BOUNDED RATIONALITY, THE DOCTRINE OF IMPRACTICABILITY, AND THE GOVERNANCE OF RELATIONAL CONTRACTS

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This article uses a behavioral economics approach to analyze the effects of the doctrine of impracticability on "relational" contracts -- long-term contractual agreements that are typically adapted to changed circumstances and unforeseen contingencies as they arise. In contrast to conventional law and economics studies, the article concludes that the impracticability doctrine has the potential to improve the efficiency and productivity of a wide range of long-term contractual agreements, and offers normative guidelines as to how the doctrine should be applied. The article also examines and rejects various philosophical objections to the impracticability doctrine, such as the arguments that it interferes with principles of economic liberty and voluntary exchange, that it interferes with the internal ethics of relational agreements, and that it clashes with principles of moral desert.

May, 2003

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I. INTRODUCTION

The doctrine of impracticability provides an affirmative defense to a complaint seeking specific performance or damages for an alleged breach of contract. It may be interpreted as a default rule that provides an implied term in every contract excusing the parties from their obligations in the event that some unforeseen contingency causes their performances to become "impracticable." Although its precise meaning is unclear, the term "impracticable" connotes severe -- perhaps even catastrophic -- consequences. In this respect, the doctrine is tantamount to an implied force majeure clause that applies whenever the impracticability is the result of circumstances that were in some sense unforeseen at the time the contract was formed. Although the criteria for establishing whether the circumstances were "unforeseen" are also unclear, they subsume at the very least the idea that the circumstances were not explicitly provided for under the contract.

The impracticability doctrine evolved relatively recently out of the doctrines of impossibility and frustration of purpose.[1] Indeed, until the middle of the nineteenth century the common law almost always required specific performance of contractual

[1]For an overview of the evolution of the legal doctrine, see articles by Paul L. Joskow, *Commercial Impossibility, The Uranium Market And The Westinghouse Case*, 6 J. Leg. Stud. 119 (1977), and Richard Posner & Andrew Rosenfield, *Impossibility and Related Doctrines in Contract Law: An Economic Analysis*, 6 J. Leg. Stud. 83 (1977).

obligations. The doctrine the courts most commonly applied was the "rule of absolute liability." This rule was relaxed, however, in *Taylor v. Caldwell*,[2] which excused both parties from their performances when the music hall one had contracted to rent from the other was destroyed by a fire, thus establishing the doctrine of impossibility. The doctrine of frustration was established in *Krell v. Henry*,[3] a case in which a party was excused from paying for a room it had contracted to rent to view King Edward VII's coronation when the coronation parade was cancelled due to the King's illness. This case, and others collectively referred to as the "Coronation Cases,"[4] expanded the range of circumstances under which the common law would excuse performances beyond those which made them physically impossible.

Although all of these cases were English, both doctrines were subsequently adopted by American courts. Indeed, modern statements of both doctrines have been written into the Restatement (Second) of Contracts.[5] A number of American cases have, however, further

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[2] *Taylor v. Caldwell,* 3 B. & S. 826, 122 Eng. Rep. 309 (1863).

[3] *Krell v. Henry*, [1903] 2 K.B. 740.

[4] See Andrew Kull*, Mistake, Frustration, and the Windfall Principle of Contract Remedies*, 43 Hastings Law J. 1, 22-23 (1991).

[5] See *Restatement (Second) of Contracts,* sections 263 and 265*.*

expanded the range of circumstances in which contractual performances may be excused. In *Mineral Park*,[6] for instance, the defendants were excused on the grounds that their performances were "impracticable." *Mineral Park* and similar cases thus established the doctrine of impracticability. The Restatement (Second) now devotes more attention to this doctrine than to either impossibility or frustration of purpose, and the Uniform Commercial Code (U.C.C.) has made it the principal excuse doctrine for sales contracts. The trend in the black letter law, at least, has clearly been in the direction of expanding the grounds on which excuse will be granted.

It is not at all clear, however, that this has been the trend in the case law. Cases such as *Mineral Park* have not been widely followed. Indeed, the courts' apparent reluctance to grant excuse despite the clear indications in both the Restatement (Second) and the U.C.C. that they may do so remains a conundrum. As a number of scholars have noted,[7] the inconsistencies in the case law merely reflect the confusion and disagreement among the courts about the appropriate role to assign to the excuse doctrines. Nonetheless,

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[6]*Mineral Park Land Co. v. Howard,* 172 Cal. 289, 156 P. 458 (1916).

[7]See Posner & Rosenfield, *supra*; Robert E. Scott, *Conflict and Cooperation in Long-Term Contracts*, 75 Cal. Law Rev. 2005 (1987); Clayton P. Gillette, *Commercial Rationality and the Duty to Adjust Long-Term Contracts*, 69 Minn. Law Rev. 521 (1985).

the courts have generally resolved any ambiguities inherent in the doctrines by construing them narrowly against the parties that have attempted to use them.[8]

The inconsistencies in the case law have been reflected in the commentary of legal scholars. Whereas an early study of excuse doctrines by Posner and Rosenfield purported to show that "...the common law has an internal economic logic stronger than many legal scholars believe...,"[9] some more recent studies have questioned whether they may have any useful role at all.[10] As George Triantis put it, "The continued existence of the doctrine [of impracticability], even if substantially dormant, only serves to preserve the confusion and uncertainty as to its application and scope. The role of contract law should be limited to the interpretation and enforcement of the parties' risk allocations."[11]

The conclusions of scholarly studies are, of course, always

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[8]Gillette, *supra* note 7, at 523.

[9]Posner and Rosenfield, *supra* note 1, at 118.

[10]See, for instance, Gillette, *supra* note 7; Scott, *supra* note 7; Alan O. Sykes, *The Doctrine of Commercial Impracticability in a Second-Best World*, J. Leg. Stud. 43 (1990); George G. Triantis, *Contractual Allocations Of Unknown Risks: A Critique Of The Doctrine Of Commercial Impracticability*, 42 Univ. of Tor. Law J. 450 (1992).

[11]Triantis, *supra* note 10, at 483.

contingent on their own particular theoretical perspectives and assumptions. Some studies of the excuse doctrines, for instance, have principally investigated how they might affect the efficiency of contractual risk allocations.[12] These have tended to conclude that excuse doctrines should have a very limited role. A number of more recent studies, on the other hand, have attempted to assess whether the excuse doctrines may serve a more useful role in the context of relational contracts. In these contexts the parties may have a duty to adjust their agreements as they unfold.[13] Indeed, many scholars now recognize that the field of relational contracting is itself of sufficient importance to merit much further study.[14]

This essay offers a further analysis of excuse doctrines in a relational contracting context. It focuses on the doctrine of impracticability, in part because this has been the most controversial of the excuse doctrines, and in part because the technical distinctions between the various excuse doctrines are of

[12]This is clearly a strong focus of some of the studies already cited, such as Posner and Rosenfield, *supra* note 1, and Triantis, *supra* note 10.

[13]See, for instance, Gillette, *supra* note 7; Scott, *supra* note 7.

[14]For recent studies that promote the importance of relational contracting, see Scott, *supra* note 7; Alan Schwartz, *Relational Contracts In The Courts: An Analysis Of Incomplete Agreements And Judicial Strategies*, 21 J. Leg. Stud. 271 (1992).

relatively little practical importance for analytical purposes.[15] To establish the groundwork for the analysis, the essay provides a behavioral economics framework within which both relational contracting practices and the doctrine of impracticability may be given concrete analytic form. The framework joins the new institutional approach to economics, particularly as it has been developed by Oliver Williamson,[16] with the game-theoretic approach to relational contracting suggested by Scott.[17]

This essay thus lies at the confluence of two related streams of scholarly research. The confluence of these two streams is hardly surprising. The concept of a relational contract emerged in response to the real-world limitations of classical contract analysis.[18] And the new institutional approach to economics emerged in response to the real-world limitations of neoclassical economics. It is no mere coincidence that classical contract

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[15]See Posner and Rosenfield, *supra* note 1, at 84-86.

[16]Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J. Law & Econ. 233 (1979); see also Oliver E. Williamson, The Economic Institutions of Capitalism, (1985).

[17]Scott, *supra* note 7.

[18]See Goetz and Scott, *Principles of Relational Contracts*, 67 Virginia Law Rev. 1089, 1089-1091 (1981).

analysis and neoclassical economics both conceive of transactions as complete contingent claims contracts.[19] Nor is it surprising that the study of relational contracts and new institutional economics have common origins in empirical observations of real-world business behavior.[20] What is surprising, however, is that, given their cognate origins and common concerns, the connections between the two have not been given more attention.

Relational Contracting

A relational contract[21] may be defined as an agreement of an ongoing nature between two or more parties which is typically

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[19]Goetz and Scott, *supra* note 18; Williamson, *supra* note 16.

[20]In particular, Stewart Macaulay, *Non-Contractual Relations in Business: A Preliminary Study*, 28 Am. Sociological Rev. 55 (1963).

[21]Until very recently, the term "relational contract" was used primarily by legal scholars. Economists usually referred to such agreements more generally using the terms "long-term contract" or "incomplete contract." This no doubt reflected a difference in the focus of most of the economic scholarship, which tended to emphasize the initial contracting stage of an agreement and its incentive effects rather than any subsequent adaptations. The focus of the economics literature has recently begun to emphasize the subsequent adaptations, however, and economists are increasingly using the term “relational contract”. See Eirik G. Furubotn and Rudolph Richter, Institutions and Economic Theory, (1997), and Robert Gibbons, *Incentives in Organizations*, 12 J. Econ. Persp. 115 (1998) for surveys of the economics literature.

adapted to changing circumstances and unique situations as they arise. In contrast to the complete contingent claims contracts of classical contract analysis and neoclassical economics, a relational contract is incomplete because "...the parties are incapable of reducing important terms of the arrangement to well-defined obligations."[22] Although the parties usually sign a formal written instrument, they do so with the understanding that the terms of the agreement will be adapted as the transaction unfolds. The written instrument itself provides only a framework within with such adaptations may occur. Indeed, MacNeil suggests that the written instrument may be thought of as more like a constitution for the administration of the agreement than a contract in the classical sense of the term.[23]

A relational contract is therefore neither as clearly and completely defined or as formal and impersonal as the complete contingent claims contracts of neoclassical economics and classical contract theory. Indeed, if all the possible means of facilitating a transaction were arrayed along a continuum identifying the degree

[22]Goetz and Scott, *supra* note 18, at 1091.

[23]Ian R. MacNeil, *Contracts: Adjustment Of Long-Term Economic Relations Under Classical, Neoclassical, And Relational Contract Law* 72 Northwestern Univ. Law Rev. 854, 894 (1978). MacNeil does, however, also suggest that there are dangers in pushing this metaphor too far.

to which the transaction is internalized within some administrative hierarchy, with a classical contract at one end of the continuum and the complete bureaucratic internalization of the transaction at the other, a relational contract would lie somewhere in the middle.[24] Relational contracts thus help to sustain "hybrid" modes of economic organization -- those that lie somewhere in between arms-length market transactions and transactions conducted under the command and routine of formal organizations.[25] In fact, they may be characterized to some degree in terms of the fiduciary responsibilities more commonly associated with a partnership than a contract in the usual sense.[26]

In addition to being an important legal device, therefore, relational contracts are also an important economic phenomenon. Economists have long recognized the importance and vast scope of the economic activities that are coordinated inside formal hierarchies rather than through market transactions, but they have only relatively recently begun to acknowledge the importance of the many economic activities that are coordinated through hybrid modes of organization, such as those that involve relational contracts.

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[24]This visualization was first suggested by Williamson, although he applied it to somewhat different concepts. See Williamson, *supra* note 16.

[25]*Id*.

[26]Gillette, *supra* note 7, at 571.

The new institutional economics, particularly as it has been developed by Williamson, has clearly been at the forefront of emerging new lines of research on nonmarket modes of economic organization.

The new institutional economics traces its origins to Ronald Coase's famous paper on the theory of the firm.[27] This was the first significant attempt by an economist to explain the role of the business firm in an otherwise market-oriented, capitalist economy. The paper conceived of modes of economic organization, however, in terms of a simple dichotomy -- all modes of organization could be categorized as either "market" or "firm." Since that paper, the lines have come to seem not only less clear, but even somewhat arbitrary. Research by noneconomists, including legal scholars developing the field of relational contract law, has been particularly influential.

Early theoretical work on relational contracting was also strongly influenced by important empirical research in sociology,

[27]Ronald Coase, *The Nature of the Firm*, 4 Economica 386 (1937). This is the "other" paper for which Coase is rightly famous. Although it has had less impact on legal scholarship than the paper in which Coase presented his famous theorem, it has been very influential on the economics literature. See the symposium, *Conference Papers to Celebrate the Fiftieth Anniversary of the "Nature of the Firm"* 4 J. Law, Econ. & Org. 1 (1988) for a broad survey of its impact.

particularly studies by Stewart Macaulay.[28] Macaulay's systematic surveys of real-world business behavior revealed that many market transactions were much less formal and much more fluid than either economic theory or the theory of contracts seemed to acknowledge. Subsequently, legal scholars began devising new avenues for legal theory which recognized important distinctions between different types of market transactions.[29] And economists working in the Coasian tradition[30] -- particularly Williamson -- began to develop new approaches to economics which could account for the rich diversity of nonmarket as well as market institutions.

The interdisciplinary character of so much of the research has

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[28]Macaulay, *supra* note 20.

[29]Notable early articles include Ian MacNeil, *The Many Futures of Contracts,* 47 S. Cal. Law Rev. 691 (1974(; MacNeil, *supra* note 23; Goetz and Scott, *supra* note 7.

[30]One could debate who should be included in this group, but most economists would probably agree that it should include transaction cost theorists such as Oliver Williamson, Michael Wachter & John Harris, *Understanding the Employment Relation: The Analysis of Idiosyncratic Exchange*, 6 Bell J. of Econ. 250 (1975), Victor Goldberg, *Toward an Expanded Economic Theory of Contract*, 10 J. Econ. Issues 45 (1976), Benjamin Klein, Michael Crawford, and Armen Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J. Law & Econ. 297 (1978), and Williamson, *supra* note 16, as well as agency theorists such as Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. Fin. Econ. 305 (1976),and Bengt Holmstrom, *Moral Hazard and Observability*, 10 Bell J. of Econ. 74 (1979).

made it an especially interesting -- and remarkably fertile -- area of scholarship. Most of the law and economics literature is interdisciplinary only in the sense that it applies concepts and techniques from economics to the analysis of the law and legal institutions.[31] The economics profession has generally treated the law only as a source of problems to which its concepts and techniques might be applied, and law and economics scholars within the legal profession have usually been content to follow their direction. In their efforts to understand nonmarket modes of economic organization, however, some economists have actually looked to the law and legal scholarship for insight and inspiration, and not just applications for their techniques.[32]

Regardless of their disciplinary perspective, most scholars would probably agree that both the practice and the theory of relational contracting are still in their infancy. There are still many issues for scholars to explore, and relational contracting practices themselves will probably continue to evolve. It is thus

[31]Indeed, the unofficial dean of the law and economics movement -- Judge Posner -- has argued that this is the only appropriate direction of influence. In his view, legal scholarship has little to offer to economic theory. See Richard A. Posner, Overcoming Law, 440 (1995).

[32]For an acknowledgement by Williamson of his use of the law and legal scholarship, see Oliver E. Williamson, *Revisiting Legal Realism: The Law, Economics, and Organization Perspective* 5 Ind. and Corp. Change 383 (1996).

not yet clear whether relational contracting will require the development of special legal doctrines. Indeed, the role of traditional legal doctrines in the performance of relational contracts is still not well understood.[33] But since hybrid modes of economic organization may be more important than many scholars have previously acknowledged, and since they may grow in importance yet, an understanding of this role is well worth pursuing.

Outline of the Essay

This essay attempts to construct an analytical framework within which relational contracting practices may be understood, and uses it to derive normative conclusions about the doctrine of impracticability. The broader contours of the framework are provided by concepts from the literature on behavioral economics and new institutional economics, and the details are filled in using a simple game-theoretic conception of cooperation which elaborates on the game-theoretic approach to relational contracting suggested by Scott.[34]

In contrast to neoclassical economics, and most classical contract analysis as well, both new institutional economics and the legal scholarship on relational contracts commonly assume that

[33]Scott, *supra* note 7, at 2012.

[34]*Id*.

economic agents' rationality is bounded -- that is, that there are limits on agents' capacities to frame and solve economic problems. Many of the writers who have addressed the doctrine of impracticability have also either explicitly or implicitly assumed that agents' rationality is bounded. Indeed, one might argue that the doctrine of impracticability itself presumes that agents' rationality is bounded. It should come as no surprise, therefore, that the bounded rationality assumption is also a central premise of this essay.[35] As this assumption is still controversial, section II explains why it is necessary, and introduces some concepts and terminology that will be helpful in formulating a theoretical framework that is explicitly and self-consciously based on bounded rationality assumptions.

Section III presents the theoretical framework and discusses its implications. Whereas many previous studies have concluded that there is little, if any, useful role for the doctrine of impracticability, the analysis here suggests that, if it can be

[35]In this respect, the essay attempts to respond to the challenge issued by other legal scholars to incorporate human frailties and cognitive limitations explicitly into law and economics scholarship. See Robert C. Ellickson, *Bringing Culture and Human Frailty to Rational Actors: A Critique of Classical Law and Economics*, 65 Chi-Kent. L. Rev. 23 (1989); Russell B. Korobkin and Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 Calif. L. Rev. 1051 (2000).

wisely applied, the doctrine should help to reduce the costs of governing relational contracts and provide a myriad of other economic benefits. One of the main implications of the theoretical framework is that the parties to a relational contract may have to incur significant governance costs in order to ensure that their agreement will be sustainable. These governance costs arise from their need either to restrain their levels of cooperation and the size of their investments or to invest in special arbitration procedures in order to lessen the strategic uncertainties inherent in their agreement. If the doctrine of impracticability can be wisely applied, it may help to reduce these strategic uncertainties and thus increase the parties' levels of cooperation and the size of their investments without the use of costly arbitration procedures.

Section IV elaborates on these normative implications and attempts to define criteria by which the doctrine of impracticability should be applied. The criteria that it suggests are broadly consistent with at least some of the precedents. They are also consistent with the admonishments of those scholars who have worried that expansive interpretations of the excuse doctrines would dampen parties' incentives to allocate contractual risks efficiently. Section V addresses whether the normative prescriptions might conflict with any of the broader moral values embedded in contract law, such as the principles of party autonomy

and individual self-expression, and assesses whether legal intervention of the kind they support would undermine the moral and ethical basis of any extralegal governance mechanisms that might also be important to sustaining a relational contract. Section VI offers some conclusions.

II. BOUNDED RATIONALITY

The term "bounded rationality" refers to a conception of human beings' cognitive abilities that recognizes limitations on the human imagination and humans' information processing capacities. It implies that human behavior may be characterized as "intentionally rational, but only limitedly so."[36] Although the bounded rationality assumption remains controversial, serious controversy arises only from its use in economic models, not from any disagreement about its descriptive relevance. It is simply indisputable that human rationality is bounded. If it were not, no one would ever experience true surprise, and a game of chess would be no more challenging than a game of tic-tac-toe. The important issue is whether the bounded rationality assumption is necessary -- or even helpful -- for constructing useful economic models and conducting insightful analyses of legal doctrines.

[36]This is a famous quote from Herbert Simon, who won the Nobel Prize in economics in 1985 for his seminal work on bounded rationality. See Herbert A. Simon, Models of Man (1957).

Those who believe it is not usually adhere to a logical positivist philosophy of science, and often cite Milton Friedman's famous paper[37] on the methodology of positive economics in support of their position. Friedman's point in that paper was to emphasize that a model need not be descriptively accurate to provide useful predictions. It would do an injustice to Friedman's paper, however, and to Friedman himself, to push that point too far. Friedman's argument does not imply that the assumptions of a model are completely irrelevant, or that it is illegitimate to model peoples' behavior as less than perfectly rational. In fact, even some of Friedman's critics acknowledge that he never intended to embrace an inflexible logical positivist philosophy of science.[38] Rather, his argument was a counter to critiques of neoclassical economics which denied the relevance even of models which imputed rather modest cognitive abilities to their agents.

Most of the models used by conventional economic theorists today impute considerably more rationality to their agents than the

[37]Milton Friedman, *The Methodology of Positive Economics*, in Essays in Positive Economics (1953).

[38]McCloskey, for instance, notes that Friedman's essay was "more post-modernist than one might suppose" and that "Friedman appeared to be struggling to escape the grip of positivism and its intellectual traditions, though with only sporadic success." See D.N. McCloskey, *The Rhetoric of Economics*, 21 J. Econ. Lit. 481, 485-486 (1983).

relatively simple, static optimization models defended by Friedman. Modern theorists commonly assume that economic agents are able to solve infinite horizon inter-temporal optimization problems with imperfect information using Bayesian priors and complex signaling arrangements. Most noneconomists cannot even comprehend what that means. There is a growing sentiment even within the economics profession, however, that many of these models impute far too much rationality to their agents, and that some conception of behavior that is boundedly rational would yield significant advances in economic theory.[39]

Indeed, a casual survey of the economics journals suggests that there has never been any time in which the interest within the economics profession in models based on bounded rationality assumptions has been greater than in the present. And although they might still believe that formal treatments are premature, a number of leading economists have now attested to the desirability of bounded rationality assumptions.[40] Even Gary Becker, who has

[39]See, for instance, the argument by John Conlisk, *Why Bounded Rationality?*, 34 J. Econ. Lit. 669 (1996).

[40]For a good survey of recent work in economics that uses the bounded rationality assumption, see Conlisk, *supra* note 39. A list of the prominent economists who have expressed an interest in or indicated a receptiveness to models based on bounded rationality assumptions would have to include a number of Nobel prize winners, including Herbert Simon, of course, and also Kenneth Arrow, James Buchanan, Ronald Coase, Douglas North, and perhaps even Gary Becker. These have been among the

pushed the perfect rationality assumption farther than almost anyone else, has acknowledged in his Nobel lecture that "Actions are constrained by income, time, *imperfect memory and calculating capacities*, and other limited resources,"[41] [italics added] and that he may at times have imputed too much rationality to people in his own work.[42]

Bounded Rationality and the Doctrine of Impracticability

Regardless of whether it has any widespread acceptance within the economics profession, any serious treatment of the doctrine of impracticability will require that bounded rationality be made integral to the analysis.[43] There are two prongs to the modern doctrine of impracticability. The first is the impracticability test: in order for the doctrine to apply, performance of the contract would have to result in a severe loss for the party seeking an excuse. The second is the foreseeability test: performance must have been made impracticable by an occurrence

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most influential economists on the law and economics movement.

[41]Gary S. Becker, *Nobel Lecture: The Economic Way of Looking at Behavior*, 101 J. Pol. Econ. 385, 386 (1993).

[42]*Id.* at 402.

[43]This is a position that has been supported by a number of legal scholars, including Joskow, *supra* note 1; Triantis, *supra* note 10; Gillette, *supra* note 7.

which was unforeseen at the time of contracting. Although it does not appear to receive equal billing, the foreseeability test is by no means less important than impracticability. As Triantis explains, "The doctrine *necessarily* rests on the premise that contracting parties ... are unable to allocate contractually risks that are unforeseen."[44] [italics added]

Consider the language of U.C.C. section 2-615(a), which embodies the most contemporary version of the doctrine: "Delay in delivery or non-delivery ... by a seller who complies with paragraphs (b) and (c) is not a breach of his duty ... if performance as agreed has been made *impracticable by the occurrence of a contingency the non-occurrence of which was a basic assumption on which the contract was made..."* [italics added]. Vague though it may be, it is possible to interpret this language as alluding to contingencies that are unforeseeable owing to the limits on the rationality of the parties to the contract. Indeed, such an interpretation is supported by official comment 1, which explains that "This section excuses a seller ... where his performance has become commercially impracticable because of *unforeseen supervening circumstances not within the contemplation of the parties at the time of contracting*" [italics added].

In a world where everyone was unboundedly rational, it is

[44]Triantis, *supra* note 10.

difficult to imagine why any "unforeseen supervening circumstances" that were not "within the contemplation of the parties at the time of contracting" would ever arise, particularly if they were potentially important enough to render the performance of the contract impracticable. One could, of course, argue that the high costs of transacting might make it uneconomical for the parties to address all contingencies in a detailed contract, but this does not explain why the circumstances should be characterized as "unforeseen" and "not within the contemplation of the parties at the time of contracting." The explanation that is most compatible with this essay, of course, is that both the courts and the drafters of the U.C.C. have correctly perceived that the parties to a contract are boundedly rational[45] and that they will not always be able to contemplate all of the contingencies that might arise during the life of their agreement, even if those contingencies might be important enough to render their performance of the contract impracticable.

There are two very different ways in which bounds on agents' rationality could explain unforeseen contingencies. Since boundedly rational agents are prone to make errors, unforeseen contingencies could arise from the failure of the parties to contemplate contingencies that should have been foreseeable based

[45]That is not to say, of course, that they have ever thought about peoples' cognitive limitations in exactly those terms.

on past experience, expert advice, or common sense. Although the legal precedents are not crystal clear, it seems doubtful whether unforeseen contingencies of this type should pass the foreseeability test. If they did, the parties to a contract might be excused from performances in situations which they could have avoided altogether. As a number of scholars have noted,[46] the doctrine of impracticability would hardly provide efficient incentives if that was the way it was applied.

Unforeseen contingencies could also arise, however, even if the parties drew wisely on their own and others' past experience, the best expert advice, and were otherwise eminently sensible. In such a case, the contingencies would, in a sense, be reasonably unforeseen. Indeed, as Posner and Rosenfield have observed,[47] some courts have applied an objective version of the foreseeability test and stated it in exactly those terms. As one California court put it,[48]

> The purpose of a contract is to place the risks of performance upon the promisor, and the relation of the parties, terms of the contract, and circumstances surrounding its

[46]See Joskow, *supra* note 1, at 158 for a clear statement of the argument.

[47]Posner & Rosenfield, *supra* note 1, at 99.

[48]*Lloyd v. Murphy*, 25 Cal. 2d 48, 54. 153 P.2d 47, 50 (1944).

> formation must be examined to determine whether it can be fairly inferred that the risk of the event ... was not *reasonably* foreseeable [italics added].

Under an objective version of the foreseeability test, the parties would assume the risks of any contingencies that were reasonably foreseeable. This would appear to be more consistent with the official interpretations of the U.C.C. than any subjective version of the test. As official comment 8 to U.C.C. section 2-615 indicates "... *the exemptions of this section do not apply when the contingency in question is sufficiently foreshadowed at the time of contracting to be included among the business risks which are fairly to be regarded as part of the dickered terms*..." [italics added]. Thus interpreted, the foreseeability doctrine would provide a way of "delineating the boundary between those contingencies that are reasonably part of the decision-making process and those that are not."[49]

The modern doctrine of impracticability, therefore, is probably meant to be based on an objective foreseeability test. There is, nonetheless, considerable disagreement in the legal precedents, as well as in the commentary of legal scholars.[50] The

[49]Joskow, *supra* note 1, at 157.

[50]Joskow, *supra* note 1, at 157-158, for instance, seems to think that the courts would normally apply an objective test; Posner & Rosenfield, *supra* note 1, at 99-100,

normative analysis below attempts to show that, if it is to provide economically efficient incentives, the doctrine must involve the application of an objective foreseeability test. Indeed, the analysis implies that there are governance costs associated with any ambiguities or judicial errors in the application of the doctrine. This raises the issue of whether the courts can be relied upon to apply the doctrine clearly and consistently enough to reduce the costs of governing relational contracts overall, or whether their efforts will simply backfire and prove counterproductive.

Indeed, bounded rationality assumptions should not only characterize the parties to a relational contract, but also the judges and juries that must interpret and apply any relevant legal doctrines.[51] If it is to be clearly and consistently applied, the doctrine of impracticability must be within the scope of the decision-making capabilities of the courts. The issue is whether criteria may be defined that are consistent with the purpose and character of a relational contract, as well as the boundedly rational behavior of the parties, and yet clear enough that they

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on the other hand, seem to believe the foreseeability test is actually disappearing.

[51]The general matter of judicial competence is beyond the scope of this essay. See Gillian K. Hadfield, *Judicial Competence And The Interpretation of Incomplete Contracts*, 23 J. Leg. Stud. 159 (1994) for an interesting survey of the relevant literature.

may be consistently applied by the courts given the existing rules of evidence and the limited competencies of judges and juries.

Routines and Heuristics

The focus of this essay is on long-term contractual agreements between relatively sophisticated business parties. Thus, the business firm is the basic unit of analysis. Although it is not necessarily inconsistent with bounded rationality assumptions, the conceptualization of firm behavior in neoclassical economics clearly highlights the sense in which it is rational at the expense of comprehending how that rationality is bounded. The issue is whether there is any practical alternative. While at one time there may not have been, that is no longer true. A diverse set of scholars working within related but distinct fields of inquiry, including behavioral economics, decision theory, evolutionary economics, the management of technology, and managerial and organizational theory, have developed an alternative conceptualization which characterizes firms' behavior in terms of their behavioral routines and decision-making heuristics.[52]

[52]A number of legal scholars have already drawn on this conceptualization in their own research, though perhaps without embracing the research agenda that accompanies it. See, for instance, Scott, *supra* note 7, Triantis, *supra* note 10. For an excellent overview of the literature and discussion of the basic approach, see Richard R. Nelson & Sidney G. Winter, An Evolutionary Theory of Economic Change (1982). For a discussion of the research agenda, see Michael D. Cohen et al.,

There is considerably more flexibility inherent in this conceptualization of firm behavior than one might at first imagine. As Nelson and Winter point out, a firm's behavior may be represented by a hierarchy of routines and heuristics, describing 1) its day-to-day operations, 2) its periodic investment decisions, and 3) at the highest level, its major strategic decisions, such as whether and how to modify its day-to-day operations or which new business opportunities to pursue.[53] Although many investment and strategic decisions are far from routine in the ordinary sense of the word, the behavioral theory of the firm assumes they may nonetheless be described by those "...relatively constant dispositions and strategic heuristics..."[54] that define what is "...regular and predictable..."[55] about them.

The use of the word "routines" to describe a firm's operations

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Routines and Other Recurring Action Patterns of Organizations: Contemporary Research Issues, 5 Ind. and Corp. Change 653 (1996). For an update on recent developments, see *Special Issue: Theory of the Firm, Learning and Organization,* 12 Ind. and Corp. Change 147 (2003). As a survey of the literature will make clear, the treatment of routines and heuristics here does scant justice to the subtleties and complexities of the research issues.

[53]Nelson & Winter, *supra* note 55, at 14.

[54]*Id.* at 15.

[55]*Id*.

is not meant to suggest that they are simple or banal, either. Rather, it reflects the view that many of the complex patterns of activities that comprise a firm's operations are intentionally repeated from one period to the next. Indeed, a firm's success may well depend on how effectively it is able to repeat complex patterns of activities over time -- or, in other words, on how well it is able to "routinize" its operations.[56] In this respect, the routinization of a firm's operations may describe an actual management goal, and not just a theoretical conception of the firm's behavior.

The use of routines and heuristics to conceptualize firm behavior is not necessarily as pronounced a departure from the conventional economic approach as it may appear. The routines and heuristics that define a firm's behavior might be usefully represented as the solution to some constrained optimization problem. Indeed, one might argue that the constrained optimization techniques characteristic of the conventional economic approach are themselves simply part of the routines of conventional economic analysis. On this view, they merely serve to help identify and clarify the routines and heuristics that define a firm's behavior.

Indeed, this is the way in which many economists rationalize their use of constrained optimization models. Such models are

[56]Nelson & Winter discuss routines as a target of the management goals of control, replication and imitation. See *Id*. at 112-124.

simply too vulnerable to a reductio ad absurdum argument not to be interpreted in some metaphorical sense. Unless they are willing to contend that the entire course of human history, down to its minutest details, can be represented as some refinement of a Bayesian-Nash equilibrium path of some imperfect information, infinite-horizon, overlapping generations model, even those economists working strictly within the conventional paradigm will acknowledge that the logic of optimization can be pushed only so far. Indeed, if constrained optimization techniques are used heuristically, they may be fully consistent with bounded rationality assumptions.[57] The important criterion is whether the scope and complexity of the problem the agents in a model are assumed to solve is within the range of their cognitive abilities.

There are three main reasons why this essay conceptualizes firm behavior in terms of routines and heuristics rather than a constrained optimization problem. First of all, the analysis is mainly directed at relational contracts between corporate entities. A corporation's decision-making capabilities are embodied in

[57]This does not mean that the bounded rationality assumptions are meaningless or unnecessary. It merely means to suggest that constrained optimization techniques may be used heuristically to bring boundedly rational behavior into a sharper focus. Attempts to interpret bounded rationality assumptions as merely calling for models in which agents' behavior is characterized by optimizations subject to their cognitive limitations (see Posner, *supra* note 31) are logically incoherent. See Conlisk, *supra* note 39 for a discussion of the infinite regress problem.

distinct corporate assets -- eg) "human" and "organizational" capital, computer programs, corporate records, etc. It is more realistic to conceive of a corporation's capabilities and behavior in terms of its routines and heuristics than in terms of a constrained optimization problem. Second, since the analysis is predicated on bounded rationality assumptions, the nuances cannot be articulated as clearly or completely in terms of the conventional logic. Finally, and perhaps most importantly, conceptualizing firm behavior in terms of corporate routines and heuristics makes the bounded rationality assumptions more conspicuous and integral to the analysis.

The Use of Routines and Heuristics in Modelling Relational Contracting Problems

For the purposes of this essay, relational contracting problems will be separated into two phases: 1) the first phase, in which each of the parties decides whether to enter into a relational contract and negotiates its terms and conditions, and 2) the second phase, in which the parties transact within the parameters of a relational contract they have already entered into. In the first phase of relational contracting problems, the parties must compare the expected net gains from a relational contract with the expected net gains that could be earned from any of the alternatives, based, of course, on some understanding of how the

relational contract and the alternatives would actually work.

The parties' interactions within the second phase of a relational contracting problem will generally consist of a variety of coordinated activities and cooperative adjustments, as required by the circumstances at hand. These coordinated activities and cooperative adjustments will be conceptualized as the day-to-day routines characteristic of the transaction. Although the ordinary meaning of the term "routine" may not do justice to the difficulties of actually coordinating the parties' activities and negotiating cooperative adjustments, such coordination and adjustment is nonetheless "routine" in the special sense used here. In the event of some unforeseen contingency, of course, the routines governing the parties' conduct might fail, thereby causing a fracture of the agreement.

The first phase of a relational contracting problem will be conceptualized in two related ways. The analysis will assume that at the highest level in a firm's decision hierarchy, the level at which the firm contemplates decisions with the broadest strategic scope, the party's decision-making heuristics may be described using Williamson's conjectures about the assignment of transactions to governance structures.[58] In Williamson's schema, a party first forms some expectation about how well a governance structure would

[58]Williamson, *supra* note 16.

work, and then makes some assessment of how high the governance costs would be. The party will choose to enter into a relational contract only if the governance costs would thus be lower than they would be if any alternative means of organizing the transaction were chosen (the next best alternative would usually be to organize the transaction internally within the firm's administrative hierarchy).

III. THE THEORETICAL FRAMEWORK

A firm's decision to enter into a relational contract is made at the highest level in its decision hierarchy.[59] Generally, a profit-seeking firm will only enter into a relational contract if it determines that 1) the transaction will yield sufficient net returns, and 2) the governance costs of transacting through a relational contract will be less than those that would be incurred in sustaining the transaction by any other means. The analysis will assume throughout that a relational contract would yield sufficient net returns to make the transaction at issue worthwhile.

Williamson conjectures that the costs of governing a transaction depend on four factors: 1) the size of any transaction-specific investments, 2) the uncertainty inherent in the

[59]See Gordon Walker & David Weber, *A Transaction Cost Approach to Make-or-Buy Decisions*, 29 Admin. Sc. Quar. 373, 381-383 (1984) for a discussion of the make-or-buy decision making process of a large automobile manufacturer.

transaction environment, 3) whether the transaction will be repeated, and, most significantly, 4) the manner in which the transaction is governed.[60] For the purposes of this essay, a relational contract may be considered one possible manner of governing a transaction. Internal organization within the firm's administrative hierarchy may be considered another.[61] Williamson reasons that the manner of governing a transaction with the lowest costs will vary depending upon the other three factors. He suggests a schema for assigning transactions to the governance structures with the lowest governance costs.

In Williamson's schema, a relational contract would only be considered for a transaction that 1) required significant transaction-specific investments, 2) had to be conducted in the face of significant uncertainty, and 3) would be of an on-going, long-term character. The principal alternative to a relational contract would be to organize the transaction internally, either through a merger of the parties, a joint venture of some kind, or by one of the parties investing in the capabilities necessary to do itself whatever it was that would have been contracted for at arms length. For a transaction of an on-going, long-term character,

[60]Williamson, *supra* note 16.

[61]Williamson conceives of the manner in which transactions are governed more broadly than in the narrow, legalistic sense assumed here. The purpose of the legalistic focus here is simply to highlight the analysis of legal doctrine.

Williamson's conjectures about the choice between these two alternatives imply the following:

Specific Investments	Uncertainty: moderate	Uncertainty: high
large	Internal Organization/ Relational Contract	Internal Organization
moderate	Relational Contract	Internal Organization/ Relational Contract

The relative costs of governing a transaction through an arms-length, relational contract rise as 1) the size of transaction-specific investments rises, and 2) the degree of uncertainty rises. Thus, on-going transactions requiring large, transaction-specific investments in highly uncertain environments will generally be internalized. On the other hand, on-going transactions that require only small or moderate transaction-specific investments in only moderately uncertain environments will generally be governed through relational contracts. On-going transactions requiring large transaction-specific investments in moderately uncertain environments and those requiring only small or moderate transaction-specific investments in highly uncertain environments might best be governed through internal organization or relational contracts, depending on the particulars of each case.

As simple as it may sound, Williamson's schema has been elaborated and applied with great success in a number of empirical

studies.[62] It has been extremely influential on the research undertaken by formal economic theorists as well as business scholars who study management and organizations.[63] Indeed, it is frequently taught, though perhaps in some distilled form, in a number of MBA programs. For all of these reasons, it is a useful way of representing the heuristics that firms employ in deciding how to organize their transactions.

Williamson's rationalization of his schema relies on the assumption that economic agents are inevitably characterized by both bounded rationality and opportunism.[64] Because they are boundedly rational, the parties must leave larger gaps in a relational contract as the environment becomes more uncertain. This places a greater onus on subsequent adaptations of the agreement. The likelihood that one of the parties will behave opportunistically, however, and refuse to cooperate in adapting the agreement will also rise as the degree of uncertainty rises. A cloud thus hangs over the transaction, growing larger as the

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[62]See Howard A. Shelanski & Peter G. Klein, *Empirical Research in Transaction Cost Economics: A Review and Assessment*, 11 J. Law & Econ. & Org. 335 (1995).

[63]The influence of Williamson's transaction cost approach is particularly evident in Alfred Chandler's monumental comparative history of the modern business corporation. See Alfred Chandler, Scale and Scope, (1990).

[64]Williamson, *supra* note 16.

environment becomes more uncertain. At some point, one of the parties will prefer to organize the transaction internally, so as to eliminate the risk of disruptions and other inefficiencies caused by the possibility of the other's opportunism.

While this logic is intuitively compelling, it has resisted theoretical formalizations. Many formal economic theorists have taken up Williamson's challenge to investigate transactional problems, but they have usually proceeded by elaborating on information asymmetries or investment disincentives, rather than on governance problems as Williamson has more broadly conceived of them.[65] The bounded rationality assumption has no doubt posed a considerable impediment. While a fully satisfying formal treatment of governance problems is probably beyond the reach of existing techniques, heuristic models may nonetheless prove insightful. Some simple game-theoretic reasoning will be used, therefore, to help conceptualize the link between uncertainty and the governance costs of a relational contract. This link is well worth clarifying because it will prove central to the analysis of the role the doctrine of impracticability may have in helping to reduce those

[65]See, for instance, 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 D. Hart & John Moore, *Property Rights and the Nature of the Firm,* 98 J. Pol. Econ. 1119 (1990); Bengt Holmstrom & Jean Tirole, *The Theory of the Firm* in Handbook of Industrial Organization (1987).

governance costs.

Some Game-Theoretic Heuristics

The discussion in this section is based on a simple, game-theoretic model that has been presented more formally elsewhere.[66] The model describes a scenario in which two parties -- or "players" -– must decide how much they will each invest for the sake of their transaction and then how much they will cooperate with one another during their subsequent and repeated interactions. Their profits will be greater the larger their investments and the more cooperative their interactions. Unfortunately, they both know that their transaction is prone to the prisoner's dilemma: even if they agree to cooperate fully, each knows that the other will have an incentive to "cheat" by cooperating less than fully. The cheater prospers by sharing in the profits without pulling its weight while the other -– the "dupe" –- suffers by having to pick up the slack.

The conventional wisdom holds that the players in a repeated prisoner's dilemma game will normally be able to sustain a cooperative agreement by threatening to punish any player who

[66] See Donald J. Smythe, *The Role of Contractual Enforcement and Excuse in the Governance of Relational Agreements: An Economic Analysis,* Global Jurist Frontiers: Vol.2: No.2: Art.3 (http://www.bepress.com/gj/frontiers/vol2/iss2/art3). For an excellent, nontechnical introduction to game theory, its history and its methods, see William Poundstone, Prisoner's Dilemma (1992). For a technical introduction, see Robert Gibbons, Game Theory for Applied Economists (1992).

deviates. In the model that is described here, the threatened punishment would consist of the punishing party reverting to completely noncooperative behavior in every remaining period of the repeated game and thus causing the cheater to lose the benefits of its cooperation. That would be a very severe threat of punishment, indeed. But it would also be credible, since the party being punished would have an incentive to behave noncooperatively in every remaining period too, and the parties' strategies would thus be in a noncooperative equilibrium.[67]

A relational contracting agreement could be sustained in this manner, however, only if the present discounted value of the losses the parties anticipated from the threatened punishment were at least as great as the short-term gains they could earn by cheating. The short-term gains would derive from the cheater's temporary increase in profits until its cheating was detected and the punishment commenced. The anticipated losses from the punishment would derive from the decrease in the future cooperativeness of the parties' interactions. Since the gains from cheating are earned immediately, but the losses are prospective, the difficulty in sustaining a cooperative agreement through punishment threats becomes greater as the rate at which the parties' discount their future profits (and losses) rises.

[67]In game-theoretic terms, a cooperative equilibrium sustained by this threatened punishment would be "subgame perfect." See Gibbons, *supra* note 71.

If the parties were unboundedly rational then they would be able to foresee all of the problematic circumstances and contingencies that might arise over the course of their agreement and agree on appropriate contractual safeguards. But since the parties are boundedly rational there are inevitably some contingencies that they cannot foresee and for which they cannot plan. Indeed, one of the great virtues of a relational contract is that it does not require complete and exhaustive planning for every possible contingency. Rather, the parties can adapt their agreement to contingencies as they arise. In this sense, a relational contract helps to shelter the parties from the uncertainties of unforeseen contingencies.

There is another sense, however, in which a relational contract actually exposes the parties to uncertainties they would not otherwise face. It is useful to distinguish between the fundamental uncertainties inherent in the possible states of the world and the strategic uncertainties inherent in a relational contract. The former derive mainly from factors external to the parties' transaction, such as the weather, macroeconomic conditions, international conflicts, etc. There is little the parties can do to avoid them. The latter derive mainly from the nature of the parties' transaction itself. Once the parties enter a relational contract each of their fortunes is tied in some measure to the behavior of the other. If they could always be

relied upon to adapt their performances honestly and fairly in accordance with the broader principles of their agreement, then the fundamental uncertainties associated with the unforeseeable contingencies would not create any strategic uncertainties about the behavior of the other.

As Williamson has emphasized,[68] however, the parties may well be expected to behave opportunistically. For instance, in the event of an unforeseen contingency one of them might refuse to adapt the transaction, regardless of whether it had obliged itself to do so at the outset. Since the parties' failure to adapt their agreement would be tantamount to a complete breakdown in their cooperation, the possibility would add to the uncertainty they faced going into the transaction. Indeed, a significant part of the uncertainty faced by the parties to a relational contract may be of this strategic type. And uncertainty of any kind causes the parties to discount their future profits (and losses) more heavily, thereby inhibiting the effectiveness of punishment threats in maintaining a self-enforcing relational agreement.

Strategic Response

Since a relational contract is by design largely self-enforcing, one important way in which the parties may respond to

[68]Williamson, *supra* note 16.

the uncertainties is by negotiating an agreement that is less than fully cooperative. Under the usual game-theoretic assumptions,[69] the parties' incentives to deviate from a cooperative agreement decline as the cooperativeness of the agreement declines. Thus, if the uncertainty inherent in the transaction environment is too great for the parties to be able to sustain a fully cooperative agreement, they may still be able to sustain an agreement that is less than fully cooperative. Indeed, the implication is that they might want to negotiate an agreement that is less than fully cooperative to ensure that their agreement will be sustainable.

This is important because even a relatively small decrease in the cooperativeness of the parties' agreement could have a significant effect on the profitability of their transaction. In any one period a small decrease in the level of their cooperation might not matter all that much, but a small decrease in their cooperativeness in every period over the life of a long-term agreement probably would. Moreover, the decrease in the cooperativeness of their transaction would usually be accompanied by a decrease in the size of any initial investments they might make towards the profitability of the agreement. The overall

[69]In particular, the assumption that the players' payoff functions are concave in the strategic variables. Game-theoretic models are usually only well-defined under concavity assumptions.

effect could be very large.

An Example

The idea can be made more concrete with an example.[70] Suppose that a manufacturer would like to contract for the supply of certain component parts. Suppose, however, that the industry is in flux so that any arms-length transaction will be fraught with uncertainty. The manufacturer would like to enter into a relational contract with a supplier so that they can adapt their agreement to both foreseen and unforeseen contingencies as they arise. It finds a supplier and they begin their negotiations. Both parties know that their relationship will be more profitable if they can sustain high levels of cooperation. The manufacturer, for instance, may be operating under "just in time" principles. Hence, it may have to depend on timely deliveries. The supplier may produce a number of different components for a number of

[70]There is, of course, a catch. The concept of a relational contract is predicated on the notion that the parties are unable to specify all of their contractual obligations in a written document. Thus, many of the cooperative adjustments that they expect to make under their agreement are not fully and clearly defined in advance. An example may help to clarify what these cooperative adjustments might entail, but the more clearly it does so, the more it will seem that the parties should have been able to specify them in a written instrument. The example here should thus be read more for the concreteness it lends to the problem than for any insight it provides into the solution.

different manufacturers using flexible production facilities. Hence, it may have to depend on receiving adequate advance notice on any orders.

The parties would, of course, likely negotiate terms defining time parameters for deliveries by the supplier and notice for orders by the manufacturer. The parties might anticipate, however, that once the agreement was in effect they would both be willing to negotiate around these parameters for the sake of maintaining a good and prosperous business relationship. Suppose, for instance, that the manufacturer unexpectedly needed more parts on less advance notice than the formal agreement required. The supplier might still be willing to fill the order. It might have some temporary excess capacity and hence not even have to incur any additional costs. Or it might be willing to run its facilities on an overtime basis at some additional expense. Suppose, on the other hand, that the supplier was unable to make a timely delivery without incurring inordinate costs. The manufacturer might still be willing to waive any applicable penalties. It might have sufficient quantities of the part in stock not to incur any inconveniences or costs. Or it might be willing to transfer surplus parts from one plant to another.

Both the manufacturer and the supplier might stand to gain if they had an understanding that they would each be willing to make cooperative adjustments that were not specifically detailed in the

contract. But their understanding would have to recognize that each would place certain limits on its willingness to make such adjustments. Just how far would the supplier be willing to go in order to fill an order on short notice? Would it be willing to defer other jobs? Run four hours of overtime? Eight hours of overtime? Just how forgiving would the manufacturer be in the event of a late delivery? Would it be willing to run its stocks down to precariously low levels? Would it be willing to transfer surplus parts from a plant two hundred miles away? Two thousand miles away?

As the example suggests, there might be considerably more flexibility inherent in the possibilities for reciprocal cooperation than a simple prisoner's dilemma game suggests. In general, it might be extremely difficult, if not impossible, to specify all of the details of the cooperative actions routinely undertaken under a relational contract, and so many of them would likely be left out of any written instrument. The parties would nonetheless enter a relational agreement with certain expectations about just how cooperative they would each be. The analysis above suggests that their expectations might well depend on the uncertainties -- particularly the strategic uncertainties -- surrounding their transaction. The parties might reasonably anticipate that both they and the other would routinely display less cooperation in a more uncertain environment -- that is, one in

which unforeseen contingencies were not only more likely, but also more likely to encourage opportunism. Indeed, the analysis suggests that they would expect their transaction to be less cooperative in a more uncertain environment because high levels of reciprocal cooperation would be unsustainable.

Special Arbitration Procedures

An alternative -- or perhaps additional -- way in which the parties might address the governance problems is by incorporating special arbitration procedures into their agreement. Scott, for instance, suggests that the appointment of a contract referee who is authorized to investigate and discover the facts surrounding a dispute and then issue a final and binding judgment might be particularly effective.[71] Indeed, appointing an arbitrator with such sweeping powers might help to 1) ensure that an agreement would not be disrupted or terminated by unforeseen contingencies, and 2) reduce the strategic uncertainties that might otherwise inhibit the parties' cooperativeness during the life of their agreement. It would also, however, be quite costly -- though perhaps not as costly as civil litigation. The referee would have to be paid some sort of retainer fee, regardless of whether circumstances truly requiring her services ever arose. And there

[71]Scott, *supra* note 7, at 2049.

would no doubt be additional adjudication costs if her services ever were truly required.

Such arbitration procedures would essentially serve as a substitute for judicial intervention. Although they might allow disputes to be adjudicated relatively cheaply compared to the civil litigation process, they would not provide the same external benefits. There is a public good dimension to the judicial resolution of contractual disputes, particularly if they are of a recurring type.[72] Legal precedents provide default rules for all contracts, and may thus reduce the costs of negotiating and drafting any number of agreements. The benefits of special arbitration procedures, on the other hand, derive largely from their capacity to reduce the strategic uncertainties surrounding a particular relational contract. None of these benefits spill over to other transactions. If a similar function could be served by a contract default rule, such benefits would be available to all contracting parties at much lower social costs.

The Governance Costs of a Relational Contract

The analysis illustrates some of the potentially important governance problems associated with a relational contract. It is important to emphasize that these governance problems carry real

[72]See Schwartz, *supra* note 14, at 277.

economic costs. Since special arbitration procedures of the type just discussed imply rather direct costs, we will focus on governance costs which manifest themselves in the structure of relational agreements. For our purposes, therefore, we may think of the governance costs of a relational contract as the difference between the joint present discounted profits that would be earned in a fully cooperative relational agreement and the joint present discounted profits that would be earned in a sustainable but less than fully relational agreement.[73] Depending on the degree of uncertainty inherent in the transaction environment, these could be substantial. Indeed, they might be substantial enough to make some alternative to relational contracting desirable, even though a relational contract is still feasible.

Indeed, the analysis implies there is a chain of linkages between the uncertainty inherent in the transaction environment, the parties' discount rates, and the governance costs of a relational contract. One can infer that as the degree of uncertainty and parties' discount rates rise, the governance costs of a relational contract will also rise. This should make the alternatives to relational contracting -- particularly the integration of the transaction within an administrative hierarchy -

[73]These are not true opportunity costs as they do not represent the costs of alternatives foregone. They are nonetheless helpful for thinking about transactional problems.

- relatively more attractive. There is little, if any, reason to believe that the costs of governing a transaction internally would be as strongly affected by uncertainty in the environment as the costs of governing a transaction at arms length.[74] Thus, as the degree of uncertainty rises, the relative costs of governing a transaction through a relational contract will rise, making vertical integration relatively more attractive.

Most importantly, the analysis also suggests an important linkage to the law of contracts. It implies that any legal doctrines that help to reduce the uncertainties surrounding a transaction may also help to reduce the governance costs of a relational contract. Legal doctrines may thus have important consequences for the manner in which transactions are organized more generally. A transaction will normally only be conducted through a relational contract if there is no other mode of organization with lower governance costs. If legal doctrines help to lower the governance costs of relational contracts, firms will be less likely to organize transactions internally. At the margin, the volume of transactions conducted through relational contracts will be greater, and the volume conducted through internal

[74]To be more precise, there is no reason to believe the extent of cooperation within a vertically integrated organization would decline in the same way that the cooperativeness of a relational agreement would decline as the environment became more uncertain.

organization will be smaller. The legal environment may thus have subtle, though important and pervasive, consequences for the way in which an economy is organized overall.

Indeed, the analysis suggests that the objective of reducing governance costs should be an important criterion in the construction of contract laws. It implies that opportunism increases the governance costs of relational contracts. To the extent that legal doctrines are poorly conceived and applied, therefore, they will increase the likelihood of opportunistic behavior and thus exacerbate governance problems. To the extent that legal doctrines are wisely conceived and applied, they will decrease the likelihood of opportunistic behavior and thus help to alleviate governance problems. In this respect, contract law may have a significant effect on the governance costs of relational agreements in general even if it has only a marginal effect on particular parties' propensities to behave opportunistically, since the benefits will be felt across a multitude of transactions and over a breadth of time.

Of course, sound normative conclusions will recognize that legal doctrines may not only serve to impede opportunism, they may also be used opportunistically themselves. Thus, the possibilities for opportunistic behavior should be evaluated in conjunction with the legal doctrines that might be used to impede them. And the analysis should be conscious of the practical difficulties of

interpreting and applying the rules. Legal doctrines will only succeed in diminishing the likelihood of opportunism and reducing governance costs if they can be applied in a reasonably clear and consistent fashion by judges and juries who are themselves boundedly rational.

IV. THE DOCTRINE OF IMPRACTICABILITY AND THE GOVERNANCE COSTS OF A RELATIONAL CONTRACT

The doctrine of impracticability will reduce the governance costs of relational contracts only if it decreases the likelihood of opportunistic behavior overall. In this regard, it is well to remember that impracticability is used principally as an affirmative defense to a complaint seeking specific performance or damages for a breach or an anticipated breach of contract. Its purpose is thus to relieve one of the parties to a contract from having to perform its contractual obligations.[75] Whether it is used to impede opportunism or to impede a legitimate complaint will depend as much on the justification for the complaint as on the

[75]A court could, of course, go beyond merely deciding whether to excuse performances and actually arbitrate the parties' dispute. Much of the commentary concerning the excuse doctrines contemplates this more active form of judicial intervention (see Gillette, *supra* note 7; Scott, *supra* note 7; Schwartz, *supra* note 14). The analysis here construes the doctrine of impracticability more narrowly. Thus, it contemplates the doctrine only as a means of excusing contractual performances.

justification for the excuse.

The basic principles of a relational contract are antithetical to legal intervention. When they enter into a relational contract, the parties commit themselves to resolving their own disputes by adapting their agreement to unforeseen contingencies as they arise. The need for litigation would itself suggest that one of them was behaving opportunistically, or at least in violation of the basic principles of party autonomy that otherwise defined the nature of their agreement.[76] There are two basic ways in which a party could behave opportunistically: 1) by refusing to agree to an adaptation in circumstances which called for one, or 2) by seeking an adaptation in circumstances which did not call for one.

Although the doctrine of impracticability might excuse a party from performing its contractual obligations, in theory it need not terminate the parties' relationship. In principle, the other party might still be able to induce the excused party's performance, but only by renegotiating -- or adapting -- the terms of their agreement. Thus, if a court applies the doctrine of impracticability, it effectively forces the parties to negotiate an

[76]The parties could, of course, have an honest disagreement about the interpretation of the contract. But it would be very difficult to distinguish an honest disagreement about the interpretation of the contract from an opportunistic interpretation of the contract.

adaptation to their agreement instead of enforcing performances.[77] Conversely, if a court declines to apply the doctrine, it enforces performances instead of forcing the parties to negotiate an adaptation to their agreement. If a court applies the doctrine, therefore, it may forestall the first type of opportunism at the risk of aiding the second, and if it declines to apply the doctrine it may forestall the second kind of opportunism at the risk of aiding the first.

For easy reference, we will refer to a court's mistaken application of the doctrine as a type I error. We will refer to a court's mistaken failure to apply the doctrine as a type II error.[78] In an ideal world, of course, there would be no such thing as opportunistic behavior and the probabilities of both types of errors would be zero. But in the world that we inhabit, the parties to a contract might not only behave opportunistically, they might also attempt to conceal it. A party might attempt to conceal its opportunism, for instance, by taking a bargaining position that

[77]This assumes, of course, that they still could negotiate an adaptation of their agreement. In some cases, this might not be true; in others, the parties might not be inclined to do so. The assumption is made primarily to simplify and facilitate the discussion.

[78]This follows Goetz and McChesney's treatment of judicial errors in antitrust cases. See Charles J. Goetz & Fred S. McChesney, Antitrust Law: Interpretation And Implementation 67-69 (1998).

effectively precluded any kind of acceptable adaptation to an agreement while at the same time denying that it was refusing to adapt, or by claiming that the circumstances called for a particular adaptation when it knew they did not.

The availability of an impracticability defense, therefore, would not necessarily reduce the probability of opportunism overall. The change in the probability of opportunism overall would equal the probability that the doctrine would prevent opportunistic enforcements of contracts minus the probability that it would be used opportunistically itself to force adaptations. If the probability that the doctrine would prevent opportunistic enforcements was less than the probability that it would be used opportunistically itself, then it would actually increase the probability of opportunism overall. In that case, the impracticability doctrine might actually increase the governance costs of a relational contract. Of course, one would expect that even boundedly rational parties would then attempt to nullify the doctrine with an explicit waiver.[79] The fact that parties rarely do

[79]Some scholars may doubt whether the courts would respect the parties' attempts to waive the impracticability doctrine. Nonetheless, the language of the U.C.C., the commentary of legal scholars, and the case law all suggest that the doctrine of impracticability is waivable. As Norman Prance, *Commercial Impracticability: A Textual and Economic Analysis of Section 2-615 of the Uniform Commercial Code*, 19 Ind. L. Rev. 457, 483 (1986) notes, "A central axiom of Article 2 is that the parties are free, within certain limits, to structure their

attempt to waive the doctrine suggests that it probably does reduce the probability of opportunism overall.

If the doctrine of impracticability does reduce the probability of opportunism overall, it probably also generally reduces the governance costs associated with relational contracts. The economies could take a number of forms: 1) an increase in the expected longevity of relational agreements, 2) an increase in the cooperativeness of relational agreements, 3) an increase in the

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relationships as they see fit." Section 1-102(3) of the U.C.C. provides parties wide discretion to vary the terms of sales contracts in general, except where the U.C.C. otherwise prohibits, and except where obligations of good faith, diligence, reasonableness and care are concerned. Section 2-615, which states the doctrine of impracticability, is prefaced by the words, "Except in so far as a seller may have assumed a greater obligation…," and the exception is clarified in comment 8 to mean that "The provisions of this section are made subject to assumption of greater liability by agreement…". In general, courts have interpreted this to mean that the parties to a sales contract may "enlarge upon or supplant section 2-615" as they wish (see *Eastern Airlines, INC. v. McDonnell Douglas Corp.*, 532 F.2d. 957, 990 (1976) and *Interpetrol Bermuda Ltd. V. Kaiser Aluminum Intern.*, 719 F.2d. 992, 999 (1983). There is only one case of which the author is aware in which a court has ruled on a general waiver of section 2-615; in that case, the court held that clauses expressly waiving section 2-615 were "valid and enforceable in accordance with their terms." *Wheelabrator Frackville v. Morea Culm Services, Inc.*, No. 90-2962, 1990 U.S. Dist. LEXIS 7192, at *81. Of course, not all relational contracts would be governed by the U.C.C., but the same arguments in favor of respecting the parties' autonomy would still apply.

size of the investments made under relational agreements, 4) a decrease in expenditures on special arbitration procedures, and 5) a decrease in the volume of transactions conducted under less efficient governance structures, particularly those involving internal organization.

These economies would, of course, only come at the expense of the additional legal costs associated with the availability of an impracticability defense. On one view, legal intervention is merely a subsidized form of arbitration. As the foregoing discussion noted, however, there is a public good dimension to many kinds of legal intervention that often justifies the subsidy. That public good argument would appear to apply very well to the doctrine of impracticability. First of all, the doctrine of impracticability is only one possible defense to a complaint seeking contractual performance or damages. There are other defenses and the availability of the impracticability defense therefore probably has only a marginal impact on litigation costs overall. Second, the doctrine of impracticability potentially reduces the governance costs of all relational contracts, regardless of whether the parties ever need to use it.

Normative Implications

The analysis suggests that, subject to reasonable legal costs, the doctrine of impracticability should be devised so as to

minimize the likelihood of opportunism. To minimize the likelihood of opportunism, the doctrine would have to maximize the difference between the probability that it would forestall opportunistic enforcement and the probability that it would be used opportunistic itself. The probability that the doctrine would forestall opportunistic enforcement is inversely related to the probability that it would not forestall opportunistic enforcement, which we have defined as the probability of a type II error. Thus, if the doctrine was to be devised so as to minimize the likelihood of opportunism overall, it would have to minimize the sum of the probabilities of type I and type II errors.

The modern doctrine of impracticability has two requirements: a foreseeability requirement and an impracticability requirement. Consider the impracticability requirement first. Assume that the foreseeability requirement has been appropriately devised. This will allow us to focus all of our attention on the impracticability requirement.

It is not difficult to imagine various ways in which the impracticability requirement might be defined. At one extreme, impracticability could be defined so as to require that performance be strictly impossible. The doctrine of impracticability would then be equivalent to the doctrine of impossibility as it evolved

out of *Taylor v. Caldwell*.[80] In the context of a relational contract, it seems very likely that strict impossibility of performance would constitute legitimate grounds on which a party might seek adjustment. Since impossibility could probably be readily and accurately assessed, both the legal costs and the probability of type II errors would likely be very small.

The probability of type I errors, however, would likely be very high. It is not difficult to imagine circumstances in which performances would be physically possible but in which there might still be legitimate grounds for an adjustment. If the impracticability test required strict impossibility of performance, therefore, it would virtually eliminate type II errors, and probably economize on legal costs, but only at the expense of causing a high probability of type I errors. Thus, the doctrine of impracticability would rarely, if ever, be exploited for opportunistic purposes, but it would also do little to forestall opportunistic enforcements.

Consider an impracticability requirement at the other extreme: suppose that impracticability merely required the availability of some alternative superior to contractual performance (presumably one that would yield higher present discounted profits). If we assume that this requirement would also be satisfied by any excuse

[80] *Taylor v. Caldwell, supra* note 2.

stronger than that (such as strict impossibility) then it is clear that it would imply a very low probability of type I errors. Legal costs would also probably be low (it would be almost pointless to argue that the party trying to evade performance did not have a superior alternative). But there would likely be many circumstances in which parties would seek to evade contractual performances opportunistically. Thus, the probability of type II errors would be high. Under such an expansive interpretation of the impracticability requirement, therefore, the doctrine would rarely, if ever, allow opportunistic enforcement, but it would probably be used opportunistically itself with great frequency.

Finally, consider an impracticability requirement similar to that which is commonly employed -- one which requires "severe hardship" or "catastrophic consequences." Under the principles of a relational contract, a party would probably be justified in seeking adaptations which would ameliorate sufficiently severe hardships. Thus, the probability of type II errors would likely be small -- certainly much smaller than under an impracticability requirement as expansive as the one described above. Depending on how strictly the severe hardship requirement was interpreted, however, there would likely be a significant probability of type I errors. Circumstances far short of severe hardship might well call for adaptations. Nonetheless, the probability of type I errors would likely be much smaller than under an impracticability test

which required strict impossibility.

It seems reasonable to surmise, therefore, that some version of a “severe hardship” impracticability requirement would probably achieve the greatest reduction in opportunism overall. It would certainly avoid the high probability of type I errors that would be observed under a narrow impracticability requirement and the high probability of type II errors that would be observed under an expansive impracticability requirement. It might, however, imply relatively high legal costs, particularly if the courts' interpretations of "severe hardship" or "catastrophic consequences" were unclear or inconsistent. From a normative perspective, therefore, the best impracticability requirement would be one that was of an intermediate scope and could be applied clearly and consistently.

Now assume that the impracticability requirement has been appropriately devised, and focus on alternative ways in which the foreseeability requirement might be defined. The most expansive definition of the foreseeability requirement would make it nonexistent. Thus, the doctrine of impracticability would have only an impracticability requirement. This would almost surely be problematic. It would virtually eliminate the probability of type II errors, since excuses would be freely granted, but it would also cause the probability of type I errors to be extremely high. A party's invocation of the impracticability doctrine in the face of

circumstances that were easily foreseeable would almost always be opportunistic. A foreseeability requirement of some kind would thus be necessary to provide the parties with at least minimal incentives to foresee impracticability problems and avoid them if at all possible.

Consider therefore a "subjective" foreseeability requirement -- that is, one that simply required a party to show that the problematic circumstances were unforeseen, regardless of whether they were in any sense unforeseeable. This would likely cause a low probability of type II errors, but, because it would be difficult for one party to show that the other did in fact foresee a particular set of circumstances, it would also likely cause a high probability of type I errors, and would likely result in high legal costs. Indeed, under a subjective foreseeability requirement, both parties would actually have an incentive not to foresee problematic circumstances. This might then place them in a position to use the impracticability doctrine at some later date. Such a use of the doctrine, however, would merely constitute a form of planned opportunism.

Finally, consider an "objective" foreseeability requirement -- that is, one that required a party to show that it did not foresee the problematic circumstances, and that it was reasonable for the party not to have foreseen them. The difficulty of establishing the reasonableness of a party's oversights would likely make the

probability of type II errors greater than under a subjective test, but not necessarily by a wide margin. The probability of type I errors, on the other hand, would likely be much lower. There would certainly be much less distortion of the parties' incentives to foresee impracticability problems, if there was indeed any at all. And if an objective test was applied in a reasonably clear and consistent fashion, it would likely result in fewer impracticability cases going to trial and hence lower litigation costs as well.

It also seems reasonable to surmise, therefore, that an objective foreseeability test would help to achieve the greatest reduction in opportunism overall. Of course, an effective test would have to be consistent with the cognitive limitations of the judges and juries that applied it. The simpler and clearer the criteria upon which the foreseeability test was based, the greater the likelihood that it would be clearly and consistently applied.

Routines, Heuristics, and the Foreseeability Test

The use of routines and heuristics to conceptualize the parties' behavior suggests a simple and clear set of criteria upon which to base an objective foreseeability test. If the parties' behavior may generally be described in terms of routines and heuristics, then the manner in which they generate their

expectations during the negotiation stage of an agreement may also be described in terms of routines and heuristics. From a behavioral perspective, the parties to a dispute would only have been able to foresee particular contingencies if their routines and heuristics had allowed them to.

The reasonableness of a party's oversights would be a factual matter, but not one necessarily requiring any detailed investigation of the routines and heuristics that a party actually employed. Rather than investigating the source of a party's oversights, the inquiry could focus on 1) determining what kinds of routines and heuristics would have been reasonable in the circumstances in which the contract was drafted -- eg) what kind of personnel should have been assigned to negotiating and drafting the agreement, what kind of legal advice should have been sought, whether industry experts should have been consulted, and if so, of what caliber and experience, etc., and 2) determining whether the contingencies would likely have been foreseen if reasonable routines and heuristics had been employed -- eg) would sufficiently experienced personnel have expected certain types of problems, would an industry expert likely have warned the firm about certain risks, etc.

This might seem to come very close to suggesting that standard industry practices and customs should be used to establish the reasonableness of the parties' oversights. But that would only be

true if the practices and customs were themselves reasonable. At any point in time, standard industry practices and customs might lag well behind the "cutting edge" practices of industry leaders or firms in other industries -- so far behind that a fact-finder could consider them unreasonable. Indeed, even if there was no lag, a fact-finder might still consider them unreasonable merely in light of common sense. Although an objective test based on the parties' routines and heuristics would undoubtedly place considerable weight on evidence about standard industry practices and customs, it would hardly make them dispositive.

Indeed, this use of routines and heuristics would not be inconsistent with the kind of cost-benefit calculations characteristic of the conventional law and economics approach. If a marginal expenditure of a few thousand dollars on some readily available expert advice might have prevented catastrophic losses in a multi-million dollar contract, one might reasonably conclude that it should have been incurred. Of course, a boundedly rational party might only have had vague apprehensions about the risks of such a catastrophe, and might thus have been unable to contemplate the expected marginal benefits with any accuracy, but if the discrepancy was sufficiently large, the party’s reasonableness might still be brought into doubt.

In this sense, the courts could themselves use cost-benefit calculations as a heuristic device. Indeed, the use of cost-

benefit calculations generally depends upon the user having the ability to conceive of the alternatives against which the calculations might be applied. The use of routines and heuristics to conceptualize the manner in which parties generate their expectations would provide the courts with a very practical and concrete way of conceiving of the parties' alternatives. But this would not preclude them from using other methods or heuristics to reach their conclusions, either.

Modern Applications

This essay does not purport to present a positive theory about the doctrine of impracticability. Indeed, the courts' interpretations of the doctrine would seem to defy any kind of coherent positive analysis.[81] The essay's normative prescriptions are nonetheless broadly consistent with the way the doctrine has been applied in some important recent cases. This is significant because it implies that the normative prescriptions are at least "feasible" in the sense that they could be followed without the need for any radical departure from the precedents.

[81]Schwartz, *supra* note 14, provides a very general positive analysis that purports to identify necessary conditions for judicial intervention and show that they are seldom satisfied in relational contexts.

Eastern Airlines v. Gulf Oil Corp.[82]

This case originated in a complaint by Eastern seeking to enforce Gulf's performance under a long-term contract in which Gulf was obligated to supply Eastern with jet fuel. Gulf responded to Eastern's complaint by asserting, among other defenses, that the contract was commercially impracticable under the U.C.C. §2-615. The case is especially relevant in view of the longevity of the parties' relationship. Indeed, the court's opinion acknowledged that the dispute arose only under "the most recent contract between the parties" and involved "the threatened disruption of ...[their]... historic relationship,"[83] which had existed for several decades.

Gulf's impracticability defense was based on the argument that it had not foreseen the "two-tier" pricing scheme that the Federal Government imposed on the domestic market for crude oil subsequent to the OPEC oil embargo in 1973-74, and that the price controls caused such a wide divergence between the price that it had to pay for crude oil and the price it received for its fuel under the contract's escalator index that its performance became commercially impracticable. The court rejected Gulf's argument, however, both on the grounds that it failed to show impracticability and on the

[82]*Eastern Airlines v. Gulf Oil Corp. 415 F.Supp. 429 (1975).*

[83]*Id*. at 431.

grounds that the circumstances that gave rise to the dispute were reasonably foreseeable.

The court interpreted the impracticability requirement strictly, noting that a "mere showing of unprofitability, without more, will not excuse the performance of a contract."[84] It also appeared to apply an objective version of the foreseeability test, noting that "even if Gulf had established great hardship ... [it] would not prevail because the events associated with the so-called energy crisis were reasonably foreseeable at the time the contract was executed."[85] Indeed, in support of this finding, the court observed that "even those outside the oil industry were aware of the possibilities,"[86] and provided an illustrative quote from Eastern's principal contract negotiator.

Iowa Elec. Light And Power Co. v. Atlas Corp.[87]

This case originated in a complaint by Iowa Electric (IE) in part seeking Atlas's performance of its obligation to supply IE with uranium concentrate under a contract executed in 1973. Atlas

[84]*Id*. at 438.

[85]*Id*. at 441.

[86]*Id*. at 442.

[87]*Iowa Elec. Light And Power Co. v. Atlas Corp.*, 467 F.Supp. 129 (1978), overruled on jurisdictional grounds, 603 F.2d 1301 (1979).

responded to the complaint by invoking the doctrine of impracticability, claiming that unforeseen contingencies had resulted in drastic cost increases which should have excused its performance and warranted an adjustment of the contract price. IE claimed, however, that the instability in the uranium market was one reason it had sought to insure that it would have access to uranium supplies at the 1973 price.

Atlas based its impracticability defense on the argument that a number of unforeseen circumstances, including the OPEC oil embargo, federal environmental and occupational safety regulations, inflated factor prices, and unfavorable market conditions, all combined to dramatically increase its costs. The court initially rejected Atlas's defense on the grounds that it had "failed to bear the burden...to prove which and how much of the increases were reasonably unforeseen and not, in part, a function of its own actions."[88] The court subsequently allowed Atlas to clarify the record by submitting more precise cost calculations, but it declined to alter its judgment. Using Atlas's new information, the court attributed a 52.2 percent cost increase to circumstances that Atlas had not foreseen and that had not been a function of its own actions, and estimated Atlas's total loss at about $2,673,125. It ruled, however, that Atlas was not entitled to discharge or

[88] *Id*. at 132-133.

adjustment as "the absolute losses and percentage of increase do not warrant so drastic a remedy."[89]

The court justified its strict interpretation of the impracticability requirement by noting that the "mere fact that performance has become economically onerous is not sufficient to excuse performance," and that "increases of 50-58 percent generally have not been recognized as a basis for excusing or adjusting contractual obligations."[90] Although the court's final decision did not touch on the foreseeability requirement, its initial decision had clearly relied on an objective version of the foreseeability test. Indeed, the court found that "prior to the contract being signed there was good reason to anticipate rising costs and drastically increased expenditures for environmental and safety equipment and procedures,"[91] and it cited a November 14, 1972 Wall Street Journal article which had forecast uranium price increases.

Aluminum Co. of America v. Essex Group, Inc.[92]

This case originated in a suit by Aluminum Co. (Alcoa) seeking

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[89] *Id.* at 140.

[90] *Id.* at 140.

[91] *Id.* at 135.

[92] *Aluminum Co. of America v. Essex Group, Inc.*, 499 F.Supp. 53 (1980).

an adjustment of its contract with Essex. In this regard, the case was somewhat unusual and outside the scope of the normative prescriptions offered here. Alcoa's suit was obviously a preferred alternative to simply refusing to perform and awaiting a suit by Essex. Under the contract Alcoa was obligated to convert alumina supplied by Essex into aluminum, which was then to be conveyed back to Essex. The contract was executed in 1967 and was to run until 1983, with Essex having the option to extend it to 1988. Alcoa's justifications for the suit were based on a number of common law excuse doctrines, including the doctrine of commercial impracticability.

Alcoa's impracticability case was based on the argument that unforeseen oil price increases in the wake of the OPEC oil embargo and unanticipated pollution control cost increases caused its production costs to rise more rapidly than the price it received for its aluminum, which was indexed under the contract. Indeed, during the period in question, the market price of aluminum rose even faster than Alcoa's production costs, and Essex took advantage of the discrepancy by reselling millions of pounds of aluminum for an enormous profit. Essex's gains were Alcoa's losses, and the court found that without any adjustments to the contract Alcoa stood to lose in excess of $75,000,000 (presumably in 1979 or 1980 dollars). This prospective loss was the basis for Alcoa's claim that its performance would have been impracticable.

The court ruled that both the foreseeability and the impracticability requirements had been met. Although it acknowledged that Alcoa had developed the indexing system, it noted that Alcoa had taken the care to examine the way the index performed against the past record of aluminum prices and had found that its performance fluctuated within a narrow range. It also noted that in constructing the index Alcoa had drawn on the expertise of Alan Greenspan, who was then a leading economic forecaster and is now, of course, the Chairman of the Board of Governors of the Federal Reserve. And on a more general level, the court noted that[93]

> Essex and Alcoa are huge industrial enterprises. The management of each is highly trained and highly responsible. The corporate officers have access to and use professional personnel including lawyers, accountants, economists and engineers. The contract was drafted by sophisticated, responsible businessmen who were intensely conscious of the risks inherent in long-term contracts and who plainly sought to limit the risks of their undertaking.

[93] *Id*. at 68.

As far as the impracticability requirement was concerned, the court noted that the standard had evolved from one of impossibility of performance to one that "denotes an impediment to performance lying between impossibility and impracticability"[94] in the common sense of the word. It ruled that the increase in Alcoa's costs was severe enough to warrant relief under such a standard. The court found that, even based on conservative predictions, Alcoa stood to lose at least $60,000,000 over the life of the contract (again, presumably in 1979 or 1980 dollars). Although it did not discuss Essex's ethical position in the dispute, the court did note that "[the] margin of profit shows the tremendous advantage which Essex enjoys under the contract" and that "[a] significant fraction of Essex's advantage is directly attributable to the corresponding ...losses Alcoa suffers."[95] This might be interpreted as an insinuation that Essex was behaving opportunistically.

Some Final Observations

These cases are at least broadly consistent with the normative prescriptions that have been offered in this essay. One reason the court rejected Gulf's impracticability defense in *Eastern v. Gulf* was that the oil price increases which Gulf argued were unforeseeable had been foreseen even by outsiders to the industry.

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[94] *Id*. at 72.

[95] *Id*. at 59.

The clear implication is that Gulf's own contract negotiators should have been able to foresee the risks. In *Iowa Electric v. Atlas* the court pointed to direct evidence that at least some of Atlas's cost increases should have been foreseen. And in *Alcoa v. Essex* the court accepted Alcoa's impracticability argument on the grounds that Alcoa had used sophisticated personnel and a highly esteemed forecaster to construct the price index for its aluminum. The court thus ruled that the failure of the price index was reasonably unforeseen on the basis of the practices that Alcoa had used in the process of negotiating and drafting the contract.

The courts also interpreted the impracticability requirement strictly in all three cases, though not strictly enough as to all but deny excuse in any case in which performance was still physically possible. Although the court's decision was not based on the impracticability test in *Eastern v. Gulf*, the court did indicate that impracticability required a showing of something more than mere unprofitability. And in *Iowa Electric v. Atlas* the court denied Atlas relief on the grounds that cost increases of 50-58 percent and losses of $2,673,125 were not severe enough to meet the impracticability requirement. Indeed, the impracticability requirement was met only in *Alcoa v. Essex* -- and only there on the basis of projected losses of at least $60,000,000.

Of the three cases, *Alcoa* has probably been the subject of the

most commentary, and much of it has been critical.[96] In *Alcoa* the court chose to modify the contract instead of simply excusing Alcoa's performance. In so doing it went beyond the normative prescriptions offered here. The analysis here only justifies the use of the impracticability doctrine to excuse a party's performance, not to modify a contract. The purpose of allowing the courts to excuse performances is to forestall opportunism and at the same time encourage the parties to adjust their performances autonomously through bilateral negotiations. On this reasoning, if Essex had known that Alcoa's performance would be excused, the parties probably would have been able to adapt their agreement without any legal intervention. Indeed, it is interesting to note that Alcoa and Essex actually negotiated a modification of their agreement contingent on Alcoa being excused before the court reached its verdict. The court's remedy only partially implemented their proposed modification.

All of these cases involved contracts that could be construed as "relational" in the sense defined here. It is not clear, however, that any of them involved particularly high governance costs. The analysis here implies that the governance costs of a relational contract will be particularly high only in highly

[96]Schwartz, *supra* note 14, at 293-94, for instance, describes the case as "unsatisfactory" and claims the opinion has not been followed. See also Scott, *supra* note 7, at 2051; Sykes, *supra note 10,* at 83.

uncertain environments. It is not clear whether the environments in which the transactions at the center of these cases were conducted were sufficiently uncertain to cause particularly high governance costs. That is irrelevant, however, to the benefits that might be derived from the appropriate application of the impracticability doctrine. The point of the analysis is not that the appropriate application of the doctrine in any particular contractual dispute will reduce the governance costs associated with that contract. Rather, it is that the appropriate application of the doctrine in general will minimize the risks of opportunism and reduce the strategic uncertainties associated with relational contracts overall. This will reduce the governance costs of all relational contracts, especially those in which governance problems are severe.

V. AN OVERVIEW OF SOME OF THE ETHICAL ISSUES

The law of contracts lies at the heart of capitalist economic institutions. It is thus intimately connected to the broader moral values that both help to define and to sustain our entire social and economic system. But since it also regulates the conduct of individual transactions, it is equally important to the moral character of our day-to-day affairs. Unfortunately, there is no theoretical framework broad enough to encompass both the economic and the ethical dimensions of contracting problems, even though

they are interlocking pieces of the same puzzle.[97] This essay has approached relational contracting problems from primarily an economic perspective, and it has suggested that the doctrine of impracticability may serve a particular economic purpose. It would be instructive, therefore, to contemplate whether the normative prescriptions might conflict with any of the moral values imbedded

[97]This is in some ways ironic, because economics has deep roots in moral philosophy. Indeed, Adam Smith, who is usually considered the first professional economist, was actually a professor of moral philosophy and may rightly be considered as much of a philosopher as an economist. See Patricia H. Werhane, Adam Smith And His Legacy For Modern Capitalism (1991) for a study of Adam Smith as a moral philosopher. At some point, most professional economists became predominantly interested in a social scientific approach to economic phenomena and economics largely lost its connections to moral philosophy. The economics profession has, however, recently shown renewed interest in the ethical dimensions of economic problems. Indeed, in a classic essay, Amartya Sen has made a compelling argument that the rationality assumptions of the conventional economic approach are inconsistent with the kind of moral choices that people commonly make, and hence that some broader conception of human motivation, which incorporates a role for moral deliberation, is essential to coherent theorizing (see Amartya K. Sen, *Rational Fools: A Critique of the Behavioural Foundations of Economic Theory*, in Sen, Choice, Welfare and Measurement 84 (1982)). Unfortunately, there is as yet no general theoretical framework which embodies both peoples' economic and ethical motivations. For a useful survey of scholarship that explores the connections between ethics and economics, see Daniel M. Hausman & Michael S. McPherson, *Taking Rights Seriously: Economics and Contemporary Moral Philosophy*, 31 J. Econ. Lit. 671 (1993).

in the contract laws.

It is only appropriate, however, to begin by making some disclaimers. The discussion here does not attempt to understand relational contracting or the impracticability doctrine from the perspectives of contemporary moral theories. Its more limited purpose is to address some of the practical moral and ethical concerns that have been raised, or might be raised, by those who have studied relational contracting problems and the doctrine of impracticability.

Any analysis of ethical issues must surmount a number of difficulties. For one thing, it is very difficult to define precisely what our moral values are, and to distinguish them from the moral values held by people in other societies and cultures.[98] Indeed, it is not even clear whether our moral values are always consistent.[99] In a given set of circumstances, for instance, the

[98]One survey study of American and Soviet attitudes towards free markets, for instance, found that American and Soviet respondents were "basically similar in some very important dimensions: in their attitudes toward fairness, income inequality, and incentives and in their understanding of the working of markets." Robert J. Shiller, et al., *Popular Attitudes Toward Free Markets: The Soviet Union and the United States Compared*, 81 Amer. Econ. Rev. 385, 385 (1991).

[99]This creates the potential for moral dilemmas. See Joanne B. Ciulla, *Business Ethics as Moral Imagination*, in R. Edward Freeman, ed., Business Ethics: The State Of The Art (1991). Ciulla argues that moral dilemmas may be addressed only by cultivating the moral imagination. Regardless of whether this is true, they will

value that we place on the principle of desert might well clash with the value that we place on distributional equity. Moreover, ethical issues are highly emotive, and our ethical assessments of certain outcomes may be based as much on inarticulable feelings as on conscious deliberations.[100] Finally, our ethical judgments may be "situational" -- that is, they may be deeply rooted in the circumstances of individual cases and thus resist generalization.[101]

All of these difficulties, and no doubt others as well, impede our capacities for moral analysis. But the last is particularly germane to relational contracting problems. Relational contracting is a relatively recent development in the evolution of contract law. The moral and ethical values that sustain the classical contracting paradigm may provide an inappropriate basis for an ethical assessment of the role that legal doctrines play in relational contracts. It is especially important, therefore, to

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clearly not be easily susceptible to analytic treatments.

[100]Robert Solomon, for instance, argues that emotions have a natural and central place in all moral judgments. See Robert C. Solomon, A Passion For Justice: Emotions and the Origins of the Social Contract (1990).

[101]See Joseph Fletcher, Situation Ethics: The New Morality (1966) for the classic argument. See Kenneth E. Goodpaster, *Ethical Imperatives and Corporate Leadership* in R. Edward Freeman, Business Ethics: The State of The Art (1991) for an argument that a corporation's managers must understand the specific circumstances in which its employees must act if it is to improve upon its ethical standards.

approach relational contracting problems with their unique character and circumstances clearly in mind. These may not only require fresh ethical perspectives on established legal doctrines, they may also require that we reconsider some of the broader moral values that lie at the very heart of contract law.

The conceptualization of relational contracting problems in this essay has implied a set of circumstances with distinctive ethical overtones. The parties' inclinations to behave opportunistically reflect ethical shortcomings that may impede their abilities to cooperate, in spite of the potential mutual gains. The role that has been prescribed for the doctrine of impracticability is to forestall such opportunism and thus help to alleviate the costs that would otherwise result from these ethical shortcomings. Some of the ethical implications of the analysis are thus deeply imbedded in the conceptualization of the circumstances. Indeed, in that respect the analysis suggests that the impracticability doctrine may serve as a substitute for good business ethics. On the other hand, it also suggests that good business ethics might yield significant economic benefits.

Contract as a Form of Individual Expression

Classical contract analysis and neoclassical economics both reflect the great value that has traditionally been placed on the principles of economic liberty and voluntary exchange. They are intimately connected to the notion that the freedom to contract is

an inviolable form of self-expression and the common moral disapprobation for those who seek to be excused from the performance of obligations that were voluntarily incurred. Under a theory of contract as a "mechanism for autonomous individual expression,"[102] a "contract's moral force derives from the fact of its voluntary agreement; when I enter freely into an agreement, I am bound by its terms, whatever they may be."[103] The classical conception of contracts is therefore inherently antagonistic towards the idea of contractual excuse. Indeed, those who subscribe to the classical model tend to view relational contracts as a subspecies of contracts somewhere within the "more nebulous realm of fiduciary relations."[104]

That may, indeed, be true, but it is not at all clear that relational contracting practices will undermine the principles of economic liberty and voluntary exchange, or that they are inconsistent with the notion of contract as a form of individual expression, even if, as has been proposed here, they allow for the possibility of contractual excuse. The decision to enter into a relational contract is made freely and voluntarily, and there is no

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[102]Gillette, *supra* note 7, at 571.

[103]M. Sandel, Liberalism And The Limits Of Justice 105-113 (1982) quoted in Gillette, *supra* note 7, at 571.

[104]Gillette, *supra* note 7, at 571.

reason why that decision cannot itself be interpreted as a form of individual expression. On that view, the parties to a relational contract commit themselves to an agreement in which they may have both a right and an obligation to adapt their performances in the face of new circumstances. Once they have voluntarily made such an agreement, they should be bound by its terms, including those requiring adaptations, no less than they would be in a classical contract. The doctrine of impracticability would simply force them to honor their commitments in circumstances that might otherwise induce them to behave opportunistically.

From this perspective, relational contracts serve to expand the range of economic liberties and the freedom to engage in voluntary exchange. It hardly matters whether they more closely resemble fiduciary relationships or classical contracts. The important point is that they probably allow for a wider variety of individual expressions than partnerships and classical contracts would in their absence. Moreover, the parties' commitments are no less binding than those made under other contract forms; they are simply somewhat different. And though it might appear that the doctrine of impracticability would allow the courts to intervene in an otherwise autonomous relationship, it should be remembered that the doctrine is basically a defense to a complaint seeking specific performance. When a court applies the doctrine, therefore, at least as it has been prescribed here, and declines to enforce

performances, it forces the parties to resolve their dispute themselves, and thus interferes with their autonomy no more than it would have if it had enforced their performances.

Indeed, the doctrine of impracticability is merely a default rule. It is not immutable, like the duty to act in good faith, and so there is no reason why parties could not simply nullify it with an explicit contractual waiver. When parties enter into a contract without waiving it, therefore, they implicitly express their intentions to be bound by its terms.[105] This is especially true of the kind of relational contracts that have been discussed here. These are generally executed by large corporate entities that are managed by sophisticated and experienced business personnel and have direct access to considerable legal and economic expertise. Although there are no doubt limits on their rationality, they must

[105]See Randy E. Barnett, *The Sound of Silence: Default Rules and Contractual Consent*, 78 Va. L. Rev. 821, 864-5 (1982) for an articulation of a consent theory in which the parties manifest an intention to be legally bound by contract default rules simply by invoking the system of legal enforcement. The consent theory is fully consistent with the conventional law and economics view, and has been used in a number of important law and economics studies – see Ian Ayres and Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 98 Yale L.J. 87 (1989); Jason Johnston, *Strategic Bargaining and the Economic Theory of Contract Default Rules*, 100 Yale L. J. 615 (1990); Ian Ayres and Robert Gertner, *Strategic Contractual Inefficiency and the Optimal Choice of Legal Rules*, 101 Yale L.J. 729 (1992).

understand the legal consequences of executing a contract without waiving the doctrine of impracticability, and they must also understand in principle how easily such a rule could be waived. The fact that they do not attempt to waive it can only be interpreted as an expression of their intentions.

The Internal Norms and Ethics of a Relational Contract

A relational contract tends to generate its own internal norms and ethics.[106] Indeed, these may well be essential to its success. According to Scott, for instance, the norms of behavior and interpersonal ethics that develop between the employees of transacting corporations can "help to solidify the relationship and permit it to survive the myopia of individual decisionmakers."[107] These may thus serve as an alternative means of reducing the strategic uncertainties otherwise inherent in a relational agreement. Indeed, Scott conceives of excuse doctrines largely as substitutes for extralegal means of control.[108] We should, therefore, consider the possibility that active use of the impracticability doctrine would simply impede the development of the internal norms and ethics that might otherwise serve a similar

[106]See the discussion in Scott, *supra* note 7, at 2040-2042.

[107]*Id*. at 2042.

[108]*Id*. at 2051.

function, but perhaps serve it better.

On this matter, however, our analysis must remain speculative. The theoretical framework of this essay assumes that the doctrine of impracticability may have a useful role in forestalling opportunism. Thus it implicitly assumes that any adverse effects the doctrine would have on the internal norms and ethics of a relational contract would be more than offset by its own benefits. A truly rigorous assessment of the issue could only be undertaken in a framework that was flexible enough to incorporate the internal norms and ethics explicitly into its analysis. As the foregoing discussion indicates, there is as yet no such framework. There are, however, good reasons to doubt whether the "interplay between legal and extralegal methods"[109] of control argues against the normative prescriptions for the doctrine of impracticability that have been suggested here.

For one thing, the vast majority of laws are probably complements rather than substitutes to the moral and ethical values that also serve to inhibit dysfunctional behavior. Most criminal laws, for instance, almost certainly complement the moral proscriptions that inhibit most people from engaging in criminal acts. One never hears politicians proclaiming that they will repeal the criminal laws to reduce the crime rate. Of course, contract laws address very different kinds of behavior and may

[109] *Id*.

therefore interact with our moral and ethical values in a completely different way. But other contract doctrines, such as the duty to act in good faith, seem to embrace ethical principles, and we do not worry whether they will in any way diminish the ethical standards that also might help to encourage desirable behavior. There is little reason to believe that the doctrine of impracticability is not also a complement rather than a substitute for the internal norms and ethics that otherwise serve to forestall opportunism under a relational contract.

Moreover, it bears repeating that the doctrine of impracticability is only a default rule. On this view, if the parties felt that it would impede the internal norms and ethics of their relationship, they could simply contract around it. The doctrine would then generally only apply when any adverse effects it was expected to have on the relationship would be more than offset by its expected benefits. If the parties could be relied upon to make such assessments wisely, then the availability of the doctrine as a default rule would still minimize the incidence of opportunism overall. Of course, since the parties are boundedly rational they might not always make those assessments wisely, and so the doctrine might apply to some contracts in which it was detrimental. But one would expect that the accumulation of commercial experience and wisdom would probably soon lead to the doctrine being waived as a matter of standard business practice.

Excuse and Fairness

From an ethical perspective, the "fairness" of the outcome should be an important goal in the adjudication of any contractual dispute. It is important to consider, therefore, whether the doctrine of impracticability is consistent with the delicate balance between the principles of distributional equity and desert that seems to comprise our notion of "fairness." Not all legal scholars would agree that it is, even if they accept the proposition that the parties to a contract are boundedly rational. As Gillette puts it,[110]

> The bounded rationality model assumes actors engage in a rational decision-making process that satisfies their concerns for subsequent intervening events, despite their inability to make precise probabilistic calculations. Thus, an actor who has rationally determined to exclude a specific risk, or not to consider further the possibility of an intervening event, is not simply an innocent victim of circumstances....An actor that has reasoned that additional investments in discovery and consideration of risks are not worth the

[110]Gillette, *supra* note 7, at 581.

> effort seems to deserve the consequences of that decision.

According to Gillette, therefore, the party that is "disadvantaged" by some unforeseen contingency deserves the loss.[111] But it is not clear that Gillette's argument applies to parties who form relational contracts as they have been conceived here. As they have been conceived here, relational contracts provide a means of coping with unforeseen contingencies as they arise, rather than attempting to plan for them in advance. Thus, when parties form a relational contract they do so with the understanding that their agreement will be adapted to new circumstances and unique situations as they unfold. This is corroborated by the fact that they rarely, if ever, contract around the doctrine of impracticability. It seems clear, therefore, that they do not intend the consequences of their decisions to be to have to passively accept their losses in the event of some catastrophic unforeseen contingency. There is thus no reason why the courts should force them to accept such losses by enforcing their performances.

This essay has presented an analytical framework in which the doctrine of impracticability derives its usefulness from its capacity to reduce the governance costs of relational contracts by reducing the strategic uncertainties associated with parties'

[111] *Id*. at 582.

propensities to behave opportunistically. The term "opportunism" obviously has connotations of unethical behavior. There is no sense in which the gains that a party earns from behaving opportunistically are deserved. In fact, we would normally think such opportunism inconsistent with the principles of honesty and fair dealing that provide the bedrock for good business ethics. To the extent that the doctrine of impracticability serves to forestall opportunism, therefore, it might also help to raise the ethical standards of parties' business dealings. Indeed, since good business ethics may well be good for business in general,[112] the doctrine might yield economic benefits beyond those suggested by the analytical framework alone.

VI. CONCLUSIONS

This essay has analyzed the doctrine of impracticability from a behavioral economics perspective. It has attempted to show that the doctrine may reduce the governance costs of relational contracts by curbing parties' propensities to behave opportunistically. To that end, the analysis suggests that the doctrine should employ a severe hardship criterion for the impracticability test and an objective foreseeability test. To the

[112]This is certainly the view of most business ethicists. See, for instance, Robert Solomon, Ethics and Excellence: Cooperation and Integrity in Business (1992).

extent the doctrine does reduce the likelihood of opportunism overall, it will 1) increase the longevity of relational contracts, 2) improve the cooperativeness of relational contracts, 3) increase the size of investments under relational contracts, 4) decrease expenditures on special arbitration procedures, and 5) decrease the volume of the transactions conducted under less efficient governance structures, in particular, administrative hierarchies. All of these would yield direct economic benefits. There might be other benefits as well, though these are beyond the scope of the analysis.

The normative prescriptions are meant to be tentative and provocative. Further research on relational contracting practices and the legal doctrines that apply to them will undoubtedly prove of great value. This essay does not present any empirical evidence in support of its analytic results. That does not, however, mean that it is completely without any empirical basis. The analysis is vested in a theoretical framework that has been applied with great success in a number of empirical studies and has been employed to clarify and communicate important transitions in the history of the modern business corporation.[113] Thus, the analytic results cohere with a large and systematic body of empirical evidence. Nonetheless, further empirical research may prove particularly valuable. Empirical studies that attempt to probe the

[113]See Shelanski & Klein, *supra* note 62; Chandler, *supra* note 63.

interconnections between legal doctrines and the microanalytics of individual transactions may prove especially insightful. This suggests a challenging research agenda, but one that promises great rewards.