy to conceal a modification within a "new" agreement.

Rather than seeking to prevent renegotiation altogether, contracting parties might try to regulate the renegotiation process so as to predetermine how the surplus will be shared. Some models simply posit, unrealistically, that the parties can agree in their initial contract on a specific division of the surplus in the later renegotiation.[16] Recent proposals are more realistic. For example, by allocating property rights in assets specific to the exchange, the parties effectively assign bargaining power in future negotiations to the property right holder.[17] Alternatively, the use of payment deposits or the design of quantity terms can predetermine who will be bribing whom to perform.[18]

From the perspective of lawyers and legal scholars, therefore, the most important contribution of economic contract theory is arguably this systematic incorporation of renegotiation and its feedback effects into the analysis of contracting.[19] Contract theory now examines the promisor's strategy among three options: performance, breach, or renegotiation. From this perspective, a contract sets the field for future renegotiation of the terms of exchange after uncertainty has been resolved. As noted above, a challenge for parties designing contracts is to preordain or at least constrain the course of future renegotiation so as to yield both ex ante and ex post efficiency. Ian Ayres nicely frames the development:

> [T]he new scholarship has turned a deeply accepted tenet of the Coase Theorem on its head. Naive Coaseans tend to think that the original endowment of entitlement should not affect

---

free to alter their contract as they were to originally make it). *See generally* Christine Jolls, *Contracts as Bilateral Commitments: A New Perspective on Contract Modification*, 26 J. LEGAL STUD. 203 (1997); Schwartz & Scott, *Contract Theory, supra* note 1, at 611-14.

[16] *See, e.g.*, Philippe Aghion, Mathias Dewatripont & Patrick Rey, *Renegotiation Design with Unverifiable Information*, 62 ECONOMETRICA 257 (1994) (contending that correct investment incentives are established by setting the default point in renegotiation for one party and assigning the other party bargaining power over the division of the renegotiation surplus).

[17] Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 J. POL. ECON. 691 (1986); Oliver Hart & John Moore, *Property Rights and the Nature of the Firm*, 98 J. POL. ECON. 1119 (1990).

[18] *See* Aaron S. Edlin, *Cadillac Contracts and Up-Front Payments: Efficient Investment Under Expectation Damages*, 12 J.L. ECON. & ORG. 98 (1996) [hereinafter Edlin, *Cadillac Contracts*] (highlighting that up-front payments give the promisor the ability to hold up the promisee in renegotiation and thus discourage excessive reliance); Aaron S. Edlin & Stefan Reichelstein, *Holdups, Standard Breach Remedies, and Optimal Investment*, 86 AM. ECON. REV. 478 (1996) (explaining that bargaining power in renegotiation is exogenously determined, but the contract quantity is set so as to balance the likelihood of renegotiation to a lower or higher value and thus cancel out under- and over-investment tendencies).

[19] *See* Ayres, *supra* note 1, at 892-95 (responding to Posner, *supra* note 1).

> allocative efficiency. But the modern contract analysis shows that even when renegotiation is perfect, the initial assignment of rights can importantly influence the incentives of parties to invest in unverifiable (and therefore noncontractible) amounts of reliance. . . . But prior analysis [also] did not appreciate that the parties' ex ante agreement could endogenously determine the identity of who would have to bribe whom and that manipulating the identity of the briber could have important impacts on the efficient breach.[20]

As we will emphasize in Part II, this approach for assessing the effect of the prospect of renegotiation on initial contract terms has more general application as scholars incorporate the parties' strategic behavior in other arenas, such as litigation. Economists begin by analyzing the renegotiation game and then, by backward induction, assess its effect on performance incentives and, ultimately, optimal contract design. Similarly, we might begin by predicting the game in which parties litigate disputes over their contract and work backward to the optimal design of their ex ante contract.

II. BEYOND *VERIFIABILITY*: INCORPORATING THE PROCESS OF CONTRACT ENFORCEMENT IN CONTRACT THEORY

The distinguishing feature of a contract is that its terms are legally enforceable by a judicial system that enjoys monopoly power over the coercive enforcement of obligations. Enforcement is costly, at least in part because the court cannot always observe the information needed to determine the obligation associated with the materialized state of the world. Contract theory simply posits that some factors— occurrence of contingencies and performance of obligations—are "not verifiable" by a court. The theory thus sets aside a category of contract terms by assuming, a priori, that the information cost of enforcement of those terms outweighs the incentive benefits to the parties. From this, it follows that parties will not agree to such terms since they are conditioned on states of the world that cannot be verified by a court, even though they may be observable by both parties.

Although economists have elsewhere analyzed the process of adversarial litigation, contract theory has been limited to this highly stylized and binary conception of contract enforcement in which terms are either verifiable or not. This is a sensible approach in the course of developing a theory of contract design, but it yields predictions that are clearly at odds with the real world. For example, con-

---

[20] Ayres, *supra* note 1, at 895.

tract theorists commonly label vague contract terms, such as "best efforts," "reasonable care," and "good faith," as nonverifiable and therefore not contractible.[21] Yet, these terms are commonplace in commercial contracts.

The gap between theory and practice in this regard stems from two features of contract theory: (a) its reluctance to balance back-end and front-end contracting costs and (b) the stylized conception of litigation in the theory of incomplete contracts.[22] We outline these limitations briefly in this Part and we elaborate the analysis in our forthcoming article.[23]

Parties contract to align their incentives closer to the efficient optimum. They incur front-end and back-end costs in doing so because of the uncertainty about future states of the world. From the informational perspective of incomplete contracts, front-end transaction costs are incurred when the parties identify the possible future states of the world and determine the efficient obligations associated with each state. Back-end enforcement costs include the expected costs of litigation. The objective of contracting parties is to maximize the incentive bang for their contracting-cost buck. They should incur contracting costs, therefore, as long as the resulting increase in the *sum* of (a) the transaction costs of writing the contact and (b) the expected costs of enforcement are less than the marginal incentive gain (in motivating more efficient reliance).

---

[21] As Oliver Hart explains:

> The quality of [my] book is observable, in the sense that anybody can read it . . . . However, it would have been difficult for Oxford University Press and me to have written a contract making my royalties a function of quality, since if a dispute arose it would be hard for either of us to prove that the book did or did not meet some pre-specified standard. (For this reason my royalties are made to depend on some (more or less) verifiable consequences of quality, e.g., sales.) In other words, quality is not verifiable.

OLIVER HART, FIRMS, CONTRACTS, AND FINANCIAL STRUCTURE 37-38 n.15 (1995). *See also,* BERNARD SALANIE, THE ECONOMICS OF CONTRACTS 175-91 (1997); Alan Schwartz, *Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies,* 21 J. LEGAL STUD. 271 (1992) (arguing that parties will contract out of a vague standard, such as best efforts, in which the application of the standard turns on nonverifiable information and predicting that courts will decline to complete such contracts when the performance condition is nonverifiable).

[22] As one scholar explained:

> [It might be argued that] incomplete contract theorists lack a coherent model that would unambiguously define the set of feasible contracts starting from first principles (the cost of writing contracts, etc . . .) and optimize over this set. I am for example worried about the "observable but nonverifiable" assumption, namely the postulate that the state of nature is ex post observed by several parties . . . and yet the elicitation of this information takes only crude forms . . . .

Tirole, *supra* note 13, at 752.

[23] Scott & Triantis, *supra* note 3.

The parties can reduce contracting costs (or reach further incentive gains) by trading off front-end and back-end costs. For example, instead of incurring the front-end costs of identifying obligations for many different states of the world, the parties may choose to have these obligations filled in by the court at the enforcement stage. In this way, the parties can shift front-end costs to the back end and vice versa. This trade-off is well known in the literature on the choice between rules and standards in public regulation.[24] But it has been missed by contract theorists whose concern with verifiability has led them to exclude the possibility of vague standards in contracts.[25]

In many cases, there may be savings on transaction costs from shifting costs to the back end through the use of vague standards. Although a court may not have perfect information (indeed, some information may even be nonverifiable), its information may yet be superior to (less costly than) that of the parties *at the time they contract*. In particular, the parties would need to consider all possible states of the world in their initial contract, while the court need only identify the single materialized state of the world and the efficient obligations in that state. By using broad standards such as "best efforts," the parties defer this task to the litigation stage. Moreover, they may also wish to set constraints on those prospective determinations by defining a space within which these obligations are derived. Thus, they may agree that one party will exert best efforts or act in a commercially reasonable manner. And, then, the parties may supplement those standards with examples that further guide the court.[26] For instance, a food-chain franchisee may promise to exert best efforts in protecting the value of the trademark, including the maintenance of a clean restaurant.[27] Under accepted maxims of interpretation, the com-

---

[24] Rules purport to specify the content of an obligation ex ante, while standards leave a greater portion of the substantive provisions to be determined after the regulated behavior has occurred. *See generally*, Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1993).

[25] The link between nonverifiability and standards has been expressed differently by contract theorists. A common formulation, such as that offered by Oliver Hart, *supra* note 21, assumes that in order to verify a standard, contracting parties would be required to prove in court the specific characteristics that make up the standard. Such specification costs would either be costly to incur ex ante and/or the enforcement costs would be too costly ex post. Enforcement costs include the costs of uncertainty if the court is left to determine an obligation without any pre-specification by the parties. However, this conclusion ignores the possibilities of trading-off front-end and back-end costs as well as the important fact that under our litigation system, standards are enforced indirectly by parties offering competing proxies for the standard in question. Thus, courts only need to make a relative choice as to which proxy is closer to the standard in question. For further discussion see Scott & Triantis, *supra* note 3.

[26] Charles J. Goetz & Robert E. Scott, *Principles of Relational Contracts*, 67 VA. L. REV. 1089, 1106 (1981).

[27] *Id.*; *see also, e.g.*, Taco Bell Corp. Franchise Agreement Sample Copy, section 3.1, http://library.consusgroup.com/library_sbn/146/146107.asp. (last visited Sept. 9, 2005). *See*

bination of precise terms together with a broad standard will confine the "space" for admissible evidence of compliance (or noncompliance) with the standard to those facts that are similar in kind to the listed examples. [28]

The second weakness of economic contract theory stems from the fact that its conception of verification contemplates an enforcement mechanism that relies on the finding of an objective truth.[29] In fact, courts neither investigate the truth on their own nor require certainty before enforcing a contract. Unlike criminal adjudication that compares the information of the court to an objective measure ("reasonable doubt"), judgments in civil trials compare the case presented by each of the parties. The evaluation of the evidence is relative rather than absolute: the court renders its decision on the "preponderance of evidence" or the "balance of probabilities." To be sure, the court may ultimately base its judgment on inaccurate or incorrect information, but the effect of this risk is significantly more complex than what can be represented by a simple categorization of potential contract terms into groups of "verifiable" and "nonverifiable" factors.

Similarly, although the cost of enforcement is an important factor in contract design, economic contract theory treats it as exogenous. But, in fact, litigation costs are the endogenous product of the strategies of the parties within the rules imposed by the laws of evidence and civil procedure. These litigation strategies, in turn, are interactive in the sense that the decisions of each party—whether to invest in litigation and how much to expend—are a function of the expected litigation expenditures of the other party.

A more useful analytical approach, therefore, is to take the existing litigation system as a given and then ask: how would parties design their contracts in light of the future course of litigation, including its risk of error and its cost? In this way, the impact of the adversarial system on contract design can be examined more carefully by backward induction. As an example, consider the risk of legal error in the judicial enforcement of a contract. Legal error may mean that a breaching promisor may not be held liable or that a performing promisor may be erroneously found in breach. As a result, the promisor's

---

generally, Scott & Triantis, *supra* note 3, at 37-39.

[28] Scott & Triantis, *supra* note 3, at 39-43. Under the maxim ejusdem generis, the meaning of the general language is then limited to matters similar in kind or classification to the enumerated specific terms. *See, e.g.*, Smart v. Gillette Co. Long-Term Disability Plan, 70 F.3d 173, 179 (1st Cir. 1995) (holding that when a contract lists specific benefits, any other benefit not so listed is excluded).

[29] George G. Triantis, *The Efficiency of Vague Contract Terms: A Response to the Schwartz-Scott Theory of U.C.C. Article 2*, 62 LA. L. REV. 1065 (2002).

incentive to perform may be undermined. Nevertheless, as long as the probability of liability is greater following actual breach than following performance, the promisor does have some incentive to perform. That incentive is a function of the magnitude of the risk of legal error that, in turn, is a function of the investment made by each party in litigation. Experts in the process of litigation commonly assert that the cost of proving the existence or absence of a fact is lower for the party alleging the truth than the lying party. Given a fixed amount at stake, therefore, the truthful party will invest a greater amount in litigation and this improves the odds of the court coming up with the truth.[30]

On the other hand, litigation costs can offset the gains from improving the incentives of the promisor to perform. Within the adversarial system, litigation costs and errors are the product of the interacting strategies of the parties to initiate, defend, and present evidence at trial. These strategies are regulated by an elaborate regime of evidentiary and procedural rules. Within those rules, the parties have discretion to decide how much to invest in the production of evidence in court. Their investments may well depart from the level that is efficient from the parties' ex ante perspective.[31] The parties' ex post decision is based on the amount at stake; in many cases, therefore, they are simply fighting over a division of the spoils. Nonetheless, the expected outcome does affect incentives to perform. Thus, at the time of contracting, the parties would weigh the expected cost of enforcing each contract term against the incentive gains derived from its expected enforcement (including the risk of error). This trade-off, in turn, affects the choice among rules and standards that we described above.

The parties may also structure their contract to realign litigation incentives by manipulating evidentiary and procedural rules, at least to the extent allowed by law. The bounds of their discretion to do so remain unclear, though there are many examples of contractual provisions that shape the fact-finding process in litigation, including choice of venue clauses, confession-of-judgment clauses, shortened limita-

---

[30] *See, e.g.*, Daniel L. Rubinfeld & David E.M. Sappington, *Efficient Awards and Standards of Proof in Judicial Proceedings*, 18 RAND J. ECON. 308, 310 (1987) (arguing that innocent parties signal innocence by spending more effort than guilty parties because "[i]f this were not the case, litigation would serve no purpose, since it would not enable the court to distinguish more accurately the innocent from the guilty").

[31] *See* Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1486 (1999) (discussing the possibility that parties will either underinvest or overinvest in the search for evidence, relative to the social optimum); Steven Shavell, *The Social Versus the Private Incentive To Bring Suit in a Costly Legal System*, 11 J. LEGAL STUD. 333, 334 (1982) (noting that a plaintiff does not internalize the litigation cost of the defendant).

tions periods, and the choice of trial by jury or judge. Of course, parties can opt out of the state judicial process entirely by agreeing to resolve their disputes by arbitration, which affords them even more flexibility to constrain discovery, limit the duration of trial, limit the number of witnesses, and so on.

An important element of fact finding is the assignment of burdens of proof. The law assigns these burdens as default terms, but the parties themselves may alter these burdens in their contract.[32] The general rule is that plaintiffs carry the burden of production and of proof in establishing the elements of the case, while defendants carry the burden with respect to a category of "affirmative defenses."[33] For example, the plaintiff suing to recover damages for breach of contract carries the burden of proving an enforceable promise, the failure to perform as promised and the amount of damages. The defendant has the burden of proving, say, a mistake in the formation of the contract, frustration of its purpose or that the plaintiff failed to mitigate her damages. The parties thus can reallocate burdens by choosing which party will be the plaintiff in the event of the dispute and who thereby will carry the burden of establishing whether the promisor has performed. A simple technique is the use of a deposit.[34] If a buyer makes a deposit, she must sue the seller to recover the deposit in the event of a dispute. If there is no deposit, the seller must sue to recover the price.[35] We suggest that other provisions, such as termination rights, serve a similar purpose.[36]

---

[32] An example of this burden shifting can be found in the standard indemnification agreement between DAOU Systems, Inc., and its directors and officers, which states:

> Upon making a request for indemnification, Indemnitee shall be presumed to be entitled to indemnification under this Agreement and the Company shall have the burden of proof to overcome that presumption in reaching any contrary determination . . . . Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

University of Missouri-Columbia, Contracting and Organizations Research Institute, *CORI Contracts Library*, http://cori.missouri.edu (CORI contract ID# 2382) (last visited Sept. 9, 2005). For further discussion see Scott & Triantis, *supra* note 3, at 54-55.

[33] KENNETH S. BROUN et al., MCCORMICK ON EVIDENCE § 338 (John W. Strong, ed., 5th ed. 1999).

[34] Recall that an up-front payment also determines who makes the breach-or-perform decision, which is significant in Edlin, *Cadillac Contracts, supra* note 18.

[35] Of course, if the buyer alleges expectation or reliance damages as well, she may have to sue and carry the burden of proof.

[36] *See* Scott & Triantis, *supra* note 3, at 61-66 (suggesting termination clauses alter burden allocation).

III. CONCLUSION

Until recently, contracts scholarship worked within the Holmesian paradigm that a contracting party either performs the contract or pays damages for breach. Economic contract theory has introduced renegotiation as a third possible outcome, and has traced the implications of anticipating the prospect of renegotiation on contract design. By introducing the adversarial litigation process, we can add another strategic game that the parties anticipate in structuring their contract. The analysis could be further extended in a number of other directions. For example, the possibility that disputes are settled in the course of litigation but before trial, or that the parties choose to arbitrate rather than litigate provides further opportunities for assessing the effects of back-end processes on contract design.[37] This is an ambitious research agenda, to be sure. But setting it out at this time reminds us how much work remains to be done in the theory of incomplete contracts until it yields a systematic explanation of observed contracting patterns.

---

[37] *See, e.g.*, Albert Choi & George G. Triantis, *The Effect of Settlement on Contract Design* (September 2005) (unpublished manuscript, on file with authors); Albert Choi & George G. Triantis, *Contractual Choice Between Arbitration and Litigation* (Feb. 2004) (unpublished manuscript, on file with authors).