

The Economics of Organization: The Transaction Cost Approach¹

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The transaction cost approach to the study of economic organization regards the transaction as the basic unit of analysis and holds that an understanding of transaction cost economizing is central to the study of organizations. Applications of this approach require that transactions be dimensionalized and that alternative governance structures be described. Economizing is accomplished by assigning transactions to governance structures in a discriminating way. The approach applies both to the determination of efficient boundaries, as between firms and markets, and to the organization of internal transactions, including the design of employment relations. The approach is compared and contrasted with selected parts of the organization theory literature.

The proposition that the firm is a production function to which a profit-maximization objective has been assigned has been less illuminating for organization theory purposes than for economics. Even within economics, however, there is a growing realization that the neoclassical theory of the firm is self-limiting. A variety of economic approaches to the study of organization have recently been proposed in which the importance of internal organization is acknowledged.² The one described here emphasizes

¹ This paper has benefited from a number of discussions I have had with William G. Ouchi, including those we had at a Mini-Conference on Strategy, Marketing, and Organization (held at the Graduate School of Management, UCLA, during April 1980 under the auspices of Booz, Allen, & Hamilton) and at the recent Conference on the Economics of Organization (held in Berlin in June 1980 under the auspices of the International Institute of Management). It has also benefited from a year-long dialogue on these matters that Ouchi and I have had with Paul Kaestle and William Allen. The paper also benefited greatly from remarks on an earlier version by Banri Asanuma and on a later revision by Herbert Simon. The assistance of *AJS* reviewers in reshaping the manuscript is also appreciated. Requests for reprints should be sent to Oliver E. Williamson, Department of Economics, University of Pennsylvania, Philadelphia, Pennsylvania 19104.

² These include the neoclassical theory of the firm—which, however is relatively sparse in its organizational implications—managerial discretion theory (Baumol 1959; Marris 1964; Williamson 1964), team theory (Marschak and Radner 1972), agency theory (Alchian and Demsetz 1972; Jensen and Meckling 1976), and the transaction cost approach (Coase [1937] 1952; Williamson 1975). Although I was aware, when I was

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transaction costs and efforts to economize thereon. More than most economic approaches, it makes allowance for what Frank Knight (1965, p. 270) has felicitously referred to as "human nature as we know it."³

Economic approaches to the study of organization, transaction cost analysis included, generally focus on efficiency. To be sure, not every interesting organizational issue can be usefully addressed, except perhaps in a minor way, in efficiency terms. A surprisingly large number can, however, especially if transaction cost aspects are emphasized. This is accomplished by making the transaction—rather than commodities—the basic unit of analysis and by assessing governance structures, of which firms and markets are the leading alternatives, in terms of their capacities to economize on transaction costs.

The transaction cost approach to the study of organizations has been applied at three levels of analysis. The first is the overall structure of the enterprise. This takes the scope of the enterprise as given and asks how the operating parts should be related one to another. Unitary, holding company, and multidivisional forms come under scrutiny when these issues are addressed.⁴ The second or middle level focuses on the operating parts and asks which activities should be performed within the firm, which outside it, and why. This can be thought of as developing the criteria for and defining the "efficient boundaries"⁵ of an operating unit. The third level of analysis is concerned with the manner in which human assets are organized. The object here is to match internal governance structures with the attributes of work groups in a discriminating way.

Only issues of the two latter kinds are addressed in this paper.⁶ The study of both of these issues turns critically on the dimensionalizing of transactions. The antecedent literature from which the transaction cost approach derives is sketched in Section I. The rudiments of the approach, including the dimensionalizing of transactions, are then set out in Section II. Applications to the study of efficient boundaries are developed in Section III. Employment relation issues are addressed in Section IV. Com-

working on *Markets and Hierarchies*, that it had a number of applications outside economics, the book was directed at an economics audience. I was therefore gratified when organization theory specialists recognized merit in the approach. I am especially indebted to William Ouchi for bringing the book to the attention of the organization theory audience (see Ouchi 1977).

³ Knight's remarks about the human attributes of economic agents have been widely disregarded and attention has been focused narrowly on the risk-bearing aspects of Knight's classic work.

⁴ I have discussed these issues at length elsewhere (see Williamson 1970, chaps. 2, 3, and 7; 1975, chaps. 8-9).

⁵ The term "efficient boundaries" is borrowed from Ouchi (1980a).

⁶ For a discussion of the issues that arise at the first level, see the references in n. 4.

parisons with selected aspects of the organization theory literature and contrasts with "power" approaches to the study of organizations are made in Section V. Concluding remarks follow.

I. ANTECEDENTS

The transaction cost approach to the study of organizations relates to three relatively independent literatures. To be sure, there is considerable overlapping among them and they have not proceeded heedless of one another. The extent to which they deal with common issues, however, is rarely recognized.

Considering that economizing is central to the transaction cost approach, it is not surprising that an economics literature is among the antecedents. Also, inasmuch as internal organizational issues are featured, the organization theory literature makes an expected appearance. The third literature is less obvious: this is the contract law literature in which contract is addressed as a governance issue.

Each of these literatures is large, and my summary of the intellectual progression in each is necessarily brief and omits important contributions. The 1930s witnessed significant advances in all three areas. My sketch of the antecedents begins there.

The proposition that the transaction is the basic unit of economic analysis was advanced by John R. Commons in 1934. He recognized that there were a variety of governance structures with which to mediate the exchange of goods or services between technologically separable entities. Assessing the capacities of different structures to harmonize relations between parties and recognizing that new structures arose in the service of these harmonizing purposes were central to the study of institutional economics as he conceived it.

Ronald Coase posed the problem more sharply in his classic 1937 paper, "The Nature of the Firm." He, like others, observed that the production of final goods and services involved a succession of early stage processing and assembly activities. But whereas others took the boundary of the firm as a parameter and examined the efficacy with which markets mediated exchange in intermediate and final goods markets, Coase held that the boundary of the firm was a decision variable for which an economic assessment was needed. What is it that determines when a firm decides to integrate and when instead it relies on the market?

Friedrich Hayek's 1945 article, "The Use of Knowledge in Society," shed further insight. He observed that the economic problem is relatively uninteresting except when economic events are changing and sequential adaptations to these changes are needed. What distinguishes a high per-

formance economy is its capacity to adapt efficiently to uncertainty. Although he did not state the issues in transaction-cost-economizing terms, such terms are implicit in much of the argument.

The postwar market failure literature helped better to define some of the "failures" with markets that common ownership (the firm) served to overcome. It was not until 1969, however, that the underlying difficulties with markets were unambiguously traced to transaction cost origins. As Kenneth Arrow put it: "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" (1969, p. 48).

The appearance of Chester Barnard's book *The Functions of the Executive* in 1938 and of Herbert Simon's explication of the Barnard thesis in *Administrative Behavior* in 1947 are widely recognized as significant events in the organization theory field. Purposive organization was emphasized, but the limits of human actors in bounded rationality respects and the importance of informal organization were prominently featured.

This stream of research was further developed by the "Carnegie School" (March and Simon 1958; Cyert and March 1963). Hierarchical organization and associated controls are traced to the limited capacities of human actors to cope with the complexity and uncertainty with which they are confronted. The organization is essentially viewed as a "problem-facing and problem-solving" entity (Thompson 1967, p. 9). But organizational efforts are often myopic, and demands for control can and often do give rise to dysfunctional outcomes.

Although Alfred Chandler's remarkable book, *Strategy and Structure* (1962), had its origins in business history rather than organization theory, in many respects this historical account of the origins, diffusion, nature, and importance of the multidivisional form of organization ran ahead of contemporary economic and organizational theory. The mistaken notion that economic efficiency was substantially independent of internal organizational structure was no longer tenable after this book appeared.

James Thompson built on all of the foregoing in fashioning his classic statement of the organizational problem in 1967. Both uncertainty and bounded rationality were featured. Moreover, implicitly, and sometimes explicitly⁷ attention was fixed on efforts to economize on transaction costs. Core technologies, domains (or boundaries) of organized action, and the powers and limits of market and hierarchical modes are all recognized.

The legal literature to which I refer is concerned with contracting—especially the distinction between "hard contracting" (or black-letter law)

⁷ For example, Thompson's proposition that "under norms of rationality, organizations group positions to minimize coordination costs" (1967, pp. 64–65) is in this spirit.

and "soft contracting" in which the contract serves mainly as framework. Karl Llewellyn's 1931 essay addressed these issues. He observed that transactions come in a variety of forms and that a highly legalistic approach can sometimes get in the way of the parties instead of contributing to their purposes. This is especially true where continuity of the exchange relation between the parties is highly valued.

Others who adopted and refined this theme include Steward Macaulay (1963), Lon Fuller (1964), Clyde Summers (1969), David Feller (1973), and Ian Macneil (1974). As Macneil puts it, the discrete transaction—"sharp in by clear agreement; sharp out by clear performance" (1974, p. 738)—is very rare in both law and economics, and we deceive ourselves by treating it otherwise. What he refers to as "relational" forms of contracting—which may involve arbitration, collective bargaining, and other types of obligational market exchange—are becoming more important and need to be recognized.

A deepening awareness of transaction cost issues marks the progression of each of the literatures. Among other things, by the early 1970s it was becoming clear that the study of organizations was a comparative institutional undertaking in which alternative governance structures—both within and between firms and markets—required explicit attention. Inasmuch, moreover, as the transactions of interest were not all of a kind, differences among them would evidently have to be recognized. What were the distinguishing attributes? Finally, although transaction cost economizing is an important and greatly neglected topic, such economizing cannot proceed regardless of the production cost ramifications. Put differently, transaction cost economizing needs to be located within a larger economizing framework and the relevant trade-offs need to be recognized.

II. SOME RUDIMENTS

A transaction occurs when a good or service is transferred across a technically separable interface. One stage of activity terminates and another begins. With a well-working interface, as with a well-working machine, these transfers occur smoothly. In mechanical systems we look for frictions: do the gears mesh, are the parts lubricated, is there needless slippage or other loss of energy? The economic counterpart of friction is transaction cost: do the parties to the exchange operate harmoniously, or are there frequent misunderstandings and conflicts that lead to delays, breakdowns, and other malfunctions? Transaction cost analysis supplants the usual preoccupation with technology and steady-state production (or distribution) expenses with an examination of the comparative costs of

planning, adapting, and monitoring task completion under alternative governance structures.

Some transactions are simple and easy to mediate. Others are difficult and require a good deal more attention. Can we identify the factors that permit transactions to be classified as one kind or another? Can we identify the alternative governance structures within which transactions can be organized? And can we match governance structures with transactions in a discriminating (transaction-cost-economizing) way? These are the neglected issues with which organizational design needs to come to grips. These are the issues for which transaction cost analysis promises to offer new insights.

Behavioral Assumptions

It is widely recognized—by economists, lawyers, and others who have an interest in contracting—that complex contracts are costly to write and enforce. There is a tendency, however, to accept this fact as given rather than inquire into the reasons for it. As a result, some of the consequences of and remedies for costly contracting are less well understood than would otherwise be the case.

What is needed, I submit, is more self-conscious attention to "human nature as we know it." The two behavioral assumptions on which transaction cost analysis relies that both add realism and distinguish this approach from neoclassical economics are (1) the recognition that human agents are subject to bounded rationality and (2) the assumption that at least some agents are given to opportunism.

Bounded rationality needs to be distinguished from both hyperrationality and irrationality (Simon 1978). Unlike "economic man," to whom hyperrationality is often attributed, "organization man" is endowed with less powerful analytical and data-processing apparatus. Such limited competence does not, however, imply irrationality. Instead, although boundedly rational agents experience limits in formulating and solving complex problems and in processing (receiving, storing, retrieving, transmitting) information (Simon 1957), they otherwise remain "intendedly rational."

But for bounded rationality, all economic exchange could be efficiently organized by contract. (The economic theory of comprehensive contracting for unboundedly rational agents has been elegantly worked out.⁸) Given bounded rationality, however, it is impossible to deal with complexity in

⁸ The comprehensive contracting model is widely referred to as the Arrow-Debreu model. For a discussion and an interesting contribution to this literature, see Radner (1968).

all contractually relevant respects. As a consequence, incomplete contracting is the best that can be achieved.

Ubiquitous, albeit incomplete, contracting would nevertheless be feasible if human agents were not given to opportunism. Thus, if agents, though boundedly rational, were fully trustworthy, comprehensive contracting would still be feasible (and presumably would be observed). Principals would simply extract promises from agents that they would behave in the manner of steward when unanticipated events occurred, while agents would reciprocally ask principals to behave in good faith. Such devices will not work, however, if some economic actors (either principals or agents) are dishonest (or, more generally, disguise attributes or preferences, distort data, obfuscate issues, and otherwise confuse transactions), and it is very costly to distinguish opportunistic from nonopportunistic types *ex ante*.

A different way of putting this is to say that while organizational man is computationally less competent than economic man, he is motivationally more complex. Thus, whereas economic man engages in simple self-interest seeking,⁹ opportunism makes provision for self-interest seeking with guile. Problems of contracting are greatly complicated by economic agents who make "false or empty, that is, self-disbelieved threats or promises" (Goffman 1969, p. 105), cut corners for undisclosed personal advantage, cover up tracks, and the like.

That economic agents are simultaneously subject to bounded rationality and (at least some) are given to opportunism does not by itself, however, vitiate autonomous trading. On the contrary, when effective *ex ante* and *ex post* competition can both be presumed,¹⁰ autonomous contracting will be efficacious. Of these two, effective *ex ante* competition is a much easier condition to satisfy: it merely requires that there be large numbers of qualified bidders at the outset. The subsequent transformation of an exchange relation involving large numbers to one involving small numbers during contract execution is what causes problems. Whether *ex post* competition is equally efficacious or breaks down as a result of contract execution depends on the characteristics of the transactions in question, which brings us to the matter of dimensionalizing.

⁹ As Peter Diamond has put it, standard "economic models . . . [treat] individuals as playing a game with fixed rules which they obey. They do not buy more than they can pay for, they do not embezzle funds, and they do not rob banks" (1971, p. 31). Only recently has this standard presumption come under scrutiny, often by making allowance for what insurance specialists refer to as "moral hazard," which is a particular form of opportunism.

¹⁰ Although large numbers of qualified bidders are frequently on a parity at the outset, winning a bid and executing a contract often introduces a disparity between the qualifications of winners and those of nonwinners, with the result that bidding competition involving large numbers is not equally effective at the contract renewal interval. For a discussion, see Williamson (1971; 1975, pp. 27-36; 1979b); and Klein, Crawford, and Alchian (1978).

Dimensionalizing

As set out elsewhere (Williamson 1979b), the critical dimensions for describing transactions are (1) uncertainty, (2) the frequency with which transactions recur, and (3) the degree to which durable, transaction-specific investments are required to realize least cost supply. Only recurrent transactions are of interest for the purposes of this paper,¹¹ hence attention will hereafter be focused on uncertainty and asset specificity, especially the latter.

Asset specificity is both the most important dimension for describing transactions and the most neglected attribute in prior studies of organization. The issue is less whether there are large fixed investments, though this is important, than whether such investments are specialized to a particular transaction. Items that are unspecialized among users pose few hazards, since buyers in these circumstances can easily turn to alternative sources and suppliers can sell output intended for one buyer to other buyers without difficulty. Nonmarketability problems arise when the specific identity of the parties has important cost-bearing consequences. Transactions of this kind may be referred to as *idiosyncratic*.¹²

Asset specificity can arise in any of three ways: site specificity, as when successive stations are located in cheek-by-jowl relation to each other so as to economize on inventory and transportation expenses; physical asset specificity, as where specialized dies are required to produce a component; and human asset specificity that arises from learning by doing. The reason asset specificity is critical is that, once an investment has been made, buyer and seller are effectively operating in a bilateral (or at least quasi-bilateral) exchange relation for a considerable period thereafter. Inasmuch as the value of specific capital in other uses is, by definition, much smaller than the specialized use for which it has been intended, the supplier is effectively "locked into" the transaction to a significant degree. This is symmetrical, moreover, in that the buyer cannot turn to alternative sources of supply and obtain the item on favorable terms, since the cost of supply from unspecialized capital is presumably great.¹³ The buyer is thus committed to the transaction as well. Accordingly, where asset specificity is great, buyer and seller will make special efforts to design an exchange that has good continuity properties.

The site-specific assets referred to here appear to correspond with those

¹¹ For a discussion of the organizational consequences of occasional, rather than recurrent, contracting, see Williamson (1979b, pp. 246-54). Also see n. 32 below.

¹² For earlier treatments of the economics of idiosyncrasy, see Williamson (1975, pp. 9-10, 27-33, 68-74; 1979b, pp. 238-45). Others who are persuaded that idiosyncratic investments are crucial to the understanding of the economics of organization include Klein et al. (1978), Klein (1980), and Teece (1980).

¹³ For a somewhat related discussion of symmetry, see Thompson (1967, pp. 32-35).

