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Methodological Divergence between Coase and Williamson in the History of Transaction Cost Economics

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The work of Ronald H. Coase is often referred to as an original yet primitive version of Williamson's transaction cost economics. However, if we examine both author's seminal texts, Coase's argument differs in noteworthy respects from Williamson's transaction cost economics. Tracing the short history of transaction cost economics, this study clarifies three conflicting characteristics of Williamson's and Coase's versions of transaction cost economics: instrumentalist vs. realistic methodologies, calculative vs. realistic views of economic agents, and the notion of transaction cost as an analytical device vs. being a real cost for agents.

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1. Introduction

Ronald Coase introduced into economics the concepts of transaction costs and property rights in his articles "The Nature of the Firm" (1937) and "The Problem of Social Cost" (1960), respectively. His subsequent research fostered discrete sub-disciplines—transaction cost economics, economics of property rights, and law and economics—now subsumed within "new institutional economics."[1)] Thus, Coase has been regarded as the founder of new institutional economics.[2)] Transaction cost economics became well systematized after Oliver Williamson published *Markets and Hierarchies* (1975), and then it explains organizational structures from simple peer groups to complex corporate entities, as outgrowths of economic agents' choices among alternative institutions. Therefore, today, Coase's insight is sometimes slighted as a mere source or primitive version of transaction cost economics.

Yet, if we systematically align Coase's arguments in "The Nature of the Firm" (1937) with his other works, remarkable differences from Williamson's transaction cost economics appear. Earlier studies have examined Coase's eco-

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1) As Coase states, the term "new institutional economics" was coined by Williamson (Coase 1998, p. 72). It first appeared in his prolific work *Markets and Hierarchies* (Williamson 1975, p. 1).

2) This is an evaluation received for Coase's work. For example, see Medema (1994, p. ix).

nomic thought as a whole (e.g., Medema 1994), his realist methodology (e.g., Mäki 1998), and the methodology of transaction cost economics in general (e.g., Pratten 1997). However, they have neither sufficiently challenged conventional thinking about the relation between Coase and Williamson, nor clarified the substantial distinctions between the two scholars' approaches, methods, and conclusions. While both economists begin by criticizing neoclassical economics and apply the same analytical notion of transaction cost, their methods often seem to conflict. This article traces the development of transaction cost economics from Coase to Williamson and focuses on previously neglected differences between them.

Section 2 presents Williamson's criticisms of Coase and describes the features of Williamson's transaction cost economics. These features are shown in two respects: that of agents based on opportunism and bounded rationality, and the methodology of operationalization and instrumentalism. Section 3 examines the origins of Coase's economic thought at the London School of Economics (LSE) during the 1930s to reveal the sources of his realistic methodology and his view of economic agents in relation to opportunity costs. It also discusses the influences of Arnold Plant and the LSE theory of cost. Section 4 examines differences in Williamson's and Coase's applications of transaction cost, which reflect their respective instrumentalist and realistic methodologies. Section 5 offers conclusions.

2. Williamson's Criticism and Elaboration of Coase's Argument

2.1 Contractual Man with Opportunism and Bounded Rationality

Williamson's *Markets and Hierarchies* (1975) systematically augmented Coase's comparative institutional perspective several decades after Coase's seminal article. Williamson cites Coase among relevant earlier studies—John Commons on transactions and collective behaviors, Friedrich Hayek on information, and George Akerlof and Kenneth Arrow on market failure—and criticizes him in the following manner:

> Coase contends that the firm serves to economize on transaction costs … The underlying factors that explain how and why these economies are realized are not worked out, however, and Coase's discussion of why internal organization does not fully displace the market is even less complete. … I submit that a more complete theory of firms and markets than Coase was able to forge in this seminal study awaits more self-conscious attention to the ramifications of the elementary attributes of human decision makers—of which *opportunism* is one, and *bounded rationality* is another. (Williamson 1975, p. 4; emphasis added)

Williamson proposed the "organizational failures framework" in which human factors (opportunism and bounded rationality) combine with environmental factors (uncertainty/complexity and small numbers) to cause market and organizational

failures (*ibid.*, pp. 8–10).[3] Characteristics of this approach are that on the one hand, he assumes a stronger pursuit of self-interest than is assumed in neoclassical economics and, on the other hand, he introduces Herbert Simon's concept of bounded rationality, undermining the hyper-rationality presumed in neoclassical economics. Williamson writes expansively about the nature of agents' opportunistic behavior:

> Opportunism, however, is more than simple self-interest seeking. It is self-interest seeking with guile: agents who are skilled at dissembling realize transactional advantages. Economic man, assessed with respect to his transactional characteristics, is thus a more subtle and devious creature than the usual self- interest seeking assumption reveals. (*ibid.*, p. 255)

He balances this with an explanation of bounded rationality as follows:

> Bounded rationality involves neurophysiological limits on the one hand and language limits on the other. The physical limits take the form of rate and storage limits on the powers of individuals to receive, store, retrieve, and process information without error. … Language limits refer to the inability of individuals to articulate their knowledge or feelings by the use of words, numbers, or graphics in ways which permit them to be understood by others. (*ibid.*, pp. 21–22)

Since the 1970s, a view of economic agents grounded in these two assumptions has been positioned at the starting point in Williamson's argument, from which he derives the emergence of alternative modes of organization. In *The Economic Institutions of Capitalism* (1985), Williamson coined the term "contractual man" to describe economic agents who possess semi-strong rationality and a strong orientation toward self-interest, in comparison to other approaches to economic organization (Williamson 1985, pp. 43–50).

We must, however, note that at the time of *Markets and Hierarchies* (1975), Williamson also posited the notion of "atmosphere," which he stated is required to bring into question "quasimoral separability" rather than "calculative separability" and to analyze people's attitudinal interactions. He attempted to distinguish "quasimoral involvement" from "calculative involvement" and to retain within the scope of analysis how alternative modes of organization promote either of these two properties (Williamson 1975, pp. 37–39).

> Market exchange tends predominantly to encourage calculative relations of a transaction-specific sort between the parties. Such transactions are carefully metered; unsettled obligations do not carry over from one contract, or related set of transactions, to the next. Internal organization, by contract, is often better able to

[3] In addition to these four factors, the "organizational failures framework" includes "information impactedness" and "atmosphere" (Williamson 1975, pp. 20–40). The former implies asymmetry of information that arises mainly due to uncertainty and opportunism (*ibid.*, pp. 31–37), and we explain the latter below.

> make allowance for quasimoral involvements among the parties. … Recognition that alternative modes of economic organization give rise to differing exchange relations, and that these relations themselves are valued, requires that organizational effectiveness be viewed more broadly than the usual efficiency calculus would dictate. (*ibid.*, pp. 38–39)

Thus, in addition to bounded calculative rationality of agents, Williamson has acknowledged the alternative behavioral principle of self-interest, despite its limited role in *Markets and Hierarchies* (1975) (*ibid.*, p. 39). Although he later reargued the economic lessons of atmosphere (Williamson 1993, pp. 480–481), he has not developed the concept further. Consequently, Williamson focused exclusively on the calculative aspect of human behavior.

2.2 Calculative Approach with Operationalization and Instrumentalism

What led Williamson to specify these behavioral assumptions was his methodology of "operationalization."[4] He maintained that Coase's article was not more widely used because "[t]ransaction costs … are not *operationalized* in a fashion that permits one to assess the efficacy of completing transactions as between firms and markets in a systematic way" (Williamson 1975, p. 3; emphasis added). In his review of Coase's *The Firm, the Market, and the Law*, Williamson reasserted this evaluation of Coase in greater detail:

> … Coase has been misunderstood because he did not make his argument as accessible as it might be, and because the *operational* content of transaction costs is obscure. Coase eschews geometry or mathematics … and instead uses ponderous arithmetic examples to explain his theories. … A chronic problem with Coase's work has been that the conception of transaction cost is vague. … Although Coase evidently acknowledges the need for *operationalization*, he has yet to address himself to this in a systematic way. (Williamson 1989a, p. 229; emphasis added)[5]

Then he describes the key steps of operationalization:

> (1) identifying the behavioral assumptions that are responsible for transaction costs and developing their contractual ramifications; (2) proposing a basic unit of analysis; and, (3) developing the logic of microeconomic organization—whereby some transactions are *predictably* organized one way and others are organized another—and discovering and explicating distinctive patterns or regularities in the process. (*ibid.*, pp. 229–230; emphasis added)

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[4] Recently, having inspired by Solow's terse speculation (2001), Williamson referred to his methodology as "pragmatic methodology" which takes four steps: keep it simple; get it right; make it plausible; and predictions and empirical testing (Williamson 2009a). However, this is what he previously referred to as "operationalization."

[5] Coase himself has accepted Williamson's criticism and has adduced two reasons for it. First, economists were too conservative to incorporate transaction costs into standard economic theory. Second, the interrelationships that govern the mix of market and hierarchy were too complex to identify the factors of the outcome without further empirical work (Coase 1992, p. 718).

Thus, for Williamson, transaction cost economics ought to adopt a general strategy that identifies a transaction as the basic unit of analysis and predicts the emergence of different modes of governance (market, hybrid, private bureau, and public bureau) based on different attributes of transactions (frequency, uncertainty, and asset specificity) (Williamson 1997, pp. 6–7).

Although Williamson has never mentioned any philosophical source for his concept of operationalization, he might have been inspired by Samuelson's version of "operationalism." In *Foundations of Economic Analysis* (1947), Samuelson expressed strong concern for "operationally meaningful theorems," by which he meant "a hypothesis about empirical data which could conceivably be refuted, if only under ideal conditions" (Samuelson 1947, pp. 3–4). Samuelson's operationalism was a prescriptive statement that economists should proceed by deriving falsifiable hypotheses (Caldwell 1982, p. 190), and it offered a means of defending the use of mathematics from the criticism of tautology (Boland 2008, p. 382). In a similar fashion, Williamson expressed concern about the tautological status of transaction costs:

> There is none the less a grave problem with broad, elastic and plausible concepts —of which 'transaction cost' is one … —in that they lend themselves to *ex post* rationalization. Concepts that explain everything explain nothing. … There being too many degrees of freedom after the fact, the pressing need was to delimit the concept of transaction costs, thereby to give it operational (predictive) content before the fact. (Williamson 1997, p. 13)

Williamson acknowledges that empirical studies and tests of transaction cost economics have been few and are often crude; however, he believes its limitations in prediction and measurement will be mitigated as better models and further data become available (Williamson 1989b, p. 174).

With its emphasis on prediction, Williamson's methodology resembles Friedman's instrumentalism (Friedman 1953, pp. 3–43) in making unrealistic assumptions about human behavior as the first step of operationalization.[6] While diagnosing one of the limitations of transaction cost economics as "instrumentalist excesses" or "instrumentalism" (Williamson 1985, pp. 390–392), he defends these behavioral assumptions in the following manner:

> [T]he human agents who populate transaction cost economics are highly calculative. That is plainly not an attractive or even an accurate view of human nature. … To be sure, rationality can be and sometimes is overdone. Hyperrationality is mainly a fiction and/or a pathology. But … much of the success of economics in relation to the other social sciences occurs because calculativeness is presumed to be present in nontrivial degree. … This unattractive view of human nature nevertheless gen-

[6] In a recent work, Williamson explicitly assented to Friedman's methodology: "Whereas the conceptual framework out of which transaction-cost economics works differs from orthodoxy … , it is nevertheless in agreement with F53 [Friedman 1953] that predictions attended by empirical testing are the cutting edge" (Williamson 2009b, p. 252).

> erates numerous refutable implications. (*ibid.*, pp. 391–392)

In his view, social relationships such as trust could be regarded primarily as a "farsighted calculative response," and therefore a sociological perspective is unnecessary (*ibid.*, pp. 453–454, 485–486). By the same token, considerations of power (as in organization theory) and justice (as in law) yield to or are subsumed under the economizing calculus (Williamson 1996, pp. 7–8). In the end, he makes light of the limitations of such a perspective:

> I contend that the excesses to which calculativeness is sometimes given are usually remediable. I furthermore contend that the analytical reach of the calculative approach to economic organization is *extended rather than diminished by admitting to these limitations*. Once the excesses to which calculativeness is given are displayed and understood, the distortions can be anticipated and can thereafter be folded in at the design stage. A (more farsighted) calculative response to the (myopic) excesses of calculativeness thereby obtains. (Williamson 1993, pp. 453–454; italics in the original)

Indeed, Williamson believes "calculativeness" is a characteristic of the economic approach and is the general condition for extending economics into related social sciences (*ibid.*, p. 456).[7] He considers price theory, property rights theory, agency theory, and transaction cost economics as variants of calculative economic reasoning (*ibid.*, pp. 456–457). In the next section, we examine Coase's theory of institutional structure and compare it with Williamson's transaction cost economics.

3. Salient Features of Coase's Institutional Thinking

3.1 Realistic Approach with Realism in Assumptions

The features of Coase's institutional theory took shape at LSE in the 1930s, where his academic career began. Coase entered its Department of Commerce in 1929 and studied under Arnold Plant, an applied economist interested in industrial organization. Plant was a major contributor to the economics of patents and copyrights who examined the economic role of property and ownership (Coase 1982, pp. 33–34; Coase 1987, p. 891). Plant had been a student of Edwin Cannan at LSE and retained Cannan's interest in institutions and his commonsense approach in teaching (Coase 1982, p. 33).

Plant's teachings decisively influenced Coase's economic thought. As Coase writes, "his [Plant's] main influence was in bringing me to see that there were many problems concerning business practices to which we had no satisfactory answer" (*ibid.*, p. 34). Steven Cheung also indicates that Plant's influence determined Coase's career-long perspective on economics.[8]

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[7] According to Williamson, this is the strategy that Gary Becker has applied widely and effectively (Williamson 1993, p. 456).

[8] In a similar fashion, Williamson also emphasizes Plant's influence on Coase: "Arnold Plant, who taught at the London School of Economics, played a central role in broadening Coase's under

> Influenced by his mentor, Arnold Plant, Coase developed a deep conviction that one cannot understand the behaviour of something unless he sees and touches its reality. Throughout his academic career he has persistently turned from what he calls 'blackboard economics' to economics relevant to the real world. (Cheung 1987, p. 455)

Under Plant's supervision, Coase visited the U.S. in 1931–32 to receive a Cassel Travelling Scholarship (Coase 1982, p. 31). Having learned from Plant's lectures the different ways in which industries were organized, he decided to research the vertical and lateral integration of the U.S. industry and develop a theory to explain them (Coase 1992, p. 715). By summer 1932, he had become aware of the costs of using the price mechanism and had already designed the framework of "The Nature of the Firm" (*ibid.*, pp. 715–716).

In "The Nature of the Firm" (1937), Coase questioned the *raison d'être* of the firm and answered that "[t]he main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism" (Coase 1937, p. 390). However, subsequent economists primarily studied what has become known as the Coase Theorem, which unfortunately results in the unrealistic world of zero transaction cost (Coase 1988a, p. 15). Half-a-century later in *The Firm, the Market, and the Law* (1988), Coase sought to clarify his position, complaining that "[m]y point of view has not in general commanded assent, nor has my argument, for the most part, been understood" (*ibid.*, p. 1).

He asserts that economists have not sufficiently studied the entities that make decisions because they have been preoccupied with the logic of choice and have divorced the theory from its subject (*ibid.*, p. 3). Specifically "[i]n mainstream economic theory, the firm and the market are, for the most part, assumed to exist and are not themselves the subject of investigation" (*ibid.*, p. 5). When he refers to institutions, he always expresses his realist perspective:

> Markets are institutions that exist to facilitate exchange, that is, they exist in order to reduce the cost of carrying out exchange transactions. In an economic theory which assumes that transaction costs are nonexistent, markets have no function to perform … . And when economists do speak of market structure, it has nothing to do with the market as an institution but refers to such things as the number of firms, product differentiation, and the like, the influence of the social institutions which facilitate exchange being completely ignored. (*ibid.*, pp. 7–8)

Here what Coase means by the "market as an institution" is fairs, exhibition halls, commodity exchanges, and stock exchanges (*ibid.*, pp. 7–9). In the modern economy, in particular, commodity exchanges and stock exchanges are usually organized by members of the exchange, and all exchanges regulate activities of traders in these markets. They also provide mechanisms to settle disputes and

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standing of the economic enterprise and in deepening his interests in the importance of property and organization" (Williamson 2000, pp. 48–49).

impose sanctions (*ibid.*, p. 9).

The work thus demonstrates Coase's lifelong interest in actual institutions, which he had acquired while studying under Plant. Moreover, Coase criticizes any economic argument that neglects actual institutions and assumes ideal economic systems as "blackboard economics."

> The majority of economists do not see the problem in this way. They paint a picture of an ideal economic system, and then, comparing it with what they observe (or think they observe), they prescribe what is necessary to reach this ideal state without much consideration for how this could be done. The analysis is carried out with great ingenuity but it floats in the air. It is, as I have phrased it, "blackboard economics." There is little investigation of how the economy actually operates … . (*ibid.*, pp. 28–29)

Here and elsewhere, Coase's sustained interest in actual institutions and his dismissal of unrealistic theoretical assumptions are apparent.[9] In another work, he finds Friedman's methodology unsatisfactory (Coase 1988b, p. 16) and asserts the significance of realistic assumptions:

> The view that the worth of a theory is to be judged solely by the extent and accuracy of its predictions seems to me wrong. Of course, any theory has implications … But a theory is not like an airline or bus timetable. We are not interested simply in the accuracy of its predictions. A theory also serves as a base for thinking. It helps us to understand what is going on by enabling us to organize our thoughts. (*ibid.*, p. 64)

Coase prefers a theory that provides insight into operations of a system but predicts weakly over a theory that predicts accurately but provides little insight (*ibid.*). He advocates a realistic methodology[10] such that "realism in our assumptions is needed if our theories are ever to help us understand why the system works in the way it does" (*ibid.*, p. 65).

When it comes to the relation to Williamson's "calculativeness," Coase refers to a similar idea of the "measuring rod of money" in a manner that relates to the calculative aspect of economic affairs:

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[9] However, Coase argued that we should not merely observe and describe actual institutions. This is evident in the following criticism of old institutional economics: "John R. Commons, Wesley Mitchell, and those associated with them were men of great intellectual stature, but they were anti-theoretical, and without a theory to bind together their collection of facts, they had very little that they were able to pass on." (Coase 1998, p. 72). What he objects to is "mindless abstraction or the kind of abstraction which does not help us to understand the working of the economic system" (Coase 1993, p. 97).

[10] Mäki (1998, pp. 6–7) remarks that we should distinguish *realism* (as a philosophical theory of scientific theories) and *realisticness* (as a property of theories and their elements). In this article, although we mainly refer to the latter when we assert that Coase follows a *realistic methodology*; we also show that Coase is a *realist* with regard to institutional costs (in Section 4.2 below) and entities such as firms, markets, and agents.

> Economics, it must be admitted, does appear to be more developed than the other social sciences. But the great advantage which economics has possessed is that economists are able to use the 'measuring rod of money'. This has given a precision to the analysis, and since what is measured by money are important determinants of human behaviour in the economic system, the analysis has considerable explanatory power. Furthermore, the data (on prices and incomes) is generally available, so that hypotheses can be examined and checked. (Coase 1977, p. 489)

As we see in the next section, this would explain why Coase has been concerned with cost theory and why it is inseparably related to his view of economic agents and institutions. In contrast to Williamson's "as if" way of explaining his calculative approach, however, Coase seems aware of the limitations of such an approach and believes that economics should be bounded by the "measuring rod of money" (*ibid.*, pp. 489–490). In this respect, Coase contrasts with Williamson, who adopts an instrumentalist methodology that follows the so-called economic imperialism.

3.2 "Man As He Is" Focusing on Opportunity Costs

LSE also influenced Coase's inquiries into cost theory, particularly the concept of opportunity cost derived from Frank Knight and Philip Wicksteed, expounded by Lionel Robbins and influenced by Friedrich Hayek (Coase 1990, p. 8). In a paper, reviewing economics at LSE during the 1930s, Coase indicated how that period influenced his understanding of cost theory.

> [T]he two books which Robbins recommended that we all read were Wicksteed's *Commonsense of Political Economy* and Knight's *Risk Uncertainty and Profit* … These two books provided an excellent training for the young economists at LSE and it was, I believe, our close study of them which gave us such a firm hold on cost theory, leaving aside whether what emerged should be considered, as Buchanan contends, as a view special to LSE. (Coase 1982, p. 33)

Coase retained the LSE tradition of cost theory and presented his thoughts in a series of articles for accountants titled "Business Organization and the Accountant." He emphasized the significance of opportunity costs in business practices.[11)]

> In this article, the notion of costs which will be used is that of "opportunity" or "alternative" cost. The cost of doing anything consists of the receipts which could have been obtained if that particular decision had not been taken. When someone says that a particular course of action is "not worth the cost," this merely means that he prefers some other course—the receipts of the individual, whether monetary or non-monetary does not matter, will be greater if he does not do it. (Coase

[11)] As for the application of cost theory to business practice, we again find Plant's influence on Coase: "The application of these [cost theory's] views to business problems was the special interest of a group of economists at L.S.E. working under Professor (now Sir Arnold) Plant of which I was a member along with Edwards and R. F. Fowler, the two others with whom I worked most closely" (Coase [1938] 1973, pp. 97–98).

> [1938] 1952, p. 123)

Coase contended that this concept of cost was the only one useful for solving business problems, because it focuses on alternative available courses of action (*ibid.*). Furthermore, this concept of cost is inseparable from specific business decisions, as he explains:

> [E]mphasis is placed on its close connection with the making of decisions. … One can discuss the meaning of the term "avoidable cost" but what costs *are* avoidable and their actual measurement can only be determined with reference to a particular decision. … It seems best, therefore, … to try to discover what costs would be avoidable if a particular course of action were taken or, … what additional costs would be incurred if that action were carried out. (*ibid.*, pp. 141–142; italics in the original)

As Buchanan aptly pointed out, the late 1920s and 1930s were periods of remarkable development in cost theory at LSE, and Coase's cost theory is distinctive for asserting that costs should be related to specific choices (Buchanan 1969, pp. 26–29).

Coase later stated that these articles had been initially intended to address the business issue of vertical integration (the make-or-buy decision), but the introductory explanation of concepts and terminology came to occupy the entire set of articles (Coase 1990, p. 7). In this regard, we can infer that "Business Organization and the Accountant" (1938) provides a fundamental explanation of the notion of transaction costs in "The Nature of the Firm" (1937). Against Williamson's criticism that Coase does not clearly specify his behavioral assumptions, we must note that Coase's transaction cost theory is based on his theory of opportunity cost. Having worked on both accounting and the theory of firm during the 1930s (Coase 1990, p. 3), Coase inseparably relates the theory of institutional structure to that of institutional opportunity costs (transaction and organizing costs). Coase could be interpreted as espousing a kind of "opportunism" that prompts agents to consider all opportunity costs in the real world; however, his opportunism differs from that of Williamson, which hypothetically assumes that agents always exploit the best opportunity in order to predict the alternative modes of organization.

In *The Firm, the Market, and the Law* (1988), Coase also clarified his view of economic agents in relation to costs. He criticized the view of economic agents held by the adherents of neoclassical economics, i.e., the assumption that holds normal price theory together:

> The analysis is held together by the assumption that consumers maximize utility (a nonexistent entity which plays a part similar, I suspect, to that of ether in the old physics) and by the assumption that producers have as their aim to maximize profit or net income (for which there is a good deal more evidence). (*ibid.*, p. 2)

In fact, the rational utility maximizer of economic theory bears no resemblance to ordinary individuals (*ibid.*). Coase insisted that modern institutional economics

should begin with "man as he is" (Coase 1984, p. 231). He envisaged that the study of sociobiology eventually will illuminate the whole picture of human nature (Coase 1978, p. 244; 1988, p. 4), but at the moment, we must be content with limited knowledge:

> [F]or groups of human beings, in almost all circumstances, a higher (relative) price for anything will lead to a reduction in the amount demanded. This does not only refer to a money price but to price in its widest sense. Whether men are rational or not in deciding to walk across a dangerous thoroughfare to reach a certain restaurant, we can be sure that fewer will do so the more dangerous it becomes. … [T]he availability of a less dangerous alternative, say, a pedestrian bridge, will normally reduce the number of those crossing the thoroughfare, nor that, as what is gained by crossing becomes more attractive, the number of people crossing will increase. The generalization of such knowledge constitutes price theory. (Coase 1988a, pp. 4–5)

Coase therefore regards the assumption that economic agents are rational utility maximizers as unnecessary and sterile.[12] His view of economic agents applies not only to consumers as cited above, but also to entrepreneurs or producers. He presupposed a looser tendency that "by and large, people choose to perform those actions which they think will promote their own interests" (*ibid.*, p. 27). Therefore, it follows that "[t]he existence of transaction costs will lead those who wish to trade to engage in practices which bring about a reduction of transaction cost" (*ibid.*, pp. 6–7) and preferred institutional structures emerge. Here again, Coase's view of economic agents contrasts with that of Williamson, who ideally assumes a strong tendency to pursue an opportunistic self-interest.[13]

4. Instrumentalist and Realist Uses of Transaction Cost

4.1 Transaction Cost as an Analytical Instrument for Economists

Methodological differences between Williamson and Coase engender different uses of the notion of transaction cost. Williamson's instrumentalist tendency is also reflected in his concept of transaction cost. Williamson inherited Arrow's simple definition of transaction cost—"transaction costs are costs of running the economic system" (Arrow 1970, p. 60)—and compares it with "friction" in physics.

> Transaction costs are the economic equivalent of friction in physical systems. The

[12] Therefore, in contrast to Williamson, Coase objects to Becker and Posner's view that economists' decisive advantage in handling problems is their treatment of man as a rational utility maximizer (Coase 1977, p. 488).

[13] In relation to this respect, we agree with Pratten that "whereas Williamson perceives the stress upon operationalization as a decisive strength over competing approaches, … it effectively constrains his welcome attempts to promote within economics the analysis of social institutions and the development of a richer account of human agency" (Pratten 1997, p. 782). Nevertheless, he seems unaware of the divergence between Coase and Williamson, affixing the same label of transaction cost economics to both (*ibid.*, p. 798, note 1).

> manifold success of physics in ascertaining the attributes of complex systems by assuming the absence of friction scarcely require recounting here. Such a strategy has had obvious appeal to the social sciences. Unsurprisingly, the absence of friction in the physical systems is cited to illustrate the analytic power associated with 'unrealistic' assumptions … But … [t]here is, for example, no reference whatsoever to transaction costs … in Milton Friedman's famous methodological essay (1953) or in other post-war treatments of positive economics. (Williamson 1985, p. 176)

Following physics, Williamson first supposes an ideal world with no friction (no transaction costs) and then takes friction (positive transaction costs) into account to discover economic problems in the real world.

> Transaction cost economics frequently invokes the friction of zero transaction costs as a device by which to engage a systems view of a problem, thereby better to expose core issues. It immediately thereafter asks, however, wherein do positive transaction costs arise and why? Even more pertinent is to establish when and why differential transaction costs arise between alternative modes of organization. The friction of zero transaction costs is used thus as an entering wedge and is always and everywhere followed by an insistence on studying the world of positive transaction costs. (Williamson 1997, p. 5)

In this sense, the notion of transaction cost serves primarily as an analytical instrument for economists, not merely as a cost for economic agents to calculate. Williamson claims that he derives such an approach from what is essential in Coase (Williamson 1994, p. 202). Although, as we saw above, Coase blames neoclassical economics for assuming zero transaction cost, Williamson regards the assumption as a useful beginning and rejects Coase's criticism.

> Plainly, policy analysis needs to start somewhere, and the frictionlessness assumptions on which much of neoclassical economics relies is often a useful beginning. It is one thing, however, to begin with frictionlessness and another thing to end there. If prescriptions derived from neoclassical theory are not only impractical but invite unwanted side effects … then further steps need to be taken: More practical solutions that mitigate the unwanted effects need to be devised. Taken in this light, who could object? (Williamson 1989a, p. 225)

Considering this aspect of Williamson's methodology, when he commences his analysis by assuming "in the beginning there were markets" (Williamson 1975, p. 20), he seems to have an idealized, frictionless (i.e., without transaction cost) view of markets.[14] Thereafter, transaction cost economics proceeds to "operationalize"

[14] This is also evident in the beginning of a paper where Williamson presented a basic concept of *Market and Hierarchies* (1975): "The principal purposes of this paper are to examine the factors which induce a shift of transactions from market to internal organization and, within internal organization, to explain the types of hierarchical relations that predictably emerge. It is generally

transaction costs, and his analytical focus shifts from transaction costs themselves to the causes and effects of organizational failure due to agents' behaviors and transactions' attributes.

4.2 Transaction Cost as a Real Cost for Economic Agents

In contrast, Coase, who presents a realistic view of institutions and agents, consistently views transaction costs as actual costs confronting relevant agents, and he shows that such opportunity costs are embedded in the process of choosing a course of action among alternatives. In other words, transaction and organizing costs are not analytical instruments for predictions, but rather social realities unconstituted by the theories. Therefore, his main concerns are how economic agents recognize these costs and in turn how those costs lead them to build institutional structures. Coase specifically indicated difficulties in recognizing and calculating costs:

> It goes without saying that within the business organization, information must be made available which enables these variations [of costs] to be estimated. … there are certain analytical difficulties which need to be faced. These difficulties centre around the fact that costs and receipts cannot be expressed unambiguously in money terms since courses of action may have advantages and disadvantages which are not monetary in character, because of the existence of uncertainty and also because of differences in the point of time at which payments are made and receipts obtained. (Coase [1938] 1952, p. 116)

How can these costs be identified in a corporate organization? In "Accounting and the Theory of the Firm" (1990), Coase emphasized the role of accounting systems within the firm, illuminating the relationship between his theories of cost and the firm, both of which he worked on during the 1930s.

> In a firm, men also make decisions independently of those that others are making (there is delegation of responsibility and all decisions are not the product of a single mind) and when people in a firm use its resources, they often need to be given some figure representing their costs, so as to be able to compare it with receipts. Since using a resource denies its use to others, the figure for cost should represent what it would yield elsewhere in the business. In this planned society, the firm, costs do not, in the main, arise directly out of the operations of the market but are computed and provided by the accounting system. … This internal system takes the place of the pricing system of the market. (Coase 1990, p. 11)

Given multiple individual decision makers within a firm, the accounting system is not an elective function, but has a substantive and crucial role; it moderates the

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acknowledged that a prima facie case for the development of nonmarket (or quasi-market) forms of economic organization can be said to exist whenever the market, if used to complete a set of transactions, experiences 'frictions'" (Williamson 1973, p. 316).

problems of information and uncertainty problems in recognizing cost. Furthermore, he states that the performance of the accounting system should differ between transactions and between firms, which consequently affects the performance of the firm itself.

> [D]oing this [accounting calculation] is, no doubt, more difficult in some circumstances than in others—and we need to know what these circumstances are. When it is difficult, because of the particular activities or combination of activities in which the firm is engaged, the costs of organizing will be greater—either more mistakes will be made or additional costs will be incurred to avoid making them. As a result, the activities which we find firms undertaking must be influenced to some degree by their effect on the efficiency with which the accounting system operates. (*ibid.*, p. 12)

Therefore, Coase concludes that "[t]he theory of the accounting system is part of the theory of the firm" (*ibid.*). In this view, the role of intra-firm differences for determining institutional structure of production would become huge for the following reason:

> [W]hile transaction cost considerations undoubtedly explain why firms come into existence, once most production is carried out within firms and most transactions are firm-firm transactions and not factor-factor transactions, the level of transaction costs will be greatly reduced and the dominant factor determining the institutional structure of production will in general no longer be transaction costs but the relative costs of different firms in organizing particular activities. (*ibid.*, p. 11)

Thus, Coase's comparative institutional perspective is consistently based on cost theory, and he describes the complicated relationship among markets, firms, and decision makers within the economic system from the perspective of an institutional (as well as non-institutional) cost and revenue network.[15] In accordance with Coase's institutional thinking, such institutional costs and social institutions are the two sides of the same coin; both constitute the social realities for economic agents, independently of our theoretical constructions. This was possible only because Coase began with an analysis of actual institutions and assumed a view of economic agents based on opportunity costs. The result is a wider perspective of economic systems than is offered by Williamson's transaction cost economics.

5. Conclusion

This article has traced the development of transaction cost economics from

[15] It can be said that the focus of "The Nature of the Firm" (1937) lies exactly in this point, as Coase writes: "It can, I think, be assumed that the distinguishing mark of the firm is the supersession of the price mechanism. It is, of course, as Professor Robbins points out, 'related to an outside network of relative prices and costs,' but it is important to discover the exact nature of this relationship" (Coase 1937, p. 389).

Coase to Williamson in order to clarify the divergence between their approaches, particularly in their methodological positions and their views of economic agents.

Section 2 examined Williamson's criticism of Coase's theory of the firm, from which the features of Williamson's transaction cost economics have arisen. First, we noted Williamson's calculative view of economic agents based on opportunism and bounded rationality. Second, we demonstrated that his strategy of operationalization is operationalist in seeking falsifiable hypotheses and instrumentalist in emphasizing prediction based on unrealistic assumptions.

Section 3 returned to LSE of the 1930s, where Coase's career started, and examined its influence on Coase's institutional economics. We indicated that Arnold Plant's influence led Coase to build his realistic approach and that the theory of opportunity cost unfolding at LSE during those years shaped his comparative institutional perspective and his view of economic agents. In both aspects, the divergence of Coase from Williamson was confirmed.

Based on preceding arguments, Section 4 dealt with the different uses of the notion of transaction cost in the approaches of both Williamson and Coase. Williamson regards transaction costs as the economic counterpart of friction in physical systems, uses them merely as an analytical instrument for economists to identify where problems (frictions) reside, and later shifts his analytical focus to agents' opportunistic behavior in relation to the transaction attributes. In contrast, Coase interprets transaction costs as real costs confronting relevant agents, and his main concern has been how agents' recognition of such costs leads to institutional structuring. Therefore, Coase views economic institutions in terms of interrelated institutional costs, a view that hardly seems to be captured in Williamson's transaction cost economics.

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