

The Economics of Governance

Oliver E. Williamson

<owilliam@haas.Berkeley.edu>

University of California, Berkeley

January 2005

The Economics of Governance

Oliver E. Williamson*

The economics of governance is an effort to implement the “study of good order and workable arrangements,”¹ where good order includes both spontaneous order in the market, which is a venerated tradition in economics (Smith, 1776; Hayek, 1945; Arrow and Debreu, 1954), and intentional order, of a “conscious, deliberate, purposeful” kind (Barnard, 1938, p. 9). Also, I interpret workable arrangements to mean feasible modes of organization, all of which are flawed in comparison with a hypothetical ideal (Dixit, 1996, pp. 4-9).² The object is to work out the efficiency logic for managing transactions by alternative modes of governance – principally spot markets, various long term contracts (hybrids), and hierarchies.

Interest among social scientists, economists included, in the study and practice of good order and workable arrangements has been steadily growing.³ In contrast with the orthodox lens of choice (prices and output, supply and demand), the economics of governance is a lens of contract construction, broadly in the spirit of James Buchanan’s observation that “mutuality of advantage from voluntary exchange ... is the most fundamental of all understandings in economics” (2001, p. 29).

The economics of governance, as herein described, is principally an exercise in bilateral private ordering, by which I mean that the immediate parties to an exchange are actively involved in the provision of good order and workable

arrangements. To be sure, the need for private ordering varies with the rules of the game as provided by the state. Distinctions between lawlessness where the state provides limited or unreliable protection for property and contract (Dixit, 2004) and lawfulness, where the state undertakes to protect property and enforce contracts in a principled way, are pertinent. The first of these applies mainly to primitive and transition economies. The second is commonly associated with Western democracies.

Recourse to private ordering under conditions of lawlessness is altogether understandable: given the absence of state support, the parties have no choice but to do their best to create their own bilateral or group mechanisms to support otherwise problematic exchange. But wherein does the need for private ordering arise if the state has created and enforces efficacious rules of law, as assumed by the “legal centralism” tradition?

Private ordering here resides in the inherent limitations of legal centralism. Albeit an analytical convenience, for both law and economics, to assume that “disputes require ‘access’ to a forum external to the original setting of the dispute [and that] remedies will be provided in some body of authoritative learning and dispensed by experts who operate under the auspices of the state” (Galanter, 1981, p. 1), the facts disclose otherwise. Most disputes, including those that under current rules could be brought to a court, are resolved by avoidance, self-help, and the like (Galanter, 1981, p. 2). That is because in “many instances the participants can devise more satisfactory solutions to their disputes than can

professionals constrained to apply general rules on the basis of limited knowledge of the dispute” (Galanter, 1981, p. 4).

The upshot is that private ordering is central to the performance of an economy whatever the conditions of lawfulness. Adaptation is taken to be the central problem of economic organization. Conditional on the attributes of the activities (transactions) to be organized, I focus on the comparative efficacy with which alternative modes of governance effect good order (adaptation) during the ex post contract implementation interval.

Section 1 sketches the background out of which the economics of governance works. Section 2 sets out the basic logic of efficient governance with respect to the puzzle of vertical integration and more generally. Microanalytic foundations – from law, economics, and organization theory – on which the economics of governance rests are examined in Section 3. Applications are addressed in Section 4. Issues of lawlessness are briefly discussed in Section 5. Concluding remarks follow.

1. Background

I begin with a sketch of the governance of ongoing contractual relations. The four conceptual cornerstones out of which the lawfulness branch of the economics of governance works are described next. I then turn to the crisis in public policy toward business during the 1960s that gave impetus to a rethinking of the purposes served by complex contract and economic organization.

As against simple market exchange, governance is predominantly concerned with ongoing contractual relations for which continuity of the

relationship is a source of value. Given that incomplete contracts need to be adapted to disturbances for which contractual provision was not made or was incorrectly made at the outset, continuity can and will benefit from a spirit of cooperation. But therein lays the rub: continuity can be put in jeopardy by defecting from the spirit of cooperation and reverting to the letter. Maladaptation to disturbances is where the main costs of governance reside.⁴

Taken by itself, the possibility of defection is bad news. But there is also an upside: contractual hazards, like other costs, invite mitigation – which is where the real challenge and analytical import of potential breakdown resides. Upon looking ahead and recognizing that possible breakdowns are in prospect, cost-effective private ordering mechanisms that have the purpose and effect of mitigating contractual hazards will be devised, thereby better to assure that mutual gains from trade are realized.

The 32-year coal supply contract between the Nevada Power Company and the Northwest Trading Company is an example. Out of awareness that disturbances could lead to conflict and possible breakdown, this contract provided in part that “In the event an inequitable condition occurs which adversely affects one Party, it shall then be the joint and equal responsibility of both parties to act promptly and in good faith to determine the action required to cure or adjust for the inequity and effectively implement such action.” It furthermore instructed “The Party claiming the inequity [to] include in its claim such information and data as may be reasonably necessary to substantiate the claim and shall freely and without delay furnish such other information and data

as the other Party reasonably may deem relevant and necessary. If the Parties cannot reach agreement within sixty (60) days the matter shall be submitted to arbitration.”

Plainly, the parties to this contract were aware that things could get out of alignment during contract execution and provided a framework for corrective action. Very general language notwithstanding, the parties were also hard-headed. The party requesting corrections was expected to provide supporting information and data to substantiate the request. And so as better to assure that conflicts would be resolved knowledgeably by a specialist in the industry, provision was made for arbitration in the event the parties could not reach agreement. Although it boggles the mind that “reasonably clever businessmen and lawyers cope with problems scholars might consider intractable” (Goldberg and Erickson, 1987, p. 369), evidently contract practitioners can and do design workable order-preserving mechanisms for adapting to disturbances in the service of mutual gains. Some scholars, moreover, had been forging the relevant concepts. The four conceptual cornerstones out of which the economics of governance works are governance, transaction costs, adaptation, and interdisciplinary social science.

Governance: The study of governance was prefigured by John R. Commons, who was one of the leaders of older style institutional economics in the U.S. Of the many good ideas that originated with Commons, none was more important to the economics of governance than his abiding interest in “going concerns.” As against the preoccupation of orthodoxy with simple market

exchange and the resource allocation paradigm (Reder, 1999), Commons observed that the continuity of an exchange relationship was often important, whereupon the problem of economic organization was reformulated as follows: “the ultimate unit of activity ... must contain in itself the three principles of conflict, mutuality, and order. This unit is a transaction” (Commons, 1932, p. 4). Commons thereafter recommended that “theories of economics center on transactions and working rules, on problems of organization, and on the ... [ways] the organization of activity is ... stabilized” (1950, p. 21).

A coherent theory of organization for implementing these novel ideas nevertheless eluded Commons and his followers – possibly because the concept of transaction cost had yet to surface and because of the primitive state of organization theory at the time.⁵ Such a fate notwithstanding, the Commons triple of conflict, mutuality, and order anchors the concept of governance as herein employed – in that governance is the means by which to infuse order, thereby to mitigate conflict and realize mutual gains. The transaction, moreover, is made the basic unit of analysis.

Transaction Costs: As Ronald Coase developed in his 1937 article on “The Nature of the Firm,” the standard assumption that transaction costs were zero presented neoclassical economics with a logical lapse. Thus whereas orthodoxy took the distribution of economic activity across firm and market organization as given, whereupon attention was focused on “the economic system as being coordinated by the price system” (1937, p. 387), firm and market are properly regarded as “alternative methods of coordinating production” (1937,

p. 388; emphasis added). Rather than take the distribution of economic activity as given, this should be derived. The 1937 paper thus took as its purpose “to bridge what appears to be a gap in economic theory ... We have to explain the basis on which, in practice, this choice between alternatives is effected” (Coase, 1937, p. 389, emphasis added).

Orthodoxy remained unmoved over the next 35 years, but pressures were mounting as interim developments in the market failure literature revealed that disregard for positive transaction costs was responsible for confusion over externalities and other puzzling practices. Upon reformulating the tort problem (or, more generally, the externality problem) in contractual terms, Coase showed in his 1960 paper on “The Problem of Social Cost” that the externality problem vanished if the logic of zero transaction costs was taken to completion. Plainly, provision for positive transaction costs would thereafter have to be made if externalities, and the study of complex contracting more generally, were to be accurately described and assessed.

Kenneth Arrow’s examination of “The Organization of Economic Activity: Issues Pertinent to the Choice of Market versus Non-market Allocation” (1969) likewise made a prominent place for transaction costs, both in general and with respect to vertical integration. The general argument is that “market failure is not absolute; it is better to consider a broader category, that of transaction costs, which in general impede and in particular cases completely block the formation of markets” (Arrow, 1969, p. 48). Arrow’s remarks about vertical integration are especially pertinent: “An incentive for vertical integration is replacement of the

costs of buying and selling on the market by the costs of intra-firm transfers; the existence of vertical integration may suggest that the costs of operating competitive markets are not zero, as is usually assumed by our theoretical analysis" (1969, p. 48; emphasis added).

The time was ripe for the concerted study of positive transaction costs, yet obstacles remained. For one thing, the concept of transaction costs lacked definition. Being a vague and malleable concept, transaction costs came to be invoked as an all-purpose explanation for puzzling practices, whereupon the concept of transaction cost acquired a "well-deserved bad name" (Fischer, 1977, p. 322). Relatedly, transaction cost is an expansive concept. Of the variety of ways in which transaction costs can manifest themselves (of which search cost was Coase's candidate),⁶ where does the main comparative institutional action reside?

Adaptation: The economics of governance locates the basic action in the differential capacities of alternative modes of governance to effect adaptation. Interestingly, both the economist Friedrich Hayek (1945) and the organization theorist Chester Barnard (1938) were in agreement that adaptation is the central problem of economic organization. Hayek (1945, pp. 526-527) focused on the adaptations of economic actors who adjust spontaneously to changes in the market. Upon looking "at the price system as ... a mechanism for communicating information," the marvel of the market resides in "how little the individual participants need to know to be able to take the right action." By contrast, Barnard featured coordinated adaptation among economic actors

working through administration (hierarchy). The latter is accomplished not spontaneously but in a “conscious, deliberate, purposeful” way with the use of administration (1938, p. 9).

In effect, the adaptations to which Hayek refers are autonomous adaptations accomplished in the market whereas the adaptations of concern to Barnard are consciously coordinated adaptations accomplished through the use of management within the firm. To the widely celebrated “marvel of the market” (Hayek) is now therefore joined the hitherto scorned “marvel of hierarchy” (Barnard).⁷ Because efficiency is the product of adaptive capacities of both kinds, an understanding and appreciation for both markets and hierarchies (rather than the more familiar dichotomy between markets or hierarchies) is needed. The firm for these purposes is described not as a production function (which is a technological construction) but as a governance structure (which is an organizational construction). And the market is described as an organizational alternative. The lens of contract, as against the lens of choice, is made the cutting edge.

Interdisciplinary Social Science: This is the last of the four cornerstones that I associate with the economics of governance. As discussed in Section 3, both organization theory and aspects of the law (especially contract law) bear importantly on the economics of governance. I merely observe here that doing interdisciplinary social science is demanding and that the teaching and research program in economics, organization theory, and operations research at the Graduate School of Industrial Administration, Carnegie-Mellon University during

the 1950s and 1960s helped to open the door to a disciplined approach to interdisciplinary social science.

To these four cornerstones I would add that the developing crisis in public policy toward business during the 1960s provided added impetus and urgency to the economics of governance. Victor Fuchs, in his forward to “Policy Issues and Research Opportunities in Industrial Organization,” pronounced that “all is not well in this once flourishing field” (1972, p. xv). Various reasons can be advanced, among which is that economic organization is much more complex than was widely appreciated. Coase’s explanation was that industrial organization had become an exercise in applied price theory (1972, pp. 60-62), to which Harold Demsetz’s observation that the neoclassical theory of the firm is not an all-purpose construction is also pertinent: It is a “mistake to confuse the firm of [neoclassical] economic theory with its real-world namesake. The chief mission of neoclassical economics is to understand how the price system coordinates the use of resources, not the inner workings of real firms” (1983, p. 377).

My prior studies of organization theory and my experience as Special Economic Assistant to the head of the Antitrust Division of the U.S. Department of Justice during 1966-67 resonated with these concerns. Thus although applied price theory was one useful lens, uncritical application of such reasoning led to a presumption that nonstandard and unfamiliar forms of contract and organization had monopoly purpose and effect – as witness the inhospitality tradition in antitrust, according to which nonstandard (complex) practices were interpreted

“not hospitably in the common law tradition, but inhospitably in the tradition of antitrust.”⁸ Such convoluted reasoning carried over to mergers as well, where Justice Stewart observed, in a dissenting opinion in 1966, that the “sole consistency that I can find in the [merger] litigation under Section 7 [is that] the Government always wins.”⁹ Failures to connect with the real purposes served by contract restrictions and the inner workings of real firms could often, evidently, have over-reaching consequences.

Confusion, moreover, also reigned in the regulatory area, in large measure because regulatory issues were treated in a one-sided way. Thus whereas there was an extensive literature on market failure, there was no mention of, much less a corresponding literature on, regulatory failure (Coase, 1964). Taken together, antitrust and regulatory policies toward business were careening out of control. The need for other perspectives, possibly of a comparative contractual kind, came knocking.

2. The Basic Logic

A stripped down version of the basic logic is set out here, first with reference to vertical integration, which would become the paradigm problem for the economics of governance, and thereafter by formulating the discriminating alignment hypothesis. Additional microanalytic supports on which the arguments rest are taken up in Section 3.

It is because economic organization is so complex (Simon, 1957b, p. 89; Wilson, 1999, p. 183) that there is a need to “keep it simple” (Solow, 2001, p.111). Choosing vertical integration as the specific phenomenon on which to

hone in was both a simplifying move and the obvious place to start. Not only was vertical integration (the make-or-buy decision) the puzzle to which Coase referred in his 1937 article, but it remained a puzzle, in a zero transaction cost world, thereafter (Arrow, 1969). Also, vertical integration was an unsettled issue in antitrust enforcement. And vertical integration, as compared with other candidate transactions (such as the employment relation or final product market transactions), has the advantage of being simpler, in that a variety of complications that arise in transactions between firms and workers or between firms and consumers – such as disparities of information, differential access to technical and legal expertise, differential capacity to bear risk, and the like – are of lesser importance in transactions between firms, where the specialization of labor within and between functions is extensive. Accordingly, the action in intermediate product market transactions resides more assuredly in the attributes of transactions in relation to the properties of alternative modes of governance.

My 1971 paper on “The Vertical Integration of Production: Market Failure Considerations” drew on all of the foregoing and more. Key features of this article that would find their way into the economics of governance included: (1) focusing on a specific phenomenon in comparative contractual terms; (2) taking adaptation to disturbances to be the central problem of economic organization; (3) ascribing contractual incompleteness to bounds in rationality, and defection hazards to opportunism; (4) tracing bilateral dependency contractual hazards to intertemporal transformations in the exchange relationship; and (5) recognizing that markets and hierarchies differ kind, in that each possesses distinctive

strengths and weaknesses, where hierarchy enjoys the advantage for managing cooperative adaptations and the market for autonomous adaptations.

As compared with price theoretic and technological explanations for vertical integration, the comparative contractual approach locates the action in the attributes of transactions, the differential capacities of alternative modes of governance to implement autonomous and coordinated adaptations, and the efficient alignment thereof. This applies not only to vertical integration, but to economic organization more generally. The discriminating alignment hypothesis is this:

- (1) If some transactions are simple and others are complex, then the attributes of transactions that are responsible for these differences must be named and their ramifications worked out. The economics of governance responds by naming asset specificity (which can take a variety of forms), uncertainty, and frequency as three of the critical dimensions for describing transactions.
- (2) If the comparative efficacy of different modes of governance (market, hybrid, hierarchy, public bureau, etc.) differ, then the critical attributes that describe alternative modes of governance need to be named and the internally consistent syndromes of attributes that define viable modes need to be worked out. Relevant dimensions include incentive intensity, administrative control, and contract law regime, the complementary relations among which are described below.

- (3) A predictive theory of economic organization resides in the hypothesis that transactions, which differ in their attributes, are aligned with governance structures, which differ in their costs and competencies, so as to effect a (mainly) transaction cost economizing result.¹⁰

The upshot is that there is a place for each generic mode of organization, yet each should be kept in its place.

The critical attributes of transactions and the sets of concurrent relations among of attributes that define viable modes of governance are discussed elsewhere (Williamson, 1979, 1988, 1991b). I merely offer some summary comments on each here.

There is general agreement that asset specificity, uncertainty, and frequency are relevant dimensions for describing transactions. Although much of the explanatory power of the theory turns on asset specificity (Williamson, 1971, 1975, 1985; Klein, Crawford, and Alchian, 1978), which gives rise to bilateral dependency (or the absence thereof), bilateral dependency by itself would not pose a problem but for disturbances that induce maladaptation between the parties to an incomplete contract. Indeed, the problem of contracting under fully stationary conditions is uninteresting: “Only when the need to make unprogrammed adaptations is introduced does the market versus internal organization issue become engaging” (Williamson, 1971, p. 113). Uncertainty is the source of disturbances to which adaptation is required. Frequency is relevant in two respects: reputation effects and setup costs, the net effects of which will vary with the particulars.

Asset specificity in conjunction with disturbances is where the main predictive action resides. Sometimes asset specificity can be traced to nonredeployable durable investments that are made immediately upon signing the contract. But asset specificity also evolves during contract implementation. As discussed in Section 3.1, such transactions undergo a Fundamental Transformation, in that, even though a large number of suppliers may have been on a parity at the outset, a bilateral dependency condition between the buyer and initial winning bidder sets in during contract implementation and at the contract renewal interval. Because transaction specific assets can be redeployed to alternative uses and users only at a loss of productive value, continuity for such exchange relations is important.

The economics of governance makes three basic governance structure distinctions: classical markets (simple spot market exchange), hybrid contracting (of a long term kind), and hierarchies (firms, bureaus). The key features of governance – differential incentive intensity, administrative control, and contract law regime – are postulated to vary among modes in internally consistent ways. Different attribute combinations give rise to distinctive adaptive strengths and weaknesses. Specifically, the market mode works out of high powered incentives, little administrative control, and a legal rules contract law regime – which is well suited to implement autonomous adaptations but poorly suited to effect cooperative adaptations. The set of complementary attributes that describes hierarchy is antipodal to the market mode – in that hierarchy uses low powered incentives, considerable administrative control, and the courts are

deferential – which reverses these adaptive capabilities. The hybrid is a compromise mode that is located between market and hierarchy on all three attributes and works well, but not surpassingly well, in both autonomous and coordinated adaptation respects. The viability of the hybrid turns crucially on the efficacy of credible commitments (penalties for premature termination, information disclosure and verification mechanisms, specialized dispute settlement, and the like – the cost effectiveness of which varies with the attributes of transactions (Williamson, 1991b; Menard, 2004)).

Although such differences among modes may now appear to be “obvious,” it was not always so (Alchian and Demsetz, 1972, p. 777).

3. Microanalytic Supports

The overarching logic of efficient alignment is as described above. Somewhat more tedious, but vital to the exercise, are the microanalytic supports described here. Indeed, I conjecture that David Kreps’ remark that “game theory ... has more to learn from transaction cost economics than it will have to give, at least initially” (1999, p. 122) turns as much on the microanalytic supports as on the basic logic.¹¹ Discriminating alignment is easy to implement for those who know the basic logic, but an understanding of economic organization requires more.

Supports of affirmative and contested kinds are distinguished. Human actors, intertemporal process transformations, and contract law-in-practice are all

affirmative supports – in that, but for the conditions described therein, the need for private ordering governance would largely collapse.

Affirmative Supports: Herbert Simon advised social scientists that “Nothing is more fundamental in setting our research agenda and informing our research methods than our view of the nature of the human beings whose behavior we are studying” (1985, p. 303). The two attributes of human actors that are especially relevant to the economics of governance are cognition and self-interestedness.

Simon took early exception with the idea that human actors are supremely rational and proposed instead that human actors be described as boundedly rational, by which he means that they are “intendedly rational, but only limitedly so” (1957a, p. xxiv). Human actors are thus neither non-rational nor irrational but are attempting effectively to cope.

It is Reinhart Selten’s view that bounded rationality is an encompassing concept that “cannot be precisely defined. It is a problem that needs to be explored” (Selten, 2001, p. 15). I concur. With reference to complex board games (such as chess), bounds on rationality are relieved by heuristics; in the context of search it is manifested as satisficing; my interest is in contracting, where the main lesson of bounded rationality is that all complex contracts are unavoidably incomplete.

Bounded rationality notwithstanding, the economics of governance also assumes that parties to a long term contract possess “feasible foresight,” by which I mean that they have the capacity to look ahead, uncover possible hazards, and work out the ramifications, thereupon to incorporate hazard

mitigating mechanisms within the ex ante contractual agreement, broadly in the spirit of Robert Michels' classic study of oligarchy. Thus whereas Michels observed that democratic structures can be and are subverted by oligarchy, he did not on that account give up on democracy. Rather the lesson is that "nothing but a serene and frank examination of the oligarchical dangers of democracy will enable us to minimize these dangers" (Michels, 1962, p. 370) – whereupon hazard mitigation can be introduced in cost effective degree.

The subversion of contracts and organization raises the issue of how self-interest is to be described. Simon's candidate is "frailty of motive" (1985, p. 303), which is a relatively benign (non-strategic) construction. The proposition, for example, that routines describe the behavior of most individuals most of the time contemplates benign behavior. But while most people will do what they say (and some will do more) most of the time, much of what is interesting about human behavior in general and organizations in particular has reference not to routines but to exceptions.

Exceptions pose strains when parties to a long-term contract perceive that individual advantages can be realized by defecting from the spirit of cooperation and reverting to the letter of the contract. The general proposition here is that when the gains to be had by insistence upon the literal enforcement of the contract exceed the discounted value of continuing the exchange relationship, defection from the spirit of cooperation can be anticipated (Williamson, 1991b, p. 273). In that event, even if most people will do what they say (and some will do more) most of the time, provision also needs to be made for outliers, where the

stakes are great. Self-interested bargaining of an opportunistic kind thus becomes the exception to which cooperation is the rule. Strategic considerations that had been ignored by neoclassical economists from 1870 to 1970 now make their appearance (Makowski and Ostroy, 2001, pp. 481-483, 490-491). Opportunism takes us into the deep structure of contract and organization in ways that frailty of motive does not.

The bilateral dependency to which I referred earlier has its origins often in the Fundamental Transformation. Bureaucratization is also an intertemporal phenomenon. Both alter the nature of the contractual relation during the contract implementation interval.

The Fundamental Transformation applies to that subset of transactions for which large numbers of qualified suppliers at the outset are transformed into what, in effect, is a bilateral exchange relation during contract execution and at the contract renewal interval. This is to be contrasted with the standard presumption that the number of qualified suppliers at the outset (large or small) will continue into the future. The key factor in determining whether a large numbers supply condition will evolve into a bilateral exchange relation is the degree to which the transaction in question is supported by durable investments in transaction-specific assets – by which I mean assets that can be redeployed to alternative uses and users only at a loss of productive value. Because continuity of the exchange relation matters as asset specificity increases, such transactions elicit added private ordering governance supports.

Specific investments can take the form of specialized physical assets (such as a die for stamping out distinctive metal shapes), specialized human assets (that arise from firm-specific training or learning by doing), site specificity (specialization by proximity), dedicated assets (large discrete investments made in expectation of continuing business, the premature termination of which would result in product being sold at distress prices), or brand-name capital. Also, nonredeployable “organizational assets” (practices, relationships, complementarities) between firms often have intertemporal origins. Whatever the source, failure to appreciate that many transactions undergo a Fundamental Transformation, whereupon identities thereafter matter to which governance ramifications accrue, was responsible for many misconceptions about contract and organization in the zero transaction cost economics era.¹²

Although bureaucratization is a much ignored condition, Oskar Lange described bureaucratization, correctly I think, as “the real danger of socialism” (1938, p. 109). Because, however, he was interested in the pure economic theory of socialism, bureaucratization issues were set aside – where they remained over the next 50 years until the economies in Eastern Europe and the former Soviet Union collapsed. Even now bureaucratization is a poorly understood intertemporal phenomenon. I will return to it in my discussion of the impossibility of replication/selective intervention, below.

As against one all-purpose law of contract that was enforced in a legalistic way, Karl Llewellyn adopted a purposive perspective and introduced the idea of “contract as framework.” As Llewellyn put it, the “major importance of legal

contract is to provide ... a framework which never accurately reflects real working relations, but which provides a rough indication around which such relations vary, an occasional guide in cases of doubt, and a norm of ultimate appeal when the relations cease in fact to work" (1931, pp. 736-737). The object of contract, so construed, was not to be legalistic but to get the job done.

To be sure, the norm of ultimate appeal to which Llewellyn refers is important, in that recourse to the courts for purposes of ultimate appeal serves to delimit threat positions. But the key idea is this: the legalistic view of contract that applies to simple transactions needs to make way for a more flexible and managerial conception of contract as contractual complexities build up. The convenient notion of one all-purpose law of contract gives way to contract laws (plural) in the process.¹³

Such contract law differences play an important role in distinguishing among alternative modes of governance. Specifically, the economics of governance avers that each generic mode of governance is supported by a distinctive form of contract law. The contract law of simple market exchange is that of legal rules,¹⁴ whereupon each party goes its own way and courts award money damages in the event of a dispute – there being no interest in continuity for such transactions. The hybrid mode is supported by contract as framework, which is a more elastic concept of contract and (within limits) promotes cooperative adaptation. If and as those adaptive limits are exceeded, transactions are organized by hierarchy. But what then is the contract law of internal organization?

The argument here is that the implicit contract law of internal organization is that of forbearance (Williamson, 1991b). Thus, whereas courts routinely grant standing to contracts between firms should there be disputes over prices, the damages to be ascribed to delays, failures of quality, and the like, the courts have the good sense to refuse to hear disputes between one internal division and another over identical technical issues. Access to the courts being denied, the parties must resolve their differences internally, which is to say that the firm becomes its own court of ultimate appeal. In effect, forbearance law authenticates hierarchy by supporting its main purpose, namely timely responsiveness to consequential disturbances for which coordinated adaptations are needed. The upshot is that the differential adaptive efficacy of alternative modes of governance are realized, in part, with the support of complementary contract law regimes.

Contested Arguments: By contested arguments I mean ones that are dismissive of or alien to governance. These include claims that technology is determinative of economic organization, that bureaucracy is of no account, that two-way common knowledge and costless bargaining eliminate problems of maladaptation in contracts, that reputation effects are reliably efficacious, that power explains observed contractual practices, and that trust obviates the need for credible commitments. I examine all from a microanalytic, comparative contracting perspective.

I briefly discuss technology, bureaucracy, and reputation effects here. My examination of the other contested views is reported elsewhere.¹⁵

Technological explanations were once held to be central to the vertical integration of separable stages of production.¹⁶ Indeed, vertical integration that lacked a “physical or technical aspect” was believed to be deeply problematic (Bain, 1968, p. 381). Thus consider the “classic case...of integrating iron-making and steel-making to effect a saving in fuel costs by eliminating a reheating of the iron before it is fed to a steel furnace” (Bain, 1981, p. 381). Vertical integration of these two stages was purportedly necessitated by thermal economies.

The comparative contracting perspective disputes this. All that is required for the thermal economies in question to be realized is for the iron-making and steel-making stages to be located in the immediate proximity of each other. Common ownership is not, without more, implied. Indeed, in a zero transaction cost world, interfirm contracting would costlessly implement autonomous and coordinated adaptations to disturbances of all kinds. In a positive transaction cost world, by contrast, interfirm contracting between autonomous, site specific stages poses bilateral dependency hazards that are relieved by common ownership. Site specificity, moreover, is merely one illustration of the comparative contractual argument that technology, by itself, is not determinative of vertical integration.

I examine the argument that bureaucracy is a wash (hence can be ignored) by restating the long-standing puzzle of firm size¹⁷ as follows: Can a large firm do everything that a collection of small firms can do and more? I proceed by indirection by postulating two mechanisms – replication and selective

intervention – which, if they could feasibly be implemented, would answer this question in the affirmative.

Thus consider the outsourcing of a good or service to an independent supplier and assume that the contract works well most of the time but occasionally breaks down. Suppose that the purchaser proposes to acquire the supplier on the following terms: the supplier will continue to appropriate its own net receipts (adjusted for overhead and user costs) in the post acquisition interval; and the supplier will continue to do business-as-usual (by replication) except as the acquiring stage selectively intervenes, always but only when there is a prospect of expected net gains. In that event, incentive intensity will be unchanged after acquisition and the combined firm will never do worse (by replication) and will sometimes do better (by selective intervention).

Whether or not this can be implemented turns on answers to the following questions: Will the accounting system, transfer pricing practices, and/or user costs be compromised by the acquisition? Will selective intervention be compromised by failures of contract as promise, whereupon a need for three-way common knowledge arises? Will the combined enterprise be more subject to politicization? Examining the microanalytics is tedious and is reported elsewhere (Williamson, 1985, Chap. 6). I merely assert here that integration experiences problems in all three respects, which is to say that (1) replication and selective intervention cannot be implemented as described, on which account (2) the move from market to hierarchy is always attended by a loss of incentive intensity and added bureaucratic costs, and (3) coming to terms with these conditions is vital

to an understanding of real world economic organization. I further aver it would be well nigh impossible to uncover the relevant microanalytic features without posing the issues in a comparative contractual way.

The purported efficacy of reputation effects, often examined as a one-sided prisoners' dilemma game with sequential moves, is widely invoked to support efficient trade. But what are the limits? If fully efficacious, why don't we rely entirely on reputation effects to police trade across all technologically separable stages? And if reputation effects require support, why doesn't it suffice to invent a suitable collective action mechanism, such as the merchant law system (Milgrom, North, and Weingast, 1990), to perform the requisite information disclosure and punishment functions?

Again, the answers reside in the microanalytics, an examination of which discloses that reputation effects can be costly and experience breakdowns (Kreps, 1990a; Williamson, 1991a, pp. 166-172; Tirole, 1996). Because the efficacy of a reputation effect varies with the nature of transactions and with the conditions of embeddedness (local sanctions and the like), this and other theories of spontaneous order often need to be augmented by providing transaction-specific intentional order of an ex post governance kind.

Like many other theories, the economics of governance has moved through a natural progression from informal theory (where the early intuitions reside) to pre-formal theory (where the basic logic is set out) to semi-formal theory (of a reduced form kind) to fully formal theory. Ideally, value is added at each step. One concern with fully formal theory is the possible loss of contact

with the phenomena in question. A second concern is that the theory becomes nontestable. Robert Solow speaks to the first as follows: “A model can be right in...[a] mechanical sense” yet be “unenlightening because...[it] obscures the key interactions, instead of spotlighting them” (2001, p. 112). And Michael Whinston (2003) speaks to the latter.

From the perspective of one who is convinced that much of the relevant action resides in the ex post contract implementation stage, I find the formal models and related empirical research by Steven Tadelis and his co-authors to be especially promising (Bajari and Tadelis, 2001; Tadelis, 2002; Bajari, McMillan, and Tadelis, 2004; Levin and Tadelis, 2004). The lens of contract approach to economic organization will continue, however, to benefit from pluralism.¹⁸

4. Applications

Vertical integration is the paradigm problem for the economics of governance, to which many other contractual phenomena turn out to be variations on a theme. Indeed, any issue that arises as or can be reformulated as a contracting problem can be examined to advantage through the lens of transaction cost economizing. What I have previously referred to as the simple contractual schema displays the basic regularities.

Assume that a firm can make or buy a component and assume further that the component can be supplied by either a general purpose technology or a

special purpose technology, where k is a measure of asset specificity. The transactions in Figure 1 that use the general purpose technology are ones for which $k = 0$. In this case, no specific assets are involved and the parties are essentially faceless. Those transactions that use the special purpose technology are ones for which $k > 0$. As earlier discussed, bilaterally dependent parties have incentives to promote continuity and safeguard their specific investments. Let s denote the magnitude of any such safeguards, which include penalties, information disclosure and verification procedures, specialized dispute resolution (such as arbitration) and, in the limit, integration of the two stages under unified ownership. An $s = 0$ condition is one for which no safeguards are provided; a decision to provide safeguards is reflected by an $s > 0$ result.

Absent anarchy or inept or corrupt courts (which would pose lawlessness issues of the kind examined in Section 5), Node A in Figure 1 corresponds to the ideal transaction in law and economics: “sharp in by clear agreement; sharp out by clear performance” (Macneil, 1974, p. 734). There being both large numbers and an absence of dependency, governance is accomplished through competitive market prices and, in the event of disputes, by court awarded damages. Node B poses unrelieved contractual hazards, in that specialized investments are exposed ($k > 0$) for which no safeguards ($s = 0$) have been provided. Such hazards will be recognized by farsighted players, who will price out the implied risks of contractual breakdown.

Added contractual supports ($s > 0$) are provided at nodes C and D. At Node C, inter-firm credible contracting mechanisms serve to support cooperative

adaptations across a wider range of disturbances. Should costly contractual breakdowns continue in the face of best bilateral efforts to craft cost-effective safeguards at Node C, the transaction may be taken out of the market and organized under hierarchy (unified ownership; vertical integration), thereby better to implement coordinated adaptations. Because added bureaucratic costs accrue upon taking a transaction out of the market and organizing it internally, internal organization is usefully thought of as the organization form of last resort: try markets, try hybrids, and have recourse to the firm only when all else fails. Node D, the unified firm, thus comes in only as higher degrees of asset specificity and added uncertainty award priority to coordinated adaptation.

Note that the price that a supplier will bid to supply under node C (hybrid) conditions will be less than the price that will be bid at node B. That is because added security features ($s > 0$) serve to reduce the risk at node C, as compared with node B, so the contractual hazard premium will be reduced. One implication is that suppliers do not need to petition buyers to provide safeguards. Because buyers will receive product on better terms (lower price) when added security is provided, buyers have the incentive to offer cost-effective credible commitments.

Applications of the schema to phenomena other than vertical integration¹⁹ include nonstandard contracting practices (customer and territorial restrictions, take-or-pay contracts, exchange agreements, price discrimination, and the like), regulation (and deregulation), labor market organization, the uses of debt and equity, agricultural cooperatives, networks, multinational economic organization, corporate strategy (many marketing practices included), and the list goes on.

Surveys of empirical applications of transaction cost economics,²⁰ the growing literature on governance within the New Institutional Economics,²¹ and citations to this literature²² all attest to the wide reach of this reasoning.

The economics of governance subscribes to the propositions that “the purpose of science in general is not prediction, but knowledge for its own sake,” yet that prediction is “the touchstone of scientific knowledge” (Georgescu-Roegen 1971, p. 37). Some scoff at prediction, evidently in the belief that prediction is easy. Also, since everyone knows that “it is easy to lie with statistics,” what useful purpose is served by empirical testing? My experience is that prediction is a demanding standard and that corroboration is not easy but difficult. Taken together, prediction and empirical testing perform the vital function of helping to sort the sheep from the goats among rival theories.

Why then are not more social scientists insistent upon deriving refutable implications and submitting these to empirical tests? One possibility is that the world of pure theory has its own orbit and rules of the game (Lipsey, 2001). A second possibility is that some theories are truly fanciful. A third is that the refutable implications of some would-be theories are contradicted by the data. A multiplicity of theories, some of which are vacuous, others of which are fanciful, and still others of which are contradicted by the evidence is an embarrassment to pragmatically oriented social scientists. Among this subset, insistence upon the injunction to derive refutable implications and submit these to the data has attractions.

The economics of governance has responded to the challenge by deriving refutable implications and inviting empirical testing. As of the year 2000, there were over 600 published empirical articles on transaction cost economics with exponential growth therein (Boerner and Macher, 2002). Still, there is no occasion to rest content. All theories of economic organization, the economics of governance included, will benefit from more and better empirical tests: better data, additional phenomena, better statistical procedures.

Given that the economics of governance was stimulated in part by the evolving crisis in antitrust enforcement and regulation during the 1960s, little wonder that many of the public policy applications of governance have been to antitrust (Joskow, 2002) and regulation/deregulation (Levy and Spiller, 1994). But it is also noteworthy that the lens of contract/governance approach has had influence on public policy analysis more generally. As Dixit remarks, the era of black box applied welfare economics had left (1996, p. 9):

... some very important gaps in our understanding and [gave] us some very misleading ideas about the possibilities of beneficial policy intervention. Economists studying business and industrial organization have long recognized the inadequacy of the neoclassical view of the firm and have developed richer paradigms and models based on the concepts of various kinds of transaction costs. Policy analysis also stands to benefit from ... opening the black box and examining the actual workings of the mechanism inside.

Applications of such reasoning to policy analysis is not only a theme of Dixit's 1996 book but has taken hold more generally.

Pertinent in this connection is that the practice of comparing actual alternatives with hypothetical ideals has given way to a comparison of feasible alternatives, all of which are flawed. Lapses into comparisons with omniscient, omnipotent, benevolent alternatives are avoided by (1) recognizing that it is impossible to do better than one's best, (2) insisting that all of the finalists in a governance structure competition meet the test of feasibility, (3) symmetrically exposing the strengths and weaknesses of all proposed feasible forms, and (4) describing and costing out the mechanisms of implementation.²³

5. Lawlessness and Governance

The economics of lawlessness focuses on institutional environments where the "government is unable or unwilling to provide adequate protection of property rights and enforcement of contracts through the machinery of the state" (Dixit, 2004, p. vii). I repeat, however, that even in states that make best efforts to provide protection for property rights and contract enforcement, the state's access to information and the state's protection and enforcement mechanisms are inherently limited. Whether, therefore, the rules of the game are well-developed (as in the United States) or poorly developed (as in Vietnam (McMillan and Woodruff, 1999)), property and contractual hazards invite the use of private ordering to infuse order, thereby to mitigate conflict and realize mutual gains from trade.

Circumstances where state law is “very costly, slow, unreliable, corrupt, weak, or simply absent” (Dixit, 2004, p. 3) nevertheless pose added private ordering challenges. Dixit’s recent book on Lawlessness and Economics is noteworthy for the range of phenomena that he addresses and his imaginative development of a “toolkit” of game theoretic models to better understand private ordering in the context of lawlessness.

He begins with “private ordering in the shadow of the law,” which mainly entails the creation of contract enforcement mechanisms within closed membership groups – of which the creation of arbitration tribunals in the cotton industry (Bernstein, 2001) is one example and “ethnically homogeneous merchants associated with trading networks governed by private law,” as in New York’s diamond industry (Richman, 2004, p. 17), is another. As against bilateral governance of the kind described in earlier parts of this paper, these are network enforcement mechanisms that rely on the efficacy of reputation effects to infuse order among the membership in well-defined groups.

More interesting are transactions for which “profit-motivated contract enforcement “ materializes. The creation of a mafia to provide order for otherwise problematic transactions is illustrative (Gambetta, 1993, p. 15; as quoted in Dixit, 2004, p. 99):

When the butcher comes to me to buy an animal, he knows that I want to cheat him [by giving him a low-quality animal]. But I know that he wants to cheat me [by reneging on payment]. Thus we need Peppe [that is, a third party] to make us agree. And we both pay Peppe a percentage of

the deal.

To be sure, organization, like the law, has a life of its own – which poses intertemporal tradeoffs: “protectors, once enlisted, invariably overstay their welcome” (Gambetta, 1993, p. 197). The lessons for transition economies are manifold (Dixit, 2004, pp. 3, 100, 129).

Issues of “private protection for property rights” also pose novel issues – both in developed countries, where common pool resource utilization problems elicit collective action responses, and, even more, in less-developed countries (Rodrik, 2000) and transition economies (McMillan, 2002). As Dixit puts it, “threats to property rights come from...individuals [who] encroach on one’s property...[or], even worse, the state itself or its agents may engage in extortion of private property to further their own objectives” (2004, p. 125). The balance between government protection, private protection, and efforts made by other people to capture one’s property turns on the underlying parameters of his model.

Although the contractual hazards with which Dixit is concerned are due mainly to weak property rights, rather than bilateral dependency, they can nevertheless be interpreted as a variant upon the simple contractual schema.²⁴ Absent relief, property right hazards would locate the parties at node B, which is inefficient if cost-effective private ordering supports for property can be devised that will move the parties to node C. Note, however, that Dixit never moves beyond node C to include unified ownership at node D (hierarchy) as a governance alternative. Possibly this will be remedied in follow-on work of the

lawlessness kind – although if, as I contend, markets and hierarchies differ in discrete structural ways, these differences will need explicitly to be taken into account. Be that as it may, there is no question but that the study of lawlessness usefully expands the reach of the economics of governance.

6. Conclusions

The economics of governance has helped to persuade many economists and other social scientists that (1) institutions matter and are susceptible to analysis, (2) adaptation to disturbances is a key purpose of economic organization, (3) the action is in the microanalytics, (4) positive transaction costs can be addressed in a disciplined way, and (5) public policy toward business needs to be informed by a broad (organizational) understanding of the efficiency purposes served by complex contract and economic organization. Put in the negative, it is no longer acceptable to treat governance as someone else's bailiwick, to slight adaptation, to scant the microanalytics, to assume transaction costs to be zero, or to ascribe innate monopoly purposes to nonstandard contractual practices and organizational structures.

As described herein, the economics of governance joins three fundamental concepts – adaptation, governance, and transaction costs – with the purpose of pouring operational content into all three. This is accomplished by making not one (or a few) changes in the basic setup – such as a change in the objective function of the firm, or the introduction of a new constraint, or invoking barriers to entry, or assuming differential risk aversion, or the like – but by making a series of related changes.

The economics of governance treats simple market exchange as a special case and features ongoing transactions for which adaptations (of both spontaneous and intentional kinds) are needed. As compared with other theories of economic organization, the economics of governance is more expressly concerned with the attributes of human actors. It is also more microanalytic – both with respect to the efficient alignment of transactions with governance structures (where the action is in the attributes of transactions in relation to the adaptive properties of alternative modes of governance) and examining hitherto neglected features of contract (e.g., the Fundamental Transformation), of bureaucracy (the impossibility of replication/selective intervention), and of contract laws (plural).

It is said that theories, like beads, need a string to hold them together. The string that draws the foregoing features together is the discriminating alignment hypothesis, whereupon economizing on transaction costs (which mainly take the form of maladaptation) is made the main case. The resulting theory of economic organization applies not merely to the make-or-buy decision and boundary of the firm issues but has ramifications for a wide range of contractual phenomena – within economics and the social sciences more generally. Empirical tests have been both numerous and broadly corroborative. Because, however, the resulting study of good order and workable arrangements differs in kind from orthodoxy, the economics of governance entails setup costs. Is the game worth the candle?

I venture a two-part answer. First, not everyone will want to or should make the requisite investments. The economics of governance, after all, is only

one of several instructive lenses for studying the economics of organization. But second, I submit that our understandings of economic organization and public policy pertinent thereto have been needlessly impoverished by failures to pay heed to the lessons of governance. If and as others agree, the economics of governance is an unfinished project whose time has come.

Footnotes

- * The author is Professor of the Graduate School and Edgar F. Kaiser Professor Emeritus of Business, Economics, and Law at the University of California, Berkeley. The paper has benefited from workshop presentations at the University of California, Berkeley, the University of Valencia, INSEAD (Fontainebleau), and at the 2004 annual conference of the International Society for New Institutional Economics. An abbreviated version was also given as the Horst Claus Recktenwald Lecture at Nuremberg on November 4, 2004. Comments and suggestions from Fred Balderston, Ernesto Dalbo, Avinash Dixit, Robert Gibbons, Witold Henisz, Ian Larkin, Steven Tadelis, and Dean Williamson are especially acknowledged.
- 1. Lon Fuller's definition of "economics" as "the science, theory, or study of good order and workable arrangements" (1954, p. 477) is very much in the spirit of what I refer to as governance.

2. One of the immediate ramifications of insistently comparing feasible alternatives, all of which are flawed, is that the purported inefficiencies that are ascribed to failures to achieve “first best” optimality are not dispositive but invite the query, As compared with what? I return to this issue in Section 4.
3. Excluding “corporate governance”, the number of articles that used the word “governance” during the period 1998-2000 as compared with the period 1977-1979 in selected economics, business/management, sociology/organization, and political science journals were 60 vs 1, 76 vs 4, 79 vs 18, and 60 vs 25, where the journals surveyed were: AEA, JPE, QJE, Rand, and JEP in economics; SMJ, MS, AMJ, and AMR in business/management; ASQ, OS, AJS, ASR and ARS in sociology/organization; and APSR, PSQ, JP, and PRS in political science. Combining these four categories, articles using the word governance increased from 48 to 275 over this 20 year interval. Avinash Dixit (2004, pp. 149-150) reports that number of web pages that turn up under the search for “governance” is huge.
4. The economics of information also deals with contractual hazards, but mainly of a different kind than those dealt with here. Thus, whereas insurance is the paradigm problem for the economics of information, vertical integration is the paradigm problem for governance. Also, law, organization theory, adaptation, and transaction costs all figure more prominently in studying the governance of contractual relations.

5. Commons turned instead to W. N. Hohfeld's system of "fundamental legal concepts" to implement his ideas. (For his reliance on Hohfeld, see especially the extended footnote in Commons (1968, p. 91).) The resulting effort to interpret transactions and ongoing concerns with the use of juridical reasoning resulted in an elaborate taxonomy (Commons, 1968, pp. 90-142), but a predictive theory of contract and organization and a follow-on empirical research agenda did not materialize.
6. Coase argued that (1937, p. 391) "The main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism, the most obvious ... [being] that of discovering what the relevant prices are." Although this sounds plausible, the price discovery burden that Coase ascribes to the market does not survive comparative institutional scrutiny (Williamson, 2002, pp. 179-180).
7. Interestingly, Jean-Jacques Laffont and David Martimort (2002) credit Barnard as "the first to define a general theory of incentives in management" (2002, p. 11), where they interpret Barnard's views as broadly in the spirit of their own agency theory work. Laffont and Martimort also write that "Barnard recognized that incentive contracts do not rule all of the activities within an organization." In particular, "the incompleteness of contracts and the bounded rationality of members of the organization require that some leaders be given authority" (2002, p. 13), presumably to exercise ex post governance. Barnard advanced prescient ideas that were pertinent to both agency theory and the economics of governance.

8. The quoted language is that of the then head of the Antitrust Division, Donald Turner. See Stanley Robinson, 1968, N.Y. State Bar Association, Antitrust Symposium, p. 29. Because durable market power is the exception rather than the rule, the economics of governance, like the common law, works out of the rebuttable presumption that voluntary exchange serves affirmative economic purposes.
9. United States v. Von's Grocery Co., 384 U.S. 270, 301 (1966) (Stewart J. dissenting).
10. As discussed herein, it will simplify to take the attributes of transactions as given and deploy governance structures in relation to these. In fact, the attributes of transactions and of governance structures are chosen simultaneously (Riordan and Williamson, 1985). The basic regularities of the simplified setup nevertheless carry over, although some nuances also appear, when simultaneity is introduced.
11. Arrow (1987, p. 734) likewise emphasizes that “nanoeconomic reasoning” is a distinguishing feature of the New Institutional Economics.
12. Whatever the source, bilateral dependency has massive public policy ramifications which did not register in the pre-governance era. Thus contractual practices that were previously thought to be anticompetitive (as with take-or-pay contracts) are now perceived to serve an efficiency purpose (Masten and Crocker, 1985) if the requisite preconditions are satisfied. Also, the purported efficacy of “ex ante franchise bidding” as a solution to the problem of natural monopoly is deeply problematic in

industries that will predictably undergo a fundamental transformation (Williamson, 1976).

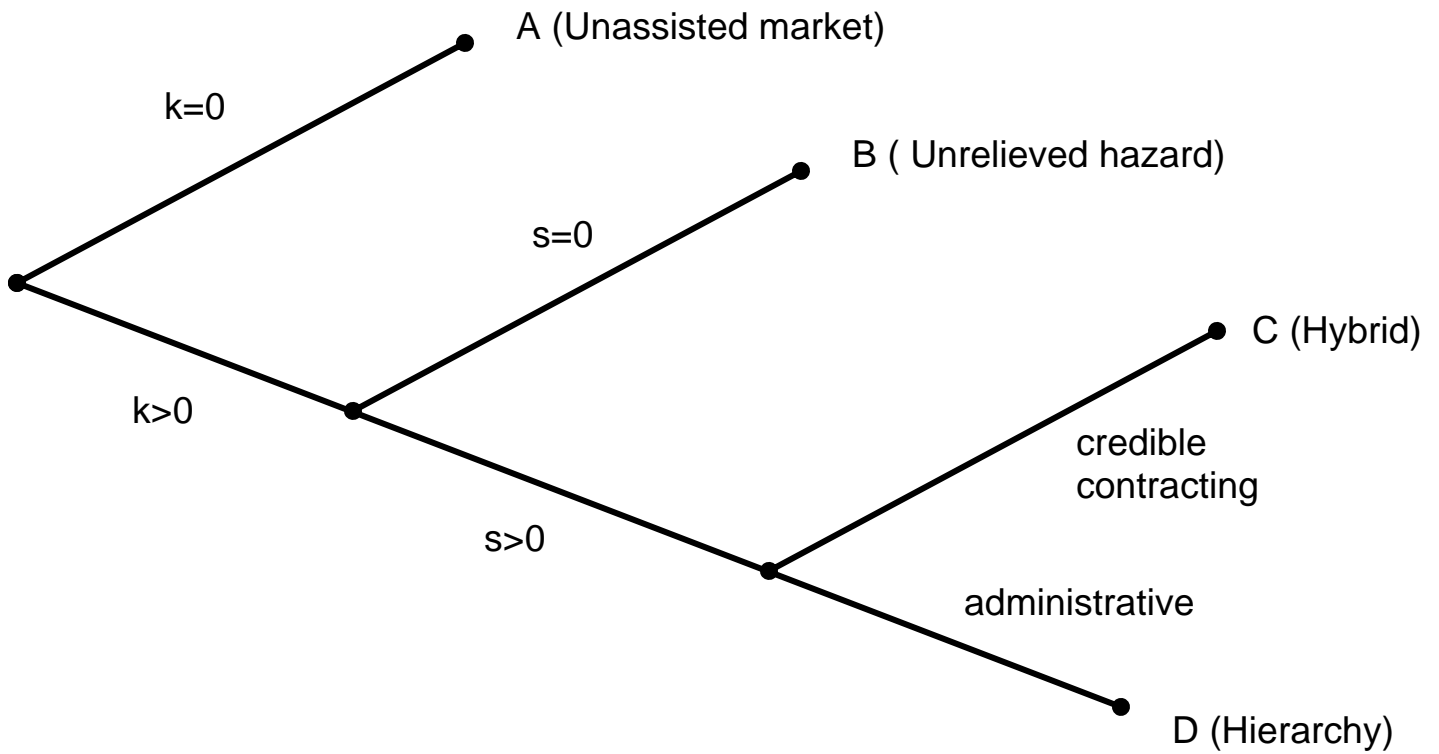
13. Contract laws (plural) can be thought of as the response by legal realists to the need to support continuity in trades that deviate from the ideal transaction in both law and economics – namely between large numbers of buyers and sellers whose identity was unimportant. Whereas economists made note of deviations from the ideal that took the form of small numbers (by devising monopoly, monopsony, duopoly models and the like), legal realists, if not contract law specialists more generally, were alert to the benefits of continuity as identity became important.
14. As Dixit's recent examination of lawlessness (2004) emphasizes, even simple market exchange can benefit from private ordering if court ordering is weak or corrupt. Section 5 excepted, I assume that court ordering works well for most simple transactions.
15. For a discussion of the limits of the two-way common knowledge/costless bargaining argument, see Williamson (1975, pp. 31-33); for assessments of the claim that a sequence of short term contracts can implement an optimal long term contract, see Kreps (1990b , p. 760) and Williamson (1991a); on power, see Williamson (1996, chap. 9); and on trust, see Williamson (1996, chap. 10).
16. Note that I define a stage as a cluster of nonseparable activities. Vertical integration thus entails the unified ownership and hierarchical organization of successive separable stages.

17. See Frank Knight's preface in the reissue of Risk, Uncertainty, and Profit (1965, p. xxiii). Also see Knight (1965, p. 286, n. 1). Tracy Lewis also speaks to the purported advantages of large size (1983, p. 1092).
18. The "property rights theory of the firm" (Grossman and Hart, 1986; Hart 1995) and recent variants thereon (Hart and Holmstrom, 2002; Baker, Gibbons, and Murphy, 2002) obviously qualifies. For a recent survey and contribution to the theory of the firm literature, see Robert Gibbons (2005). Also see Tian Zhu (2004).
19. Interestingly, the make-or-buy decision refuses to go away, having recently been renamed as the worrisome practice of "outsourcing" or, even worse, as "offsourcing," which entails procurement from a foreign country. Some critics would have us believe that domestic vertical integration is the ideal to which market procurement is a deeply problematic alternative.
20. As Scott Masten observes, "surveys of the empirical transaction cost literature attest...[that] the theory and evidence have displayed remarkable congruity" (1995, pp. xi-xii). Paul Joskow, moreover, describes empirical work of a transaction cost kind as "in much better shape than much of the work in industrial organization generally" (1991, p. 81). Also see Michael Whinston (2003). Interestingly, much of the empirical research on the economics of governance does not rely on published data that have been collected for an altogether different purpose (e.g., to satisfy census or regulatory requirements). Instead, much of the best empirical research on governance uses primary data that have been collected with the

microanalytic needs of the discriminating alignment hypothesis foremost in mind. Those who have done this modest, slow, molecular, cumulative work deserve enormous credit.

21. For collections of articles that work out of the logic of governance, see Williamson and Masten (1995) and Claude Menard (2005), especially those articles that Menard clusters under headings VII through XIII.
22. For an examination of the growing citations to transaction cost economics/the economics of governance, see Williamson (2005). The uses of such reasoning are especially great in business and economics but also extend to include law, sociology (organization theory), and political science.
23. I discuss these issues elsewhere with reference to the remediableness criterion (Williamson, 1996, chap. 8).
24. Letting r denote property rights hazards and substituting r for k (asset specificity hazards) in Figure 1, the same regularities appear except for the absence of Node D.

Figure 1: The Simple Contractual Schema



References

- Alchian, A. and H. Demsetz. (1972). "Production, Information Costs, and Economic Organization," American Economic Review, 62 (December): 777-795.
- Arrow, K. (1969). "The Organization of Economic Activity: Issues Pertinent to the Choice of Market Versus Nonmarket Allocation," in The Analysis and Evaluation of Public Expenditure: The PPB System, Vol. 1. U.S. Joint Economic Committee, 91st Congress, 1st Session. Washington, DC: U.S. Government Printing Office, 39-73.
- Arrow, K. (1987). "Reflections on the Essays," in George Feiwel, ed., Arrow and the Foundations of the Theory of Economic Policy. New York: NYU Press, 727-734.
- Arrow, K. and G. Debreu (1954). "Existence of an Equilibrium for a Competitive Economy," Econometrica, 22: 265-290.
- Bain, J. (1968). Industrial Organization. 2nd ed. New York: John Wiley.
- Bajari, P., R. McMillan and S. Tadelis (2004). "Auctions versus Negotiations in Procurement: An Empirical Analysis," unpublished manuscript.
- Bajari, P. and S. Tadelis (2001). "Incentives Versus Transaction Costs: A Theory of Procurement Contracts," RAND Journal of Economics, 32 (3): 287-307.
- Baker, G., R. Gibbons, and K.J. Murphy (2002). "Relational Contracts and the Theory of the Firm," Quarterly Journal of Economics, 117: 39-83.
- Barnard, C. (1938). The Functions of the Executive. Cambridge, MA: Harvard University Press.
- Bernstein, L. (2001). "Private and Commercial Law in the Cotton Industry: Creating Cooperation through Rules, Norms and Institutions," Michigan Law Review, 99 (7): 1724-1788.
- Boerner, C. and J. Macher (2002). "Transaction Cost Economics: An Assessment of Empirical Research in the Social Sciences," unpublished manuscript.
- Buchanan, J. (2001). "Game Theory, Mathematics, and Economics," Journal of Economic Methodology, 8 (March): 27-32.
- Coase, R. (1937). "The Nature of the Firm," Economica N.S., 4: 386-405.
- Coase, R. (1960). "The Problem of Social Cost," Journal of Law and Economics, 3 (October): 1-44.
- Coase, R. (1964). "The Regulated Industries: Discussion," American Economic Review, 54 (May): 194-197.

Coase, R. (1972). "Industrial Organization: A Proposal for Research," in V. R. Fuchs, ed., Policy Issues and Research Opportunities in Industrial Organization. New York: National Bureau of Economic Research, 59-73.

Commons, J. (1932). "The Problem of Correlating Law, Economics, and Ethics," Wisconsin Law Review, 8: 3-26.

Commons, J. (1950). The Economics of Collective Action. Madison: University of Wisconsin Press.

Commons, J. (1968). Legal Foundations of Capitalism, 2nd ed, Madison: University of Wisconsin Press.

Demsetz, H. (1983). "The Structure of Ownership and the Theory of the Firm," Journal of Law & Economics, 26 (June): 375-390.

Dixit, A. (1996). The Making of Economic Policy: A Transaction Cost Politics Perspective. Cambridge, MA: MIT Press.

Dixit, A. (2004). Lawlessness and Economics: Alternative Modes of Governance (Gorman Lectures in Economics, University College London). Princeton University Press, 2004.

Fischer, S. (1977). "Long-Term Contracting, Sticky Prices, and Monetary Policy: Comment," Journal of Monetary Economics, 3: 317-324.

Fuchs, V., ed. (1972). Policy Issues and Research Opportunities in Industrial Organization. New York: Columbia University Press.

Fuller, L. (1954). "American Legal Philosophy at Mid Century," Journal of Legal Education, 6 (4): 457-485.

Galanter, M. (1981). "Justice in Many Rooms: Courts, Private Ordering, and Indigenous Law," Journal of Legal Pluralism, 19: 1-47.

Gambetta, D. (1993). The Sicilian Mafia: The Business of Private Protection. Cambridge, MA: Harvard University Press.

Georgescu-Roegen, N. (1971). The Entropy Law and Economic Process. Cambridge, MA: Harvard University Press.

Gibbons, R. (2005). "Four Formal(izable) Theories of the Firm," Journal of Economic Behavior and Organization (forthcoming).

Goldberg, V. and J.R. Erickson (1987). "Quantity and Price Adjustment in Long-Term Contracts: A Case Study in Petroleum Coke," Journal of Law and Economics, 31: 369-398.

Grossman, S. and O. Hart (1986). "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," Journal of Political Economy, 94 (August): 691-719.

Hart, O. (1995). Firms, Contracts, and Financial Structure. New York: Oxford University Press.

- Hart, O. and B. Holmstrom (2002). "A Theory of Firm Scope," unpublished manuscript.
- Hayek, F. (1945). "The Use of Knowledge in Society," American Economic Review, 35 (September): 519-530.
- Joskow, P. (1991). "The Role of Transaction Cost Economics in Antitrust and Public Utility Regulatory Policies," Journal of Law, Economics, and Organization, 7 (Special Issue): 53-83.
- Joskow, P. (2002). "Transaction Cost Economics, Antitrust Rules, and Remedies," Journal of Law, Economics and Organization, 18 (1): 95-116.
- Klein, B., R. Crawford, and A. Alchian. (1978). "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," Journal of Law and Economics, 21 (October): 297-326.
- Knight, F. (1965). Risk, Uncertainty, and Profit. New York: Harper & Row.
- Kreps, D. (1990a). "Corporate Culture and Economic Theory," in James Alt and Kenneth Shepsle, eds., Perspectives on Positive Political Economy. New York: Cambridge University Press, 90-143.
- Kreps, D. (1990b). A Course in Microeconomic Theory. Princeton, NJ: Princeton University Press.
- Kreps, D. (1999). "Markets and Hierarchies and (Mathematical) Economic Theory," in Glenn Carroll and David Teece, eds., Firms, Markets, and Hierarchies. NY: Oxford University Press.
- Lange, O. (1938). "On the Theory of Economic Socialism," in Benjamin Lippincott, ed., On the Economic Theory of Socialism. Minneapolis: University of Minnesota Press, 55-143.
- Laffont, J. and D. Martimort (2002). The Theory of Incentives: The Principal-Agent Model. Princeton, NJ: Princeton University Press.
- Levin, J. and S. Tadelis (2004), "Employment versus Contracting in Procurement: Theory and Evidence from U.S. Cities," unpublished manuscript.
- Levy, B. and P. Spiller (1994). "The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation," Journal of Law, Economics and Organization, 10 (1): 201-246.
- Lewis, T. (1983). "Preemption, Divestiture, and Forward Contracting in a Market Dominated By a Single Firm," American Economic Review, 73 (December): 1092-1101.
- Lipsey, R. (2001). "Successes and Failures in the Transformation of Economics," Journal of Economic Methodology, 8 (2): 169-201.
- Llewellyn, K. (1931). "What Price Contract? An Essay in Perspective," Yale Law Journal, 40 (May): 704-751.
- Macneil, I. (1974). "The Many Futures of Contracts," Southern California Law Review, 47 (May): 691-816.

- Makowski, L. and J. Ostroy (2001). "Perfect Competition and the Creativity of the Market," Journal of Economic Literature, 32 (2): 479-535.
- Masten, S. (1995). "Introduction to Vol. II," in O. Williamson and S. Masten, eds., Transaction Cost Economics. Aldershot, UK: Edward Elgar.
- Masten, S. and K. Crocker. (1985). "Efficient Adaptation in Long Term Contracts: Take or Pay Provisions for Natural Gas," American Economic Review, 75 (December): 1085-1096.
- McMillan, J. (2002). Reinventing the Bazaar: A Natural History of Markets. New York: W. W. Norton & Company.
- McMillan, J., and C. Woodruff. 1999. "Dispute Prevention Without Courts in Vietnam," Journal of Law, Economics and Organization, 15 (3): 637-658.
- Menard, C. (2004). "The Economics of Hybrid Organizations," Journal of Institutional and Theoretical Economics, 160 (2): 345-376.
- Menard, C., ed. (2005). International Library of the New Institutional Economics. Northampton, MA: Edward Elgar.
- Michels, R. (1962). Political Parties. Glencoe, IL: Free Press.
- Milgrom, P., D. North, and B. Weingast. (1990). "The Role of Institutions in the Revival of Trade," Economics and Politics, 2 (March): 1-24.
- Reder, M. (1999). The Culture of a Controversial Science. Chicago: University of Chicago Press.
- Richman, B. (2004). "Firms, Courts, and Reputation Mechanisms: Towards a Positive Theory of Private Ordering," unpublished manuscript, Duke University School of Law.
- Riordan, M. and O. Williamson (1985). "Asset Specificity and Economic Organization," International Journal of Industrial Organization, 3: 365-378.
- Rodrik, D. (2000). "Institutions for High Quality Growth: What They Are and How to Acquire Them," Studies in Comparative International Development, 35: 3-31.
- Selten, R. (2001). "What is Bounded Rationality?" in Gerd Gigerenzer and Reinhard Selten, eds., Bounded Rationality. Cambridge, MA: MIT Press, 13-36.
- Simon, H. (1957a). Models of Man. New York: John Wiley & Sons.
- Simon, H. (1957b). Administrative Behavior. 2nd ed. New York: Macmillan.
- Simon, H. (1985). "Human Nature in Politics: A Dialogue of Psychology with Political Science," American Political Science Review, 79: 293-304.
- Smith, A. (1776). The Wealth of Nations. Reprinted in 1992. London: J. M. Dent & Sons.
- Solow, R. (2001). "A Native Informant Speaks," Journal of Economic Methodology, 8 (March): 111-112.

- Tadelis, S. (2002). "Complexity, Flexibility, and the Make-or-Buy Decision," American Economic Review Papers and Proceedings, 92 (2): 433-437.
- Tirole, J. (1996). "A Theory of Collective Reputations, with Applications to the Persistence of Corruption and to Firm Quality," Review of Economic Studies, 63: 1-22.
- Whinston, M. (2003). "On the Transaction Cost Determinants of Vertical Integration," Journal of Law, Economics and Organization, 19 (Spring): 1-23.
- Williamson, O. (1971). "The Vertical Integration of Production: Market Failure Considerations." American Economic Review, 61 (May): 112-123.
- Williamson, O. (1975). Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press.
- Williamson, O. (1976). "Franchise Bidding for Natural Monopolies—In General and With Respect to CATV," Bell Journal of Economics, 7 (Spring): 73-104.
- Williamson, O. (1979). "Transaction-Cost Economics: The Governance of Contractual Relations," Journal of Law and Economics, 22 (October): 233-261.
- Williamson, O. (1985). The Economic Institutions of Capitalism. New York: Free Press.
- Williamson, O. (1988). "The Logic of Economic Organization." Journal of Law, Economics, and Organization, 4 (Spring): 65-93.
- Williamson, O. (1991a). "Economic Institutions: Spontaneous and Intentional Governance," Journal of Law, Economics, and Organization, 7 (Special Issue): 159-187.
- Williamson, O. (1991b). "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," Administrative Science Quarterly, 36 (June): 269-296.
- Williamson, O. (1996). The Mechanisms of Governance. New York: Oxford University Press.
- Williamson, O. (2002). "The Theory of the Firm as Governance Structure: From Choice to Contract," Journal of Economic Perspectives, 16 (Summer): 171-195.
- Williamson, O. (2005). "Transaction Cost Economics and Business Administration", Scandinavian Journal of Management (forthcoming).
- Williamson, O. and S. Masten (1995). Transaction Cost Economics, Vol I and II. Aldershot, UK: Edward Elgar.
- Wilson, E. (1999). Consilience. New York: Alfred Knopf.
- Zhu, T. (2004). "Incentive Intensity, Forbearance Law, and the Governance of Transactions," Industrial and Corporate Change, 13 (December): 855-866.