

INCOMPLETE CONTRACTS AND PRECAUTIONS

by Richard Craswell*

By now, most contracts scholars are familiar with at least some of the conclusions of the economic analysis of contract law. At a minimum, the concept of “efficient breach” is now established in both the literature and the casebooks;¹ and the idea of the most efficient risk-bearer may also be familiar.² At present, though, the legal academy has been much less affected by the economic writings whose topic is usually referred to as “incomplete contracts.”

Part of the difficulty is that these writings are mathematically complex, even by economics standards. Yet another difficulty is that the conclusions of the mathematical models are highly sensitive to the assumptions each model employs, but the literature is still at a relatively early stage in which there is no consensus (even among economists) as to which assumptions are most plausible. As a result, the economics literature is fragmented in a way that contributes further to its inaccessibility.

For these reasons and others, this paper will not attempt to provide a complete survey of the “incomplete contracts”

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1. With even a cameo appearance in the Restatement (Second) of Contracts, ch. 16 Introductory Note.

2. For an early discussion, see Richard Posner & Andrew Rosenfield, *Impossibility and Related Doctrines in Contract Law: An Economic Analysis*, 6 J. Legal Stud. 83 (1977).

literature. Instead, my aims are more modest: (1) to describe the ways in which that literature relates to the older, perhaps more familiar law-and-economics analysis; and (2) to emphasize one aspect of that older literature which has not yet received adequate attention in the newer economics literature. Specifically, the newer literature has had little to say about the effect of legal rules on private parties' incentives to take precautions against accidents that might leave them unable to perform their contracts.

I begin, though, with a discussion of the similarities between the newer literature and the older law-and-economics analysis.³ Sections I and II point out that, despite its perhaps unfortunate label, the newer literature does not depend, in any interesting way, on the fact that contracts are "incomplete." Instead, the more important features of the newer literature are its assumption that courts are unable to evaluate key factual claims (discussed in section III below), and its assumption that the parties are almost always in a position to renegotiate their contracts after new information comes to light (discussed in section IV). The newer literature also has come to focus primarily on two incentives of interest: the incentive of one party to perform or to breach the contract, and the incentive of the other party to rely on the first party's possible performance (discussed in section V). While each of these assumptions has parallels in the older, law-and-

3. For convenience, and for want of a better label, I will use the phrase "law-and-economics analysis" to refer to the older literature that predates the newer "incomplete contracts" literature. The label is misleading, since the incomplete contracts literature could also be described (quite literally) as a form of "law and economics" analysis. My only defense is that I haven't been able to come up with a better label – and, in any event, nothing of substance should turn on these labels.

economics literature, the newer literature uses them to consider a more complex set of possible legal solutions than did the older literature. Section VI then discusses the precautions issue which, until now, has received far less attention in the newer economics literature.

I. Defining “Incomplete Contracts”

In spite of its name, the newer literature is not really *about* the fact that contracts are incomplete. To be sure, it is often remarked that, if contracts could be made complete, the optimal legal regime would be one that simply enforced all the terms of the resulting contracts. However, that possibility – that parties could ever write complete contracts and courts could simply enforce those contracts’ terms – is not really the focus of this literature.

To begin with, there are several reasons why contracts are unlikely ever to be complete. Some of these reasons are obvious ones having to do with transaction costs.⁴ The world is a complicated place; drafting contract terms takes time and effort; and if the contract is to have a real-world effect, at some point the parties will have to stop refining the language of their contract and begin their actual performance.

More fundamentally, though, the completeness of a contract also depends on how “completeness” is defined. In law, we sometimes say that a contract is “complete” if it leaves no gaps to be filled, meaning that it specifies a determinate outcome in every possible future state. By this definition, how-

4. For a recent survey of these reasons (and others), see Juliet P. Kos-tritsky, *Taxonomy for Justifying Legal Intervention in an Imperfect World: What to Do When Parties Have Not Achieved Bargains or Have Drafted Incomplete Contracts*, 2004 Wis. L. Rev. 323.

ever, the completeness of a contract will depend on the rules of interpretation that are applied.⁵ For example, a contract that says the seller will deliver 100 widgets on July 1 could be considered “complete” (in the sense of not leaving any gaps) if it is interpreted to mean that the seller must deliver those widgets on July 1 *regardless of anything else that might happen*. But this contract could also be described as “incomplete” if it is instead interpreted as not saying anything one way or the other about what happens if (for example) the closure of the Suez Canal prevents the seller from delivering the widgets on time. Under that interpretation, the contract leaves a “gap” by failing to specify a result in those future states of the world in which the Suez Canal is closed. Thus, if incompleteness is defined by whether the contract leaves gaps, we cannot even classify a contract as “complete” or as “incomplete” without first choosing between the various competing interpretations.⁶

By contrast, the recent economics literature does not define the completeness of a contract by whether the contract leaves any gaps. Instead, the economics literature treats a

5. As a number of authors have observed. E.g., Alan Schwartz, *Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies*, 21 J. Legal Stud. 271, 272–73 (1992).

6. In this respect, Kostritsky (*supra* note 4) unduly limits her focus when she distinguishes (1) judicial decisions that fill the gaps of an incomplete contract, which she refers to as judicial “interventions” that require justification; from (2) judicial decisions that merely “give the express terms their ordinary meaning” (*id.*, 2004 Wis. L. Rev. at 324 n.3), which she treats as unproblematic. Giving terms their “ordinary meaning” is, of course, *one* way to resolve the question as to how those terms should be interpreted – but that particular solution requires justification just as much as any other.

contract as “complete” if but only if it provides for a different result *in every possible future state in which a different result would be optimal*. More precisely, if there is any possible state of the world in which a different result would be optimal in an *ideal* or *first-best* sense, without regard to whether a court would ever be able to recognize that state of the world or to enforce the optimal result, a “complete” contract would nevertheless have to specify the optimal result in each possible state.⁷ Otherwise, if the contract fails to specify the optimal result in any possible state of the world, that contract would be “incomplete” under this definition.

For example, consider again a contract requiring a seller to deliver widgets by July 1, and suppose now that this contract allows no excuses. Under the economic definition, that would be a “complete” contract if (but only if) it would always be optimal to deliver the widgets by July 1, no matter what happened elsewhere in the world. For example, a contract that failed to specify a different result depending on who won the world series in any particular year would not by that fact alone be “incomplete,” as long as the outcome of the world series had no effect on whether it was still optimal to deliver the widget. But if there are some possible states of the world in which it would not be optimal to deliver the widgets – say, those states of the world in which the Suez Canal is closed – a contract that provided no excuses would then be “incomplete” under the economic definition.

In short, under the economic definition of a complete contract, describing a contract as “complete” is not simply a factual description of the contract. Instead, that label also

7. For a discussion of this aspect of the definition, see Schwartz, *supra* note 5, 21 J. Legal Stud. at 272–73. I shall return to this point in section II.

embodies a normative conclusion, comparing the actual contract to other contracts that the parties might in principle have written. This fact alone provides one reason why the newer economic literature is not concerned with whether the terms of complete contracts should “simply” be enforced as written. Under the economic definition of completeness, deciding whether a contract is in fact complete is not a simple matter at all.

II. Adjusting for Imperfect Courts

In addition, though, there is another important reason why the newer economic literature is not concerned with whether the terms of *complete* contracts should be enforced. This second reason has to do with limits on judicial competence.

Recall that a “complete” contract, in the economic sense of that term, specifies a different result in every possible state of the world in which a different result would be optimal. Moreover, “optimal” (for these purposes) is usually defined in an ideal or first-best sense, without regard to any difficulty courts might face in recognizing particular states of the world, or in enforcing the conduct specified by the contract.⁸ This means that, as long as the terms of a complete contract can be enforced flawlessly, enforcement of those terms will indeed give us ideal results. For example, if it would be efficient to grant the seller an excuse whenever its costs increased by more than 127%, a complete contract would (by definition) provide for just such an excuse. And if courts were able to measure the seller’s costs with no risk of error, achieving the ideal result would simply be a matter

8. See the text *supra* at note 7.

of enforcing this express term, and granting an excuse whenever the seller's costs in fact went up by more than 127%.

In practice, though, there are many things that courts may not be very good at measuring. In some cases, the most efficient outcomes – that is, the outcomes that would be specified in a truly complete contract – may depend on factors that are completely unobservable (for instance, the efficiency of completing a consumer transaction may depend on whether the consumer's *tastes* have changed in some unobservable way). In other cases, the efficient outcome may depend on factors that are observable to the contracting parties, but that cannot be proved to the satisfaction of a reviewing court (for example, the seller's costs may include opportunity costs that a court would find hard to evaluate). In the newer literature on incomplete contracts, these two difficulties are often referred to (respectively) as involving information that is either *unobservable* or *nonverifiable*.⁹

As a consequence, it may not always be a good idea for courts even to *try* to enforce the terms of contracts. That is, even if the parties' contract is complete (in the ideal or first-best sense defined above), it hardly follows that the best results will be obtained by turning that ideally complete contract over to a less-than-ideal court system. To be sure, if the parties are aware that the legal system is not perfect, they are not likely to write such a contract in the first place, which is yet another reason why truly "complete" contracts are rarely if ever observed.¹⁰ Still, my point here is that, even if the par-

9. For a further discussion of these terms see, e.g., Schwartz, *supra* note 4, 21 J. Legal Stud. at 279–280.

10. A point emphasized by Schwartz, *supra* note 5. For a more extensive discussion of this point, see Alan Schwartz & Robert E. Scott, *Con-*

ties *did* (for some reason) write a complete contract, it still would not follow that an optimal legal regime would necessarily instruct its courts to simply enforce the terms of that contract. As long as the courts themselves were not ideal, the legal system might well do better, at least in a second-best sense, by giving courts some other instruction that did not place such severe demands on their limited competence.¹¹

In short, the question of interest (at least to economists) is not *whether* any given contract is complete. Instead, the question is how the legal system should best respond to the potential incompleteness of contracts – for example, what interpretive rules should courts follow, and what default rules should they adopt, either in general or in particular kinds of cases? Once courts are seen to be imperfect, it need not be the case that complete contracts should always be enforced; nor need it be the case that incomplete contracts should always be supplemented. Instead, once the question is framed in this way, the economic literature naturally turns to an analysis of the *consequences* of different legal regimes. In particular – and this is the focus of almost all of the

tract Theory and the Limits of Contract Law, 113 Yale L.J. 541 (2003).

11. *Id.* See also Kostritsky, *supra* note 4, 2004 Wis. L. Rev. at 344–48. Some readers may wonder whether it would make more sense to redefine a “complete” contract as one that drew all the distinctions that were optimal *given the imperfections of the court system*. By that definition, though, the only way to decide whether a contract was “complete” would be as a *conclusion*, after a full-blown policy analysis to determine which distinctions were in fact optimal (given the imperfections of the court system). In other words, it would then be a mere tautology to say that “a complete contract should be enforced according to its terms,” because a complete contract would then be *defined* as “the contract that contains whatever terms it would be optimal for imperfect courts to enforce.”

economics literature – the interesting questions concern the effect of different legal rules on the parties' *incentives* to make various decisions efficiently.

III. Imperfect Courts and Efficient Incentives

If courts could perfectly evaluate the efficiency of any private action, it would be trivially easy to design a legal regime that generated optimal incentives. For instance, we could create incentives to choose an efficient level of reliance by adopting a rule that favored any party who relied efficiently, and/or a rule that penalized any party who relied inefficiently.¹² Similarly, we could discourage inefficient breach (and encourage efficient breaches) by penalizing breachers if, but only if, a court decided that their breach was inefficient. In this respect, a hypothetical perfect court system – that is, a system capable of costlessly and perfectly determining the efficient action in every possible state of the world – is the ex post equivalent of a perfectly complete contract, in which the parties themselves are capable of costlessly and perfectly specifying the efficient action in every possible state of the world. Either of these systems, if they actually existed, would allow us to achieve the first-best efficient results.

As noted earlier, though, it is not very realistic to expect our court system to be perfect. In particular, the recent literature on incomplete contracts generally assumes that the efficiency of key decisions *cannot* be evaluated perfectly by courts. After all, evaluations of efficiency generally depend on comparing various costs and benefits. If some of those

12. For an early discussion of such a rule, see Charles J. Goetz & Robert E. Scott, *Enforcing Promises: An Examination of the Basis of Contract*, 89 Yale L.J. 1261, 1280 (1980).

costs or benefits are either unobservable or nonverifiable,¹³ that bodes ill for any legal regime that expects the courts to evaluate the efficiency of private actions.

As a consequence, the legal regimes that are analyzed in the incomplete contracts literature are usually those that do not directly reward or penalize a party, based on the efficiency or inefficiency of her decisions. Instead, that literature assumes these first-best regimes to be infeasible, so it seeks instead to identify regimes that can create good incentives without requiring courts to evaluate the efficiency of any actual decision of the parties. In this respect, the literature on incomplete contracts might just as accurately be referred to as the literature on “incomplete courts.”

It is worth mentioning, though, that similar assumptions have often been present (though not always explicitly) even in more traditional law-and-economics analyses. Consider, for example, the early analyses of the problem of efficient breach.¹⁴ In many circumstances, the expected value of a relationship can be maximized if one party does *not* carry out her promise if something happens to make performance of that promise inefficient. Creating just the right incentives to breach is not easy, though, for the value of the parties’ relationship is also maximized if the party *does* carry out her promise whenever it is still efficient to perform. In principle, one way to give the performing party both of these incent-

13. See the text *supra* at note 9.

14. The earliest analyses are Robert L. Birmingham, *Breach of Contract, Damage Measures, and Economic Efficiency*, 24 Rutgers L. Rev. 273 (1970); John H. Barton, *The Economic Basis of Damages for Breach of Contract*, 1 J. Legal Stud. 277 (1972). The first mathematical analysis is Steven Shavell, *Damage Measures for Breach of Contract*, 11 Bell J. Econ. 466 (1980).

ives – that is, to perform when performance is efficient, and to breach when breach is efficient – would be to adopt the equivalent of a negligence rule, which holds the breaching party liable if (but only if) a court found that her breach was inefficient. Indeed, if courts could perfectly evaluate the efficiency of a party’s breach (perhaps using something like the Learned Hand formula from negligence cases¹⁵), such a rule would create exactly the right performance incentives.

Significantly, though, the earliest analyses of efficient breach did not even consider any rule that required courts to evaluate the efficiency of the breach. Instead, the early analyses pointed out that optimal breach incentives could also be created by using a particular damage measure – specifically, a measure that captured all of the harms inflicted by the breach – and by applying that measure to all cases, regardless of whether the breach was efficient or not. In effect, the earliest analysts were recommending an approach that corresponded more to strict liability than to negligence – and an approach that would be efficient for the same reasons that strict liability is sometimes efficient. That is, if courts could calculate the appropriate damage measure, this would force breachers to internalize all of the costs of their breaches, thus deterring them from any breaches whose costs outweigh their benefits. At the same time, this regime would still leave breachers with an affirmative incentive to breach in any case where the benefits of breach outweigh its costs (i.e., in any case where breach would be efficient). Implicitly, then, the early analyses assumed that courts could *not* evaluate whether the breach itself was efficient, but that

15. *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947) (L. Hand, J.).

courts *could* measure all of the damages that the breach inflicted.¹⁶

In short, assumptions about the limits of the court system have been a hallmark of all economic analyses, not just the most recent literature on “incomplete contracts.” To be sure, the assumption that courts cannot evaluate the efficiency of a particular action *at all* will sometimes be too extreme. In many cases, courts may be able to evaluate particular actions *imperfectly* (which is to say, with some risk of error), and sometimes even an imperfect evaluation will be enough to alter the parties’ incentives.¹⁷ As this possibility is being discussed elsewhere, I will not dwell on it here.¹⁸

IV. Adjusting for Ex Post Renegotiation

Instead, I turn now to another important aspect of the “incomplete contracts” literature. That literature usually takes it as given that the parties are capable of renegotiating their

16. For a subsequent discussion emphasizing this aspect of the “efficient breach” analysis, see Robert Cooter, *Prices and Sanctions*, 84 Colum. L. Rev. 1523, ___–__ (1984).

The failure of earlier law-and-economics scholars to consider the possibility of a “negligence” rule for efficient breaches is particularly striking in light of the fact that, in the contemporaneous economic analysis of tort law, the choice between strict liability and negligence was one of the most frequently analyzed issues. See, e.g., John Prather Brown, *Toward an Economic Theory of Liability*, 2 J. Legal Stud. 323 (1973).

17. For an early model of this possibility, see Gillian K. Hadfield, *Judicial Competence and the Interpretation of Incomplete Contracts*, 23 J. Legal Stud. 159 (1994). See also Richard Craswell, *Offer, Acceptance, and Efficient Reliance*, 48 Stan. L. Rev. 481, 501–03 (1996); and George G. Triantis, *The Efficiency of Vague Contract Terms*, University of Virginia School of Law Working Paper No. 02–7 (May 2002).

18. George Triantis, [contribution to this panel].

contract at any time. The possibility of renegotiation makes it easier for a legal regime to give parties the right incentives to choose efficiently between performance and breach. At the same time, though, the possibility of renegotiation makes it significantly harder for a legal regime to give parties the right incentives to make various other choices efficiently.

To explain this effect, it may help to consider in more detail the contractual setting that is addressed by the incomplete contracts literature. The models typically employed in that literature assume that, at the time the parties sign their contract, they are uncertain about some aspect of the future. The seller may be unsure what her production costs will turn out to be, for example, or the buyer may be uncertain about how valuable the product will be to him; but in either case, the key is that these uncertainties do not get resolved until after the parties have signed their contract. In effect, the assumption is that the parties must sign a contract first, and only then do they discover the true state of the world that reveals the seller's costs and/or the buyer's valuation.¹⁹

The "efficient breach" argument discussed earlier implies that the most efficient outcome is for the seller to produce and deliver the product if, but only if, the uncertainty is resolved so that the seller's cost of production and delivery is less than the value of the product to the buyer. As noted earlier, one way to give the seller the right incentive is to make her internalize (if she fails to deliver) the buyer's entire losses from non-delivery.²⁰ But if the parties can renegotiate

19. In most models, the seller and buyer have no ability to influence the probability of each possible state of the world. I will return to this point *infra* in section VI, when I discuss the importance of *precautions*.

20. For convenience in the use of pronouns, all of my examples will as-

otiate, the damage rule becomes much less important (as far as this particular incentive is concerned), because – as the law-and-economics literature noted early on – renegotiation should create efficient incentives to perform or breach under virtually *any* damage rule.²¹ For example, if the threat of a very high damage remedy would otherwise deter the seller from breaching, even when it would no longer be efficient for the seller to perform, the seller should be able to avoid delivery by renegotiating and buying her way out of the contract, paying the buyer an amount that exceeds her own cost of performance but is less than the value the buyer would get from delivery. Indeed, many of the early criticisms of the “efficient breach” analysis rested on just this point: as long as renegotiation is possible, breach (or performance) should be efficient under *any* damage remedy.²²

However, while the efficient breach problem becomes easy to solve as long as the parties can renegotiate, there are other relevant incentives that are not so easy to optimize. In particular, the incentive that has received the most attention in the incomplete contracts literature is the incentive each party has to *rely* on a proposed transaction.

sume a female seller and a male buyer.

21. See, e.g., Charles J. Goetz & Robert E. Scott, *Liquidated Damages, Penalties and the Just Compensation Principle: Some Notes on an Enforcement Model and a Theory of Efficient Breach*, 77 Colum. L. Rev. 554 (1977). For a formal mathematical analysis, see William P. Rogerson, *Efficient Reliance and Damage Measures for Breach of Contract*, 15 Rand J. Econ. 39 (1984).

22. For a survey of the early law-and-economics literature on this point, see Richard Craswell, *Contract Remedies, Renegotiation, and the Theory of Efficient Breach*, 61 S. Cal. L. Rev. 630, 633–40 (1988).

V. Creating Incentives for Efficient Reliance

The stylized model that I sketched earlier involved two key variables: the amount it would cost the seller to perform, and the value that performance would confer on the buyer. Suppose now that only the seller's cost is uncertain – but suppose also that the buyer can increase (or decrease) the value that performance will have, by spending more (or less) in *reliance* on the contract.

For example, suppose that the contract calls for the seller to deliver a piece of complicated machinery to the buyer, and suppose that the buyer must decide whether to spend money customizing his existing equipment to work with the new machine. In particular, suppose that the value of the new machine will be greater if the buyer does spend the money to customize his workplace – but suppose that, if the seller fails to deliver the promised machine, most of these customization expenditures will be wasted. And suppose, finally, that the buyer must decide whether to spend this money before he knows whether the seller will actually deliver the machine, because (as noted earlier) there is some initial uncertainty about whether the seller's costs will be low enough to make it in her interest to perform.

This, in a nutshell, is the efficient reliance problem. If the buyer's customization expenses could all be recovered if the seller failed to deliver, or if they could then be converted to some other equally valuable use, the problem would become trivial, for in that case the expenditure would be riskless to the buyer. But as long as there is some chance that the expenditure will be lost if the seller fails to deliver, or if there is some chance that not all of its value will be recovered, the

expenditure then becomes risky.

In that case, the *efficient* level of reliance expenditure will depend on the various factors that affect the risk. Roughly speaking, the efficient level of reliance will be higher if the downside is relatively low (that is, as long as some or most of the expense can be recovered if the seller fails to deliver). A higher level of reliance will also be efficient when the upside is particularly high – for example, if spending the money to customize the workplace would *significantly* enhance the value of the new machine. Finally, the efficient level of reliance will also be higher if there is a high probability that the seller will, in fact, perform (for in that case, there is less risk that the reliance expenditure will be wasted). As we saw in the preceding section, if renegotiation is possible then the seller should decide to perform whenever her cost of performing is less than the value the buyer would get from the machine. But if (as I have been assuming here) there is some uncertainty over just how much it will cost the seller to perform – and if the buyer must make his decision before that uncertainty has been resolved – then the efficient level of reliance must be defined relative to the *ex ante likelihood* that the seller will perform.

Of course, if the courts could themselves identify the efficient level of reliance, it would be easy to design a legal regime that would give the buyer the right incentives.²³ But if we continue to assume that courts lack the information that is needed to identify efficient reliance – for example, if the value the buyer would get from performance is either unobservable or nonverifiable – it then becomes rather more difficult to design a legal regime that gives buyers their own

23. See the discussion *supra* in section III.

incentive to rely efficiently. Indeed, this very question (how can buyers be given an incentive to rely efficiently?) has been the concern of much of the most recent work on incomplete contracts.

For example, the earlier literature had noted that, if the parties could somehow be blocked from renegotiating, any of several damage remedies might optimize the buyer's reliance incentives. In particular, as long as the measure of damages did not itself depend on the buyer's level of reliance, the buyer's reliance incentives might then be efficient.²⁴ Under such a regime, the buyer would bear all of the extra costs of any additional reliance expenditures, because any damages the buyer might collect would not increase (by hypothesis) to cover those extra expenditures. At the same time, the buyer would also reap all of the extra benefits from any additional expenditures (in the event that the seller decided to perform). And since the buyer would thus capture both the marginal costs and the marginal benefits of additional reliance expenditures, this meant that the buyer's reliance incentives would be optimal.

If renegotiation is possible, however, the buyer's reliance expenditures will almost always have some impact on the amount the buyer recovers if the seller fails to perform. Re-

24. Shavell, *supra* note 14, proved this result for two particular damage rules that did not depend on the buyer's level of reliance: a rule of no liability at all (damages always equal to zero), and a rule allowing the buyer to recover only his purchase price ("restitution" damages, in Shavell's terminology). For a less technical and more general analysis, which considers *all* damage measures that do not depend on the buyer's reliance – including, for example, stipulated damage clauses set at a constant amount – see Robert Cooter, *Unity in Tort, Contract, and Property: The Model of Precaution*, 73 *Calif. L. Rev.* 1 (1985).

call, for example, that if the seller's costs turn out to be higher than expected, the seller may have to buy her way out of the contract by offering the buyer enough money to buy her release.²⁵ However, a buyer who has relied heavily will lose a more valuable performance (more valuable precisely because of his additional reliance expenditures) if he agrees to release the seller from the contract. As a consequence, such a buyer will normally be able to demand a higher sum as the price of his release. This, in turn, means that such a buyer will no longer be bearing the full cost of his reliance expenditures, as some of that cost will (in some cases) be recoverable in the form of a higher payment from a defaulting seller. In short, when renegotiation is possible, it is harder to design any simple regime to optimize buyers' reliance incentives.²⁶

Building on this analysis, some of the incomplete contracts literature has tried to design solutions that make it harder (or impossible) for the parties to renegotiate.²⁷ Indeed, if the parties could make an enforceable agreement in which they committed not to renegotiate, this might actually enhance the value of their relationship, if the gains from improving their reliance incentives exceeded whatever they gave up in flexibility by agreeing not to renegotiate.²⁸ Under

25. See the discussion *supra* in section IV.

26. For an early demonstration of this difficulty, see Rogerson, *supra* note 21.

27. See, e.g., Matthias Dewatripont, *Commitment through Renegotiation-Proof Contracts with Third Parties*, 55 *Rev. Econ. Stud.* 377 (1988). On the role of renegotiation generally in the incomplete contracts literature, see Oliver D. Hart & John D. Moore, *Incomplete Contracts and Renegotiation*, 56 *Econometrica* 755 (1988).

28. *Id.* For a similar model, in which the parties to a contract might benefit by making it more costly for them to renegotiate later, see Alan

current law, however, it is difficult if not impossible to make an agreement not to negotiate that cannot itself be renegotiated.²⁹

Other contributions to the incomplete contracts literature have pointed out that, if the buyer can capture all of the surplus in any renegotiation, the buyer's incentives may become optimal again, because the ability to capture all of the surplus means that the buyer will realize all the gains (as well as all the costs) of his reliance.³⁰ As a result, some analysts have tried to define legal regimes in which the buyer (or, more generally, the party choosing to rely) does, in fact, have all of the bargaining power, by setting up special institutions in which the buyer can make a "take it or leave it" offer.³¹ In still other situations, the buyer's reliance incentives might be optimized by structuring the contract so that the buyer (not the seller) is the party most likely to breach, in which case the damages could be based on the seller's expected profits rather than on the buyer's reliance expenses.³²

Schwartz & Joel Watson, *Economic and Legal Aspects of Costly Recontracting*, [get current cite].

29. For a useful discussion of this issue, see Christine Jolls, *Contracts as Bilateral Commitments: A New Perspective on Contract Modification*, 26 J. Legal Stud. 203 (1997).

30. Rogerson, *supra* note 21; Georg Nöldeke & Klaus Schmidt, *Option Contracts and Renegotiation: A Solution to the Hold-Up Problem*, 26 Rand J. Econ. 163 (1995).

31. E.g., Philippe Aghion, Mathias Dewatripont & Patrick Rey, *Renegotiation Design with Unverifiable Information*, 62 *Econometrica* 257 (1997); Hart & Moore, *supra* note 27; Eric Maskin & Jean Tirole, *Unforeseen Contingencies and Incomplete Contracts*, 66 *Rev. Econ. Stud.* 83 (1999). Of course, these renegotiation mechanisms will not have the desired effect unless they themselves cannot be avoided by subsequent renegotiation.

32. E.g., Aaron S. Edlin, *Cadillac Contracts and Up-Front Payments*:

As these branches of the incomplete contracts literature are already well developed, I will not pursue them here. Instead, the next section highlights another relevant incentive that has received much less attention in the modern economics literature. Putting it in terms of the stylized model sketched earlier, what if the seller has some control over the probability that her costs will (or will not) be low enough to make it in her interest to perform the contract? To put it in less formal language, what if the seller's ability to perform may be affected by the *precautions* that she takes?

VI. Creating Incentives for Efficient Precautions

In some cases, a party's ability to perform may be affected by the risk of events over which she has no control. In many cases, though, the performing party has a good deal of control over those risks, in that she can reduce their likelihood by taking appropriate precautions. The builder in *Jacob & Youngs v. Kent*,³³ for example, might have reduced the likelihood of using the wrong brand of pipe if it had spent more time and effort monitoring its purchase of supplies. Similarly, a product manufacturer can usually reduce the frequency

Efficient Investment under Expectation Damages, 12 J. Law, Econ., & Org. 98 (1996). Perhaps significantly, this latter approach suggests a possible justification for supra-compensatory stipulated damage clauses – a remedy that was difficult if not impossible to justify in the earlier law-and-economics analyses. Compare Aaron S. Edlin & Alan Schwartz, *Optimal Penalties in Contracts*, 78 Chicago-Kent L. Rev. 33 (2003) (defending, at least as a matter of theory, supracompensatory damage clauses), with Samuel A. Rea, Jr., *Efficiency Implications of Penalties and Liquidated Damages*, 13 J. Legal Stud. 147 (1984) (rejecting any efficiency justification for damage clauses that are known in advance to be supracompensatory).

33. *Jacob & Youngs, Inc. v. Kent*, 230 N.Y. 239, 129 N.E. 889 (1921).

of defective products by spending greater amounts on quality control. In this section, I will use “precaution” to refer to any costly step that reduces the probability of an event that would make it harder to perform under a contract.³⁴

The very earliest law-and-economic analyses had little to say about precautions, for they focused instead on a party’s incentives to make a deliberate choice between performing and breaching.³⁵ To be sure, those analyses did posit some probability of an event that would make performance more difficult, such as an increase in the seller’s costs (if the seller was the party whose incentives were being analyzed) or a reduction in the buyer’s demand (when analyzing the buyer’s incentives). In these early models, however, the event that made performance more difficult was treated as being completely beyond the control of either party. Instead, the focus of these models was on the choice either party might make *after* the bad event occurred: Would the party have an incentive to perform the contract anyway, or would she have an incentive to breach?

It did not take long, though, for other analysts to explore the incentives for efficient precautions. For example, in a relatively early article Lewis Kornhauser modeled the incentives of a manufacturer to spend money on quality control, in order to reduce the probability of a defective product that would violate the manufacturer’s warranty.³⁶ Kornhauser concluded that, under the assumptions of his model, the manufacturer would have an incentive to choose an efficient

34. For a similar usage, see Cooter, *supra* note 24.

35. See, e.g., the articles cited *supra* in note 14.

36. Lewis A. Kornhauser, *Reliance, Reputation, and Breach of Contract*, 26 J. Law & Econ. 691 (1983).

level of precautions if she were held liable (in the event of a defect) for all of the losses actually caused by the defect. This conclusion paralleled a familiar result in the economics of tort law, where strict liability can give potential tortfeasors an incentive to take efficient precautions against accidents, as long as the tortfeasors are held liable for the full costs each accident imposes.³⁷ But it also paralleled (in a way) the results of the early analyses of efficient breach, where strict liability for all resulting losses can give potential breachers an incentive to breach when but only when breach would be more efficient.³⁸ In spite of these similarities, though, the analysis of precautions in contract law continued to receive less attention than did the analysis of deliberate decisions to perform or breach.³⁹

Perhaps for this reason, the early literature on incomplete contracts adopted the same focus on deliberate choices between performance and breach. As noted earlier, the typical “incomplete contracts” model posits some uncertainty about the seller’s costs (or about the buyer’s valuation), so that – depending on how that uncertainty is resolved – the seller (or buyer) may later be faced with a deliberate choice between performing the contract or breaking it. In mathematical terms, the seller is assumed to know that there is a distribution of *possible* costs, each with an associated probability; and that at some point the seller’s actual costs will be

37. E.g., Brown, *supra* note 16.

38. See the text *supra* at note 14.

39. Though there are plenty of exceptions to this generalization, which are far too numerous to cite. Representative examples include Posner & Rosenfield, *supra* note 2; Cooter, *supra* note 16; and Craswell, *supra* note 22.

drawn from that distribution, just as if “nature” were spinning a roulette wheel or drawing a ball from an urn. However, the literature also typically assumes that the seller can do nothing to influence that draw – say, by spending more money on precautions that will reduce the odds of an outcome that will make the seller’s costs be high. Instead, in these models the seller passively waits to find out what her costs turn out to be, and only then does she make her key decision: the decision between performing the contract, or breaching and pay damages.

To be sure, the models of incomplete contracts usually do model at least one other decision, in which the other party to the contract chooses a level of “investment.”⁴⁰ If the seller, for example, is the party whose costs may increase, the buyer may be modeled as choosing how much to invest in reliance on the contract, by spending money to increase the value that performance will have to him.⁴¹ This sort of reliance investment has at least some similarities with what I am calling an investment in precautions, for one way to take precautions against injury from breach is to reduce the extent of one’s reliance on the contract.⁴²

40. Thus, Alan Schwartz and Robert Scott recently described the “canonical” contracting problem as one of “ensuring both efficient ex post trade and efficient ex ante investment.” By “ex post trade,” they refer to the efficient performance-or-breach decision, and by “ex ante investment,” they refer to efficient reliance. Schwartz & Scott, *supra* note 10, 113 Yale L.J. at 545 and n.4.

41. See the discussion *supra* in section V.

42. Cooter, *supra* note 24, discusses this similarity.

A. Precautions and ex post renegotiation

There are, however, some important differences between reliance investments and other kinds of precautions. For one thing, some precautions involve contracts where ex post renegotiation is not likely to occur, because the precaution concerns an all-or-nothing risk. As noted earlier, if ex post renegotiation can be eliminated, it is then usually easier to optimize the incentives of the party who is choosing the investment.

That is, the real difficulty in optimizing precaution incentives comes (not surprisingly) when ex post renegotiation is possible. If renegotiation is impossible, a damage rule of full liability for the resulting losses is efficient because it requires the seller to internalize all of the benefits of precaution investments, as well as bearing all the costs of those investments.⁴³ If renegotiation is possible, however – say, if a fire in the seller’s factory makes widgets more expensive to produce, but not so expensive as to eliminate the possibility of trade entirely – the seller may then be able to renegotiate the price of performance (or the price of her release from the contract), in ways that leave the seller bearing less than the full costs of the accident or reaping less than the full benefits of her precautions.⁴⁴ In that case, a rule of full liability may no longer optimize the seller’s precaution incentives.⁴⁵

43. Kornhauser, *supra* note 36. In Kornhauser’s model, ex post renegotiation was assumed to be impossible.

44. The analogous point for reliance investments was discussed in the text *supra* at note 26.

45. For an early recognition of this point in the law-and-economics literature, see Varouj A. Aivazian, Michael Trebilcock, & Michael Penny,

Significantly, though, some precautions involve risks that effectively eliminate the possibility of ex post renegotiation. Suppose, for example, that widgets carry some risk of spontaneously exploding. The seller may of course be able to reduce that risk, by taking more care in her production process – but whether the risk materializes or not, in neither case is there likely to be any ex post renegotiation. (If the widget does not explode, there will be no reason for the parties to renegotiate their original contract; and if the widget does explode, there will be nothing left to negotiate over.) In this case, then, Kornhauser’s conclusion remains valid: the seller’s incentive to take precautions will be optimized by holding her liable for the full value of the product in the event that it explodes. Indeed, in this situation, damage measures that are too large might be counterproductive, by inducing the seller to take too high a level of precautions.⁴⁶

B. Precautions as cooperative investments

A second difference between precaution investments and reliance investments – which is relevant if ex post renegotiation is possible – stems from the fact that most precaution investments in precautions are chosen by one party, but their effect is to benefit the other party to the contract. In the terms used by the incomplete contracts literature, an investment in reliance is a *self*-investment (i.e., an investment whose benefits accrue to the investor himself) while an

The Law of Contract Modification: The Uncertain Quest for a Bench Mark of Enforceability, 22 Osgoode Hall L.J. 173, ___–__ (1984).

46. Compare the suggestion, discussed supra in note 32, that supracompensatory damage measures might be used to create efficient incentives for a buyer’s reliance investment.

investment in precautions is a *cooperative* investment (an investment whose benefits accrue to the other party).⁴⁷ For example, if a seller decides to spend more money on quality control, the *buyer* is the party who potentially benefits from this expenditure, because the buyer's chance of receiving a non-defective (or non-exploding) product will thereby increase. By contrast, if the buyer invests more in reliance on a contract, the buyer himself will be the one who reaps the potential benefit from that expenditure.

The reason this matters is that, when *ex post* renegotiation is possible, it is much harder to create incentives for one party to choose an efficient level of a cooperative investment. With a self-investment, the investing party already reaps most of the benefits of the investment (as well as bearing all of its costs), so that party's incentives can be optimized if she can somehow be allowed to capture the rest of her investment's benefits.⁴⁸ With a cooperative investment, though, the investing party typically captures none of the investment's benefits (while still bearing all of the investment's costs). This makes it more difficult to optimize the investing party's incentives.⁴⁹

VII. Conclusion

In the early days of a scholarly literature, it is perfectly natural for scholars to focus on a particular subset of issues. No

47. Yeon-Koo Che & Donald Hausch, *Cooperative Investments and the Value of Contracting: Coase vs. Williamson*, 89 *Am. Econ. Rev.* 125 (1999).

48. See the text *supra* at note 31.

49. As demonstrated by Che & Hausch, *supra* note 47. For a slightly less technical discussion, see Edlin & Schwartz, *supra* note 32, 78 *Chi. Kent L. Rev.* at ___-__.

paper can analyze every issue at once, and a careful analysis of some issues may pave the way, in succeeding papers, to an equally careful analysis of others.

If one is drawing real-world implications from a body of scholarship, though, it is important to keep track of which issues have been analyzed and – perhaps even more important – which issues have not. The literature on incomplete contracts provides a useful reminder of this point, for (as I have argued here) that literature is far more advanced on some issues than it is on others. In particular, that literature is still at a very early stage in its analysis of parties' incentives to take efficient precautions.

Indeed, once one approaches the issue from this standpoint, one can think of any number of other issues that have yet to be analyzed. For example, the incomplete contracts literature generally takes the parties' information about the relative risks and probabilities as given – yet one effect of contract law and contracts is to alter the parties' incentives to gather information in the first place.⁵⁰ The incomplete contracts literature also typically treats the identity of the contracting parties as given – but contract law can also affect the parties' incentives to select or search for the parties with whom they contract.⁵¹

50. For discussions of this incentive see, e.g., Anthony T. Kronman, *Mistake, Disclosure, Information, and the Law of Contracts*, 7 *J. Legal Stud.* 1 (1978); Richard Craswell, *Precontractual Investigation as an Optimal Precaution Problem*, 17 *J. Legal Stud.* 401 (1988).

51. For some (highly technical) analyses of this issue, see Peter A. Diamond & Eric Maskin, *An Equilibrium Analysis of Search and Breach of Contract, I: Steady States*, 10 *Bell J. Econ.* 282 (1979); P.A. Diamond & Eric Maskin, *An Equilibrium Analysis of Search and Breach of Contract, II: A Non-Steady State Example*, 25 *J. Econ. Theory* 165 (1981). For a more re-

In short, contracts and contract law affect many choices along many different margins, and it is important not to lose sight of those choices that have not yet been thoroughly analyzed. To be sure, this may make the resulting analysis even more complex than it already is. But the world is, in fact, a complex place, and – to some of us, at any rate – that’s part of what makes it so interesting.

cent example drawing on the incomplete contracts literature (and considering yet another form of “cooperative” investment, see Harold L. Cole, George J. Mailath & Andrew Postlewaite, *Efficient Non-contractible Investments*, Federal Reserve Bank of Minneapolis Research Department Staff Report #253 (August 1998).