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Metaphors of Transaction Cost Economics

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Abstract Metaphors are part of our daily lives as they help us understand the world. Economics, as with other areas of knowledge, cannot go without metaphors. Transaction Cost Economics (TCE)—a prominent theoretical framework on economic organisation—is no different: it has been built on a set of metaphors. This article gathers and discusses three of the key metaphors of TCE—transaction costs as frictions, human beings as "contractual men," and economic selection between mechanisms of governance. How they fit together and help the construction of TCE are the issues at hand.

Keywords: transaction cost economics, metaphors, Oliver Williamson, theory of the firm, institutions, institutional economics

INTRODUCTION

Economics, as with other discourse communities, relies on metaphors to build knowledge. Elasticity, social capital, economic growth, technological spill-over, production functions and transaction costs as frictions are just but a tiny sample. Metaphors are part of our daily lives helping us understand the world. They become shared habits or frames of thought that shape people's interpretations, inclinations and actions.

As with any other intellectual construction, Transaction Cost Economics (TCE) has been built on a set of metaphors. Within and around the modern field of economics of organisation, TCE has been established as a milestone and the works of Oliver Williamson in particular have given the field a new breadth of life since the 1970s.

As a result, TCE has been at the centre of many conversations in economics, including methodological ones (e.g. Foss and Foss 2000; Ménard

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2001; Mäki 2004). These methodological debates can surely benefit from more work on the linguistic construction of TCE (see Pessali 2006). Trying to explore this path, this article examines three key metaphors upon which TCE has been built: transaction costs as frictions, human beings as "contractual men," and natural selection of mechanisms of governance. What role do they play in TCE's theoretical framework and how do they relate?

In order to deal with these questions, the paper has been organised as follows. The next section provides a short introduction to the study of metaphors and delineates the range of metaphors considered. In what follows, the three selected metaphors of TCE are discussed. Some final notes close the essay.

METAPHORS

According to Aristotle (1941: 1457b7), a "metaphor consists in giving the thing a name that belongs to something else; the transference being either from genus to species, or from species to genus, or from species to species, or on grounds of analogy." It is an attempt to explain something we do not know well in terms of something we think we know better (Black 1993). Christine Brooke-Rose's (1970: 23–24) survey settles on a plain definition of metaphor as "any replacement of one word by another, or any identification of one thing, concept or person with any other."

Since Ramus and Descartes, what we know as positivism has gained momentum in the philosophy of science. It has persuaded many scholars that metaphors are language artefacts for entertaining and deceiving, and that (good) science, as if by definition, is clear of such devices. Many philosophers have attempted to create a corresponding aseptic language through mathematical systems. They have tried, at the same time, to establish that the study of natural language and argumentation is irrelevant to serious scientific enquiry.

From the mid 1950s, however, there has been increasing recognition that all languages are incomplete systems and have some degree of vagueness and ambiguity. Because science cannot be free of language, it needs to deal with argumentation and less than perfect symbolical exchanges. Knowledge is produced by the articulation of arguments through models, stories, facts and logic (McCloskey 1993: 138), has different sources (e.g. induction, deduction and abduction) and is established through persuasion of relevant audiences.

Such a view does not imply that scientific argumentation cannot be rigorous; it just implies that standards of rigour are established by those taking part in the relevant conversation and thus subject to the imperfections

of language (Fernández 2000). Arguments in all their forms need scrutinising in light of such limitations and of the demands of those involved in the conversation.[1]

In this context, metaphors used by scientists are not only language ornaments, but constituent parts of how a research object is seen in concrete terms. Metaphors are an essential tool for knowledge creation and maintenance, as elements are transferred between different realms of understanding. George Lakoff and Mark Johnson (1980: 3) even argue that our conceptual system is primarily metaphoric:

> Metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature ... the way we think, what we experience, and what we do every day is very much a matter of metaphor.

As tools of reason, metaphors help us pull together our views and perceptions of reality. They take part in shaping our ideas and, thus, in shaping our daily interaction with the world.

Some authors claim that metaphors may help to develop an idea in its beginnings, but can be disposed of as the idea matures.[2] They become "dead metaphors." This, however, may be a misleading metaphor in itself. Just as economists of today do not realise their ideas usually reflect ideas from defunct economists, dead metaphors live on in ideas they helped articulate. In other words, metaphors have a structuring effect that passes on an interpretative frame to newcomers and forthcoming generations. This, of course, does not mean that fresher metaphors will not challenge the established ones at some point.

Philosophy and literary studies were arguably the first fields of modern inquiry to recognise the role of metaphor in the construction of knowledge, and above all in scientific theorising.[3] Philosophers and literary critics targeted many scientific fronts, which started to internalise the study of metaphor in their own fields.[4]

In economics, some authors (e.g. Henderson 1982; McCloskey 1985) started to acknowledge and study the role of metaphor in the work

1 This concern has been identified as a rhetorical or linguistic turn in western culture, reaching also the scientific arena (Fuller 1993).

2 According to Arida (2003: 40): "The metaphor reaches maximum rhetorical efficiency early in the debate or in presenting original propositions; as the debate progresses, one tries to rely less on it."

3 Black (1962), Hesse (1963) and Perelman and Olbrechts-Tyteca (1969) are a few classics.

4 For a small sample, see Nelson *et al.* (1987).

of their fellow economists, opening the field for further exploration.[5] Economists converse with their fellows and with other audiences, striving for intellectual endorsement, and conversations are mostly made of language resources by definition. Among them, metaphors have been stressed as essential to the construction and presentation of arguments.

Following the arguments of Klamer & Leonard (1994) and McCloskey (1995), metaphors are studied here as an inevitable part of theory construction. Being unavoidable, they can either help or hinder further theoretical developments as much as they can help or hinder communication with (and persuasion of) other scholars.

The metaphors considered here are based on the typology suggested by Klamer and Leonard (1994). They identified three main kinds of metaphors in science: pedagogical, heuristic and constitutive. Pedagogical metaphors "serve to illuminate and clarify an exposition and could be omitted without affecting the argumentation as such," like "time is money" (Klamer and Leonard 1994: 31). For this reason, they are of little interest here. Heuristic metaphors are "more influential" and "thought-propelling," and "serve to catalyze our thinking, helping to approach a phenomenon in a novel way." They lend themselves to more "systematic and sustained development," as in the case of "human capital" (Klamer and Leonard 1994: 32). Still more important are constitutive metaphors. These "work on an even more fundamental level. Constitutive metaphors are those necessary conceptual schemes through which we interpret a world that is either unknowable ... or at least unknown," like when one talks about "the genetic code" (Klamer and Leonard 1994: 39). The last two kinds of metaphor—heuristic and constitutive—are the ones of interest here.

The discussion that follows concentrates on three metaphors of TCE that are essential to the systematic development of a "distinctive worldview," as Williamson (1975: xii) suggested. The first is the metaphor of transaction costs as frictions, which is at the very core of Williamson's definition of transaction costs. The second is the metaphor of economic agents as "contractual men," which defines the relevant human traits to be taken into account when analysing decision-making and choices regarding institutional arrangements. And third, the metaphor of natural selection between mechanisms of governance on which the logic of transaction cost minimisation ultimately relies.

5 See for instance Klamer *et al*. (1988), Samuels (1990) and Dolfsma (2001).

The essay explores how these metaphors take part in the construction of TCE and help promote identification with or differentiation towards other approaches. It draws mostly, though not exclusively, on the main theoretical chapters of Williamson's trilogy (1975, *Markets and Hierarchies*, or MH; 1985, *The Economic Institutions of Capitalism*, or EIC; and 1996, *The Mechanisms of Governance*, or MG). They are where the main theoretical pillars of TCE are presented and, arguably, where scholars first search for a hint of their relevance.

THE CONSTITUTIVE METAPHOR OF TRANSACTION COSTS AS FRICTIONS

Over the twentieth century, economists invested heavily in modelling idealised transactions that occurred at no costs to the underlying parts. However, as argued by Williamson, economic organisation is fundamentally dependent upon the costs of transacting. Transaction costs, as he explains in MH (20; emphasis added), are like frictions in physics:

> Although failures can be and often are assessed with respect to a frictionless ideal, my concern throughout the book is with comparative institutional choices. Only to the extent that *frictions* associated with one mode of organization are prospectively attenuated by shifting the transaction ... to an alternative mode can a failure be said to exist. Remediable *frictions* thus constitute the conditions of interest.

The metaphor of transaction costs as frictions is straightforward in establishing a picture of how the world of TCE is to be mentally drawn or framed. In EIC, the metaphor is used to state what exactly transaction costs are (EIC: 1; emphasis added): "In mechanical systems we look for *frictions ... The economic counterpart of friction is transaction cost*." The metaphor is made stronger through an analogy here: frictions constitute the world of mechanical systems as much as transaction costs constitute the world of TCE. A key association promoted by the metaphor is that both frictions and transaction costs are ubiquitous, and can be reduced but not eliminated. What can be achieved in reducing them is precisely what determines how a mechanical system, or economic organisation, is designed and performs.

Williamson explained in MG (p. 350) that his engineering studies showed him the relevance of frictions:

> One of the benefits of my engineering training is that it dealt with real problems and demanded disciplined answers. Perfect gas laws and frictionless systems may be the

> place to start, but the study of hypothetical ideals quickly gave way to the engineering realities of friction, resistance, turbulence, and the like.

The metaphor draws on a notion from physics, a subject highly esteemed by mainstream economics. In TCE, however, the engineer's pragmatic attitude towards physics is added. But before discussing the influence of Williamson's engineering approach on the metaphor, it is necessary to discuss how the metaphor fits within economics.

TCE, Frictions and Economics

The metaphor of transaction costs as frictions permeates TCE from its theoretical inception. Williamson said in 1971 (113; emphasis added):

> A complete treatment of vertical integration requires that the limits as well as the powers of internal organization be assessed. As the *frictions* associated with administrative coordination become progressively more severe, recourse to market exchange becomes more attractive.

By the time Williamson used the metaphor of costs as friction, it was well known to economics. Matthias Klaes (2000) reminds us that monetary economics was surrounded by mechanical analogies involving friction, usually linking it to difficulties entailed in a barter economy that money could help to ease.[6] Klaes also identified the moment in which John Hicks accommodated the notion of frictions under the popular category of costs, an insight quickly assimilated in finance and monetary economics. From there, the idea spread out to other fields, including the general equilibrium literature and the analysis of comparative efficiency between market and non-market institutions.

By working with the familiar mechanical metaphor of friction, Williamson creates identification with a pervasive frame of mind within economics. He adds to it a pragmatic bias associated with his engineering training, which prevails over the accounting approach of other NIE economists, and the physics approach of mainstream economists. How can such a bias affect the use of the metaphor?

6 Klaes (2000:193) brings out the example of Knut Wicksell, who compared money to a lubricant that makes the economic machinery run smoothly.

The Metaphor in Associated Mind Frames: The Physicist, the Accountant and the Engineer

Economists have absorbed models and values not only of the physicist, but also of the accountant. Both mind frames exert a strong influence in the way economists carry out their work (Mirowski 1989; Klamer and McCloskey 1991). The accountant seeks to balance pros and cons accurately, whilst the physicist seeks to translate real phenomena into precise formulas. Both mind frames have left their marks in the way the metaphor of transaction costs as frictions has been advanced.

John Wallis and Douglass North (1986), for instance, have pursued what Klamer and McCloskey (1991) would identify as an accounting approach to the economic problem in which measuring the costs is central. In a different direction, Sanford Grossman and Oliver Hart (1986)—leading figures of the property rights theory of the firm—seem to have taken the physicist ethos onboard to deal with agency problems and transaction costs in formalised language.

Williamson, however, shows the stronger pragmatic bias of his engineering training (MG: 350). Calculations, for instance, are needed to the extent in which viable real alternatives are involved, and formal analysis is to be pursued but not at the cost of a better understanding of the variables at play (Williamson 2000). Frictions are accounted for in comparative terms and conceptual richness is not to give place to premature mathematical formalisation.

Williamson uses the metaphor of transaction costs as frictions in a way that encompasses this disciplined but pragmatic way of reasoning. And his expectations are that the profession will share his mindset (Williamson 2000: 596; emphasis added):

> Initial scepticism [about the economics of institutions] has gradually given way to respect—it being the case that economists are very pragmatic people. Tell them something different and consequential about phenomena that are of interest to them and demonstrate that the data are corroborative: that will get their attention.

The pragmatic inclination Williamson claims for his fellow economists, however, may not be as widespread as suggested. Mainstream economics has developed an increased interest in mathematical abstractions at the expense of economic realities (Coase 1988). Accordingly, precise formulation has been pursued even at the expense of relevance to real problems. "The physicist" mind frame has shown significant resilience, for instance, in the

property rights strand that now seems to compete with TCE within the New Institutional Economics (NIE).

The accountant wants to be meticulous with the numbers and see all frictions accounted for. The physicist values the drawing of imaginary systems with no friction on the blackboard. The engineer sees systems with frictions that may not be precisely represented or accounted for, and chooses between them with no interest in fictitious ideals. These three mind frames have been responsible for different developments within NIE. Williamson has used the particular engineer mind frame to establish the main direct analogy through which transaction costs are defined. As shown, it has its differences to both the accountant and the physicist mind frames, posing an obstacle for TCE to reach a wider audience in economics.

Williamson is aware that the variables that determine transaction costs do not fit easily into formal models as much as the correspondent causes of frictions in physics, but seems resolute to keep them (see Williamson 2000). Such a decision charges its toll. A comment by the game theorist David Kreps (1999: 154) after an attempt to build a formal TCE model illustrates the case: ''Since the model is a very bare metaphor, these are not conjectures on which I would care to stake my professional reputation.''

THE HEURISTIC METAPHOR OF THE HUMAN BEING AS CONTRACTUAL MAN

Williamson argues that TCE is an attempt to operationalise Coase's insights. The strategy to operationalise TCE, as Klaes (2000: 210) notes, has involved not the meticulous elaboration of the notion of transaction costs, but rather the scrutiny of the factors that give rise to them.

In MH, Williamson identifies three sources of frictions: the environment, the nature of the specific transaction itself, and certain human traits. These latter are of interest here. In EIC, Williamson describes the human being of TCE metaphorically as ''contractual man''—someone rationally bounded and potentially opportunist who engages in transactions, and whose main concern is to organise them through the least costly contractual arrangement.[7]

''Contractual man'' is essential to TCE as much as *homo oeconomicus* is central to traditional theory. The concept redefines the economic agent with

7 Williamson (EIC: 32) uses legal categories to define contracts. A market transactions, for instance, can be seen as a classical contract in which terms are quickly and fully agreed upon and promptly performed.

new human attributes, helping us "to catalyze our thinking" and "to approach a phenomenon [human agency] in a novel way." It works, thus, as a heuristic metaphor (Klamer and Leonard 1994: 32). With "contractual man," interaction between agents poses significant problems to decision-making and the underlying economic analysis. Consider what happens with the firm: it used to be a black box with *homo oeconomicus*, changing into an entity that needs explaining because it comprises a number of boundedly rational "contractual men." Consider also economic calculus and optimal choices: they used to be of absolute nature with the traditional view of rational man, and were made imperfect, comparative and remediable by "economic man." Williamson (2002a: 438) not only uses the heuristic metaphor of the economic agent as "contractual man", but also calls scholars to adopt the heuristic of "thinking contractually".[8]

As Klamer and Leonard (1994: 33) say, "Heuristic metaphors usually will not immediately reveal all possible elaborations." For one thing, the very suggestion of leaving the "flash calculator" image of *homo oeconomicus* and relying on another metaphor of a representative agent is a remarkable move. Considering human beings as a cause of frictions reopens the discussion about their relevant economic attributes.

Indeed, TCE has helped to trigger a change of atmosphere in the economic discussion of human attributes. Klaes and Sent (2005), for instance, stress the role played by Williamson in the dissemination of the notion of bounded rationality. In addition, researchers in economics and related areas, such as behavioural and managerial approaches to organisation, have also taken the notion of opportunism seriously in their work. Although authors of different areas criticise the emphasis given to opportunism and bounded rationality in TCE, few go as far as to suggest that a theory of the firm or of economic organisation would do well in forsaking those notions altogether. Stressing opportunism and bounded rationality is one of many other possible elaborations of the metaphor and some authors lean on TCE to propose a complementary or "beyond TCE" approach.

Much of the criticism of "contractual man" targets the choice of opportunism and bounded rationality at the cost of excluding other human attributes. For coherence's sake, "contractual man" needs to fit in with the constitutive metaphor of transaction costs as frictions. As Williamson presents the sources of friction, he stresses human traits that are harmful to

8 One can think of the metaphor of "contractual man" as constitutive if the idea of a generalised contractual world is held. Some literature on the firm as a nexus of contracts does seem closer to this view, as in Cheung (1983). In contrast, see Hodgson (1998) and Simon (1991).

the harmony of transactions and thus lead to the necessity of contracts. Alternative metaphors usually stress human traits that lead to cooperation and synergy between individuals. To some extent, trust, dignity, loyalty, and other noble human qualities can be seen as substitutes for contracts and for the calculativeness TCE says they involve.[9]

Consider for a moment that TCE focused on human traits that reduced transaction costs. Contracts would lose their importance and "contractual man" would not be contractual any longer. On occasion, Williamson (MH: 37; 1984; EIC: 44, 405; 1991) brought out dignity, reputation, altruism, and "quasimoral involvements" as human traits that arguably compensate for opportunism. They, however, do not make for the contractual calculativeness claimed in TCE. Williamson, thus, seems compelled to defend contractual man to the detriment of a broader approach (see especially Williamson 1993). Otherwise, individuals would not create but alleviate frictions and make contracts less important. As a result, for instance, the promising debate between TCE and competence-based approaches to the firm has become less productive and more antagonistic.[10]

THE CONSTITUTIVE METAPHOR OF ECONOMIC SELECTION

In TCE, "contractual men" chooses from a set of governance forms the one with lower transaction costs. Such an attribute should assure the governance form its survival. But transaction costs are difficult to measure and, thus, to compare ex ante. The only means to check whether the chosen governance form was the right one is to verify its survival, for wrong or unfortunate choices with higher transaction costs will have died out. This is the working logic of TCE as expressed in the constitutive metaphor of economic selection. The metaphor holds together a logical and conceptual scheme "through which we interpret a world that is either unknowable ... or at least unknown" (Klamer and Leonard 1994: 39).

The metaphor of economic selection usually refers to the idea of natural selection in biology.[11] In TCE, Williamson uses the selection metaphor in conjunction with the metaphor of transaction costs as frictions. Chapter 2 of MH offers the idea that markets and hierarchies deal with uncertainty and

9 This is a backward reading of what Williamson said in MG (p. 245): "I concur with Granovetter that to craft credible commitments ... is to create functional substitutes for trust."

10 See Williamson (1999), Ghoshal and Moran (1996), Hodgson (1998), Langlois and Foss (1999), Noorderhaven (1995) and Nooteboom (2004).

11 Which is known to be a rebound: biology first imported the metaphor from the work of the economist Thomas Malthus on population (Hodgson 1993).

complexity in an adaptive way to economise on transaction costs. In EIC (22–23), Williamson outlines the larger context in which TCE is to be set:

> The argument relies in a general, background way on the efficacy of competition to perform a sort between more and less efficient modes and to shift resources in favor of the former. This seems plausible, especially if the relevant outcomes are those which appear over intervals of five and ten years rather than in the very near term. This intuition would nevertheless benefit from a more fully developed theory of the selection process.

With the help of a quote from Herbert Simon, Williamson adds (MH: 23, original emphasis): "I subscribe to weak-form rather than strong-form selection, the distinction being that 'in a relative sense, the *fitter* survive, but there is no reason to suppose that they are *fittest* in any absolute sense.'"

As quoted above, Williamson says that his use of the metaphor could benefit from further elaboration. Most of the time the metaphor of natural selection seems to be conflated with the operation of an "invisible hand." As such, it appeals to many economists as a general worldview rather than a theoretical concept in need of lengthy elaboration.[12] This does not mean, however, that the selection issue is settled in economics. In fact, as Hodgson (1993) argues, it is often a contentious matter, which is probably the main reason for authors to criticise its use in TCE.[13]

As authors strive to produce compatible arguments, they tend to avoid extensive discussion of possible incompatibilities. The case of the less than fully developed metaphor of economic natural selection in TCE seems to fit a reading along these lines. After all, detailing one's position means expanding a theoretical set. As a result, there will be more elements inviting all sorts of comparisons and coherence checks, which increase the chances of a critical reader identifying incompatibilities.

According to Perelman and Olbrechts-Tyteca (1969: 198), one can use a "diplomatic approach" to avoid creating and having problems with incompatibilities. It involves "postponing the moment of decision until a more convenient time." The TCE case seems to follow this route. Williamson takes in the metaphor in a general sense while avoiding further elaborations that could lead to theoretical compromises or to frictions with closer scholars.[14]

12 Mirowski and Somefun (1998: 332) noted that "Economists have displayed a distinct tendency to harken back to the earliest versions of selection in order to endow their theories with an evolutionary cast."

13 See Groenewegen and Vromen (1996) and Winter (1987).

14 See MG (56–57, fn 3). See also Pessali (2006) for a discussion of how Williamson deals with the critique of incompatibility between bounded rationality and transaction cost minimisation.

The selection metaphor, however, has direct implication on testing TCE. According to Williamson (1999: 1092), "transaction cost economics is an empirical success story." This success, however, has been disputed and one point in question is exactly the constitutive role of the metaphor.

One obstacle in refining the selection argument is the operationalisation of transaction costs in terms of their constituent parts. This obstacle has a parallel in biology, i.e. the difficulty in defining ex ante a winner trait, individual or species. Given the difficulties in measuring transaction costs directly, empirical tests of TCE have been carried out mostly with reduced form models. As Masten (1996) notes, reduced form models are not as potent as one would wish to support the selective predictions of TCE (see also David and Han 2004; Carter and Hodgson 2006). First, in a reduced form model, a single transaction feature responds to the selection process. It is unable to consider the whole set of interactive features specified in TCE. Second, the models subject TCE to ex post rationalisations that are unpopular in economics. In other words, by definition, there will be no losers available to be tested in a comparative analysis.

The metaphor of economic selection, thus, gives us ground to keep working on a causal relationship that is either unknowable or extremely difficult to identify. At this point, the metaphors of "contractual man" and transaction costs as frictions can bring reassurance. After all, "contractual man" is both a permanent source of transaction costs and the pursuer of systems that work better, i.e. with less friction.

The selection metaphor has become widely accepted by economists in its broad sense as an ubiquitous and simple force, be it through Adam Smith's "invisible hand" form, Malthus's demographic pressures, or Armen Alchian's (1950) more recent formulation. Apparently, the effort by some evolutionary economists to refine the selection metaphor has made only partial inroads on that habit of thought. On balance, peer pressure to refine the idea has been limited and, additionally, much of TCE empirical work has been done on the realm of entrepreneurial intentionality rather than on selection results. Accordingly, there seems to be no strong reason for Williamson to change his diplomatic approach.

CONCLUSION

The three metaphors studied here help us understand the "distinctive worldview" offered by Williamson in terms of what we already know. They illustrate vividly the key elements of TCE world: the individual as

"contractual man", the forces of the environment through economic selection, and the frictions that connect them as transaction costs. In addition, they work as ambassadors for TCE, establishing identification with and differences from other views on the economics of organisation (and beyond).

The mechanistic metaphor of transaction costs as frictions and the metaphor of economic selection arguably stand out on this regard. They are well known and widely accepted in a broad sense among economists. They seem to be less successful with more specific audiences, however, as in niches where the metaphors are worked to detail (e.g. evolutionary theories of the firm).

The metaphor of the human being as "contractual man", in its turn, draws on the metonym used initially by neoclassical economists to construct economic man based on rationality and motivational features. Through sharing these two structural aspects with economic man, "contractual man" may still be attractive to mainstream economists as a less restrictive metonym. Indeed, the core of economics seems to have become more receptive to notions like opportunism—although arguably more in connection with agency theory than with TCE. The case for bounded rationality, however, gives less room for enthusiasm. More recently, Williamson (2002b) has made more explicit his suggestion that the economics of organisation need to use the lens of contract in contrast to the lens of choice. The wording is stronger in suggesting not a simple theoretical fine-tuning but a change of *weltanschauung*.

These tensions have been part of TCE from its beginning. Williamson's framework has made inroads into economics—even more intensely into the economics of organisation and anti-trust. Its metaphors might have influenced economists' interpretations, inclinations and actions. Further theoretical developments on TCE may depend on how those metaphors can be sustained and articulated in the heterogeneous discourse community of economics.

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