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Interaction or “Never the Twain Shall Meet”?**

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# Cognition and Motivation in the Theory of the Firm: Interaction or “Never the Twain Shall Meet”?

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## **Abstract**

Economics in general, and the theory of the firm more specifically, places motivation and cognition in very different analytical boxes, in spite of cognitive science evidence that the boundaries between the two are in reality blurred. While this analytical assumption has often served the theory of the firm well, a number of organizational phenomena are better understood if cognition and motivation are allowed to interact, for example, through framing effects, as organizational scholars have long argued. The paper exemplifies by developing the implications of this for Williamson’s notion of the “impossibility of selective intervention.”

**Keywords:** The theory of the firm, cognitive and motivational variation, selective intervention.

## I. Introduction

Organizational theorists (March and Simon 1958) and management thinkers (Barnard 1938) have long recognized that cognition and motivation are intimately connected, and that understanding their interrelations may be central to successful organizational design as well as managerial practice. Consider, for example, James March's (1994) notion of the "logic of appropriateness," that is, people often act according to what they (and others) consider to be *appropriate* in a certain context (e.g., "What should I do as a marketing executive in this situation?"), rather than what is strictly maximizing.<sup>1</sup> The thrust of the logic of appropriateness is that how a person (cognitively) frames a situation influences what motivates him and how strongly.

There is more than casual evidence that cognition and motivation interacts in such a manner. Thus, there is an expanding scholarly literature in various branches of cognitive science that speaks directly to this issue. Some parts of the "heuristics and biases" literature in experimental psychology, notably work on framing effects (e.g., Tversky and Kahneman 1987) and preference reversal (Tversky, Slovic and Kahneman 1990), may be interpreted in this manner. Moreover, this kind of psychological research suggests that the kind of interaction of motivation and cognition here exemplified by the logic of appropriateness is not a behavioral anomaly, but rather a relatively systematic aspect of real-world behavior, including how agents behave in organizations and as managers (Bazerman 1994). Other parts of cognitive science, such as the "fast and frugal heuristics" program (Gigerenzer and Selten 2002) and evolutionary psychology more generally suggest even more radically that the distinction between motivation and cognition often cannot be upheld. It is at best an analytical distinction.

Economics is increasingly making headway in the organization and management fields (e.g., Milgrom and Roberts 1992). Given the fragmentary and

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<sup>1</sup> March's notion of the "logic of appropriateness" is an updating of what Max Weber much earlier had called "valuational action".

often sloppy nature of much inquiry in management studies, this is assuredly to be welcomed. However, a major problem appears to be that in most of economics — the emerging field of behavioral economics being an exception —, cognition and motivation are separate boxes (hence, the sub-title to this paper). Of course, there is, and must be, a *link* between cognition and motivation; incentives that motivate behavior have to be discovered, and optimal decisions, given incentives, have to be calculated — and discovery and calculation are cognitive operations. However, there is no *interaction*, because virtually all of economics assumes *cognitive homogeneity*, that is, agents hold the same, correct, model of the world, and *cognitive constancy*, that is, agents' model of the world do not change. There is no cognitive variation that allows motivational factors to be framed in different ways, and, in turn, motivational factors are not allowed to impact on cognitive factors.<sup>2</sup>

The (economic) theory of the firm, or broader, of economic organization, is no exception to this generalization (Foss 2000). In agency theory and transaction cost economics, moral hazard and perfect rationality, and opportunism and bounded rationality, respectively, are entirely separate assumptions, and there is no mention of any direct interaction effect. Similarly, though often strongly critical of such assumptions as moral hazard and opportunism, heterodox approaches to economic organization — notably the capabilities (competence, knowledge-based, etc.) approach (e.g., Nelson and Winter 1982; Kogut and Zander 1992) — have not inquired into the separation of motivation and cognition, mainly because motivational issues are largely black-boxed in this body of theory.

In the following, I begin by briefly and critically discussing cognitive and motivational issues in the contemporary economics of organization. I then move on to the more constructive task of discussing the possible implications for the theory of economic organization of acknowledging the interaction between cognition and

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<sup>2</sup> Interaction between the cognitive and motivational domains enters at best through “incentives for learning,” as in labor economics, where, however, either there is no real cognitive change going on (or, it is not explicitly modeled).

motivation is discussed. I concentrate on Oliver Williamson's (1996) notion of the "impossibility of selective intervention."

## II. The Treatment of Cognition and Motivation in the Theory of the Firm

### **The Theory of the Firm**

The basic features of the emergence of the theory of the firm are well-known: As the story is normally told, the theory of the firm traces its existence back to Coase's landmark 1937 article, "The Nature of the Firm." Coase argued that in the world of neoclassical price theory, firms have no reason to exist. The reason why firms existed after all, Coase reasoned, must be that there is a "cost to using the price mechanism" (Coase 1937: 390), that is to say, transaction costs. After pointing out that the nature of the firm consists largely in substituting an employment contract for a spot contract in output, Coase suggests that the real costs of contracts may lie in their inflexibility. "It may be desired to make a long-term contract for the supply of some article or service," he writes.

Now, owing to the difficulty of forecasting, the longer the period of the contract is for the supply of the commodity or service, the less possible, and indeed, the less desirable it is for the person purchasing to specify what the other contracting party is expected to do. It may well be a matter of indifference to the person supplying the service or commodity which of several courses of action is taken, but not to the purchaser of that commodity or service. But the purchaser will not know which of these several courses he will want the supplier to take. Therefore, the service which is being provided is expressed in general terms, the exact details being left until a later date. ... The details of what the supplier is expected to do is not stated in the contract but is decided later by the purchaser. When the direction of resources

(within the limits of the contract) becomes dependent on the buyer in this way, that relationship which I term a “firm” may be obtained. (Coase 1937: 391-392.)

This passage suggests that Coase’s explanation for the emergence of the firm is ultimately a *coordination* one: The firm is an institution that lowers the costs of qualitative coordination in a world of uncertainty (Langlois and Foss 1999). Thus, broadly cognitive issues were present at the inception of the theory of the firm. In contrast, it may be noted that Coase has nothing to say about motivation. In contrast, what has driven later contributions to the theory of the firm is much less cognitive issues than it is motivational issues, specifically the incentive conflicts caused by morally hazardous or opportunistic behaviour (coupled with imperfect contracting). In fact, a case may be made that cognitive issues have been almost crowded out by incentive issues, surviving at best in the notion of “bounded rationality” ? a notion that is so vaguely defined in this body of theory as to be virtually a black box (more about this later).

Still, the post-Coasian theory of the firm has followed Coase in conceptualizing the firm as a contractual entity whose existence, boundaries and internal organization can be rendered intelligible in terms of economizing with (various types of) transaction costs. This is not to say that any one theory in modern organizational economics has addressed all these three key issues in terms of the same unified framework and making use of the same kind of transaction costs. Indeed, a possible perspective on the division of labor that exists within the modern theory of the firm is that whereas the principal-agent (Holmström and Milgrom 1991) and the team theory (Marschak and Radner 1972) approaches are mainly relevant for understanding issues that relate to internal organization, the transaction cost approach (Williamson 1985) and the property rights approach (Hart 1995; Hart and Moore 1990) have mainly been applied to the understanding of the issue of the boundaries of the firm. Relatedly, these approaches have stressed different kinds of transaction costs, the principal-agent approach emphasizing costs of monitoring, the

property rights approach emphasizing costs of writing (complete) contracts, and the transaction cost approach similarly emphasizing writing costs, but perhaps particularly costs of haggling that may arise *ex post* the signing of a contract.<sup>3</sup>

Of the four mentioned approaches, only the transaction costs approach and the property rights approach are conventionally considered as theories of the firm. The basic reason is that neither team theory nor principal-agent theory explain asset ownership, that is, they do not explain the boundaries of the firm. Such an explanation must presuppose that contracts are incomplete, because otherwise everything can be contractually stipulated and there will be no need for ownership understood as something that confers the “residual right” to make decisions that are not contracted for. Team theory and principal agent theory assume complete contracts, whereas transaction cost economics and property rights theory work off from an incomplete contracting foundations. Accordingly, the main emphasis will be on the latter two approaches.

### **Specific Assets and Incomplete Contracts**

Following Oliver Williamson, particular emphasis has come to be placed in these approaches upon specific (or highly complementary) assets in explaining the boundaries of the firm.<sup>4</sup> In this story, assets are highly specific when there is a high difference between their value in the present (best) use and the second-best use. This opens the door to, and provides the incentive for, opportunism in the form of “hold-up”. Once the contract is signed and the assets deployed, one of the parties may threaten to pull out of the arrangement — thereby reducing the value of the specific assets — unless a greater share of the quasi-rents of joint production find their way into the threat-maker’s pockets. Fear of such “hold up” *ex post* will affect investment choices negatively *ex ante*. This means that the joint surplus flowing from the relation will not be as high as it could if there were no fear of opportunism.

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<sup>3</sup> This is a bit of a rational reconstruction on my part: Formal contract theorists, such as principal-agent or property right theorists, are not too comfortable with the notion of “transaction cost.”

<sup>4</sup> For expository reasons, I here suppress the differences between the Williamsonian and Hartian versions of this story.

Integration may not so much do away with opportunism proclivities as it might change the incentives to engage in opportunism. By giving property rights to the (non-human) assets in the relation to the party whose investments matter most to the size of the joint surplus, the negative effects of opportunism can be minimized though never completely eliminated (Hart 1995).

The basic problem in this story is that contracts are left *incomplete*, for example, because the transaction costs of drafting complete contracts are prohibitive. It is the need to make decisions under circumstances that are not covered by the contract that makes hold-up and its consequences possible. In its modern, mainstream economics version (e.g., Hart and Moore 1990), this story, like most of contemporary microeconomics, is cast in the language of game theory. A simplistic version of the basic incomplete contract argument emerges from the following games in normal form.

<b>Game 1</b>				<b>Game 2</b>			
		B				B	
		x	y			x	y
A	x	2,2	0,0	A	x	2,2	0,0
	y	0,0	4,1		y	0,0	4-u,1+u

Following Hurwicz (1972) one can in an abstract manner think of economic agents as choosing game forms and equilibria thereof for regulating their trade. Efficiency requires that if agents can find a game form and an equilibrium thereof that allow them to do better, they will do so. In conformity with the game theoretical economics of organization literature, everything in these games is “common knowledge,” that is, “player A knows that player B knows that player A knows that ..... h is the case,” where “h” can be pay-offs, strategies, and the identity of the other player.

The two players begin by confronting Game 1. The problem here is that the Pareto criterion is too weak to select a unique equilibrium, since both the (2,2) and (4,1) may be equilibria on this criterion. Now, obviously the (4,1) equilibrium has a higher joint surplus than the (2,2) equilibrium. Therefore, it will be in A's interest to bribe B to play the y-strategy. If  $u$ , the bribe, lies between 1 and 2, the equilibrium corresponding to both A and B playing y will be efficient, and, hence, be chosen. Thus, efficiency now implies that the agents agree on (contract on) maximizing and somehow splitting the joint surplus. In this situation, a market failure occurs when bribes cannot be sustained in equilibrium. Whether this occurs or not may be critically sensitive to the timing of the game. For example, if A gives B the bribe before the game begins, B will not choose the y-strategy, which means that A will decide not to give B any bribe. Or, A may promise B to pay the bribe after game, but B will realize that this will not be in A's interest, and will still choose the x-strategy. Although the (2,2) equilibrium is still efficient, it is not joint-surplus maximizing.

These market failures may be remedied through contractual means; for example, A may agree to pay B a compensation if he does not pay  $u$ , or B may agree to pay A a compensation if he does not choose the y-strategy after receiving  $u$ . However, such contracts may not always be feasible. Contracts fail in the sense that they cannot completely safeguard against the reduction of surplus/loss of welfare stemming from incentive conflicts (given risk preferences). Contract failure may take various forms. For example, contracts may be *incomplete* in the sense that some contingencies are left out for whatever reasons. In the context of the example, A may be confronted with a contingency that is not covered by the contract, refuse to pay B the bribe, and B may have no recourse. Or, while it may be possible in principle for partners to agree on contract terms, these may not be enforceable by a third party, such as a court. In the latter case, contract terms are said to be "non-verifiable." Or, the costs of contracting may outweigh the gains. In all of these cases, it may not be possible to sustain the first-best outcome, that is, the one that unambiguously maximizes joint-surplus. Given contract failure, the analytical

enterprise is therefore one of comparing alternative contracting arrangements in terms of their implications for the joint surplus from a relation. For example, one may compare Nash equilibria that differ in terms of the underlying distribution of bargaining strengths (for example, as given by ownership patterns).

## **Cognition**

The above normal form game representation has been chosen as an illustrative device not just because of its simplicity, but also because of the epistemic assumptions, namely common knowledge of players, payoffs and strategies, that accompany this sort of representation. At least in the example, the players confront no ambiguity.<sup>5</sup> The same assumptions are made in formal contract theory. Epistemically, contract theory models usually work with an “on-off” approach (Foss and Foss 2000, 2001), in which players are either perfectly informed about a relevant variable or have very little information about it, or in which a variable (e.g., investment levels) is perfectly contractible or not contractible at all because the third-party (that enforces the contract) have very little relevant information. Typically, the “economic action” is produced by “switching off” one variable by assuming, often in an entirely arbitrary fashion, that one or more agents know very little about it(s realization) and then tracing the consequences.

It goes without saying that the cognitive assumptions that drive these models are very far-reaching but also slightly “schizophrenic.” A good illustration is provided by the key assumption in the property rights approach that “... even though the agents are not capable of writing a contract that avoids hold-up problems, they are clever enough to understand (at least roughly) the consequences of their inability to do so” (Hart 1990: 699). More technically, the agents are capable of performing a dynamic programming exercise that involves knowing, at least probabilistically, the joint surplus produced by with their relation — although they may be ignorant about (some of) the sources of that surplus. This assumption may

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<sup>5</sup> *Apropos* the interaction between cognition and motivation, Durkheim (1964) argued that ambiguity demotivates. The lack of ambiguity in economic models is a further way of repressing this interaction.

make formal sense (Maskin and Tirole 1999); however, "... not everything that is logically consistent is credulous," as David Kreps (1996: 565) laconically observes. A related assumption is also made in (verbal) transaction cost economics where Williamson has consistently maintained that economic agents successfully can engage in "farsighted contracting" although they are bounded rational, an assumption that has been strongly criticized as bordering on inconsistency by Dow (1987) (see further Foss 2001).

### **Bounded Rationality**

"Bounded rationality" deserves special mention here, because it is directly relevant to the cognition/motivation separation that is under scrutiny here (see also Schlicht 1990 for a related discussion). Some writers in the economics of organization, notably Williamson, see bounded rationality as a crucial assumption: "But for bounded rationality," he argues (1996: 36), "all issues of organization collapse in favor of comprehensive contracting of either Arrow-Debreu or mechanism design kinds." However, it is striking that a notion that is claimed to constitute a necessary behavioral assumption is never defined with much precision in the economics of organization literature.<sup>6</sup> Williamson usually confines himself to quoting Simon's famous dictum from the preface of *Administrative Behavior* that BR refers to man being "intendedly rational, but limitedly so." Some writers make hasty reference to Simonian information processing arguments (Hart 1990: 698; Schwartz 1992: 80). Thus, if agents do not have the mental capacity to think through the whole decision tree — for example, in complicated bilateral trading relations —, it seems reasonable to assume that some of the branches of the tree (such as those relating to some future uses of assets) cannot be represented in a contract; the contract is left incomplete. In a central chapter (5, "Bounded Rationality and Private

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<sup>6</sup> One may speculate that this has to do with the virtual absence in modern economics of a specific, affirmative, generally agreed-upon program for research in BR. Nevertheless, a multitude of differing interpretations of BR do exist, some of them extremely formal (Rubinstein 1998), so it certainly is possible to adopt some precise definition of BR as a foundational assumption in the economics of organization literature. This is, however, never done.

Information”) in their well-known textbook, Milgrom and Roberts (1992: 128) define bounded rationality as a matter of “[l]imited foresight, imprecise language, the costs of calculating solutions and the costs of writing down a plan.” They go on to develop at length the *implications* of this in terms of imperfect contracts and subsequent problems of imperfect commitment between contractual parties. However, they, too, do not develop or truly explain their definition of bounded rationality.

The reason why economists of organization are less than eager to adopt precise, constraining definitions of what BR may mean with respect to individual behavior likely is that they simply do not see any reasons for adopting such definitions. Williamson is quite explicit here. He notes that “[e]conomizing on bounded rationality takes two forms. One concerns decision processes and the other involves governance structures. The use of heuristic problem-solving ... is a decision process response” (Williamson 1985: 46). The latter “form” is not central, however, in transaction cost economics, which “... is principally concerned ... with the economizing consequences of assigning transactions to governance structures in a discriminating way.” In practice, this means that bounded rationality is simply a loose background kind of assumption that informally allows one to explain why contracts are incomplete.<sup>7</sup>

## **Motivation**

The neglect of bounded rationality in the economic theory of the firm also implies that there is no attention to those heuristics, rules of thumb, etc. have occupied the attention of behavioral scientists for quite some time, notably, of course, Herbert Simon and his colleagues and students. As noted, Williamson

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<sup>7</sup> Oliver Hart (1990) goes further, and denies that bounded rationality is necessary for the theory of the firm. This is because what bounded rationality is supposed to do — namely, rationalize contractual incompleteness and therefore the inefficient investment levels that are centerstage in much contract theory (Grossman and Hart 1986; Hart 1995) — can be done more elegantly by asymmetric information assumptions, particularly the assumption that investments in a relation are unverifiable by a third party (e.g., a judge).

(1996) explicitly says that transaction cost economics is not taken up with “decision premises.” A relatively recent development in cognitive science is the attempt to link the emotions to bounded rationality. Emotions are seen as part of those “fast and frugal heuristics” (Gigerenzer and Selten 2002) that secure adaptability. To use an example, whereas an economist will, if pressed on the issue, treat a feeling such as jealousy as a driver of motivations (i.e., as underlying the agents’ preferences), to the proponents of the fast and frugal heuristics programme, jealousy simultaneously provides motivation *and* a decision heuristic; thus, there is no clear separation between the cognitive and the motivational.

A number of writers (e.g., Fehr and Gächter 2000; Osterloh and Frey 2000) have recently taken issue with the assumption in the economics of organization that all motivation is invariably of the “extrinsic” type, that is, all behavior is understood in terms of encouragement from an external force, such as the expectance of a monetary reward. (In contrast, when “intrinsically” motivated, an individuals wish to undertake a task for its own sake (Deci and Ryan 1985).<sup>8</sup>) The thrust of this critique seems to relate purely to what in motivational terms drives individual behavior, whereas cognitive issues seem to outside of its orbit. However, although the arguments are not strictly congruent, acting in an intrinsically motivated manner may, at least to an outside observer at least, mean much the same as acting “appropriately to the situation” in the sense of March (1994). In both cases, the agent does not maximize “wealth.” Indeed, at least some parts of intrinsically motivated behavior may consist of acting appropriately to the situation, indicating that the notion of intrinsic motivation may represent the same blurring of the cognitive and the motivational domains that the notion of the logic of appropriateness indicates.

## **Summary**

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<sup>8</sup> For an interesting attempt to treat intrinsic and extrinsic motivation simultaneously in a principal-agent model, see Benabou and Tirole (2002).

In the modern economics of organization, not only are cognition and motivation treated as one-dimensional constructs, there is also (partly for this reason) little real interaction between them. To be sure, there is a *link* between cognition and motivation. For example, in agency theory principals may improve their estimates of agents' effort levels (Holmström 1979). This reduces the risk premium that has to be paid to the agent (because the variance on the estimate is reduced), making it possible to give him higher-powered incentives, and increasing the total created value in the relation between principal and agent. In other words, principals are motivated to undertake the cognitive operations of collecting and processing improved signals of effort (until the costs equal the benefits of doing so). However, there is no real interaction, in the sense that motives are allowed to influence cognition or *vice versa*. And there is certainly no recognition of the more radical point that the boundaries between motivation and cognition may be rather blurry (but see McLeod 2000 for an exception).

The theory of the firm began in Coase (1937) with the argument that the existence of the firm was rooted in imperfect cognition. However, as the theory took off and became a part of mainstream microeconomics, imperfect cognition was pushed aside in favor of an overriding concern with imperfectly aligned incentives as the key to the understanding of economic organization. To be sure, the incentive focus with uniform, correct cognition has been most productive and useful. Also, it would be foolish to deny that incentive conflict issues are important determinants of observed economic organization. The present paper is not an argument for the "knowledge-based" position that incentive conflicts be black-boxed in order to focus in an equally lop-sided manner on purely cognitive issues (Kogut and Zander 1992). Rather, the argument is that cognitive issues be introduced more explicitly and be allowed to interact with motivational issues. The following looks at this in more detail.

### III. Interacting Cognition and Motivation

## **Interacting Cognition and Motivation**

The strict separation of the motivational and the cognitive domains that is characteristic of economics in general surely has, and has had, a number of beneficial effects: It neatly keeps difficult assumptions apart and thus does not unnecessarily complicate discourse. For addressing and resolving many problems in social science, the separation may not only be entirely valid, it may be necessary for reasons of analytical parsimony. Still, it is not a generally applied strategy in social science (including management studies) and psychology. It may indeed not be a universally superior approach, in the sense that there are phenomena that are difficult to comprehend in their complexity if we insist on breaking up motivational and cognitive drivers of behavior in neat separate boxes.

In particular, in the context of organizational life, separating cognition and motivation may in many cases be a too strong affront to realism. It is no coincidence that a classic contribution to organization science has it that “[t]he steps that lead, for an actor, to his defining the situation in a particular way involve a complex interweaving of affective and cognitive processes. What a person wants and likes influences what he sees; what he sees influences what he wants and likes” (March and Simon 1958: 158). The authors explicitly link this reasoning to bounded rationality, noting that boundedly rational choice is “... always exercised with respect to a limited, approximate, simplified ‘model’ of the real situation” (March and Simon 1958: 160). This model “... represents a simplified, screened, and biased model of the objective situation ... and affects all of the ‘givens’ that enter into the decision process” (idem: 175), where motivational factors are part of the “givens.” Per implication, motivational factors may be influenced by the provision of cognitive frames. Lindenberg (2003: 52; *italics in original*) provides a nice encapsulation of the thrust of this kind of reasoning:

*People’s perception of a situation is selective.* When we say that a person has a certain *frame* we mean that, compared to another frame, this person thinks

of certain things more readily, is more sensitive to certain kinds of information, perceives certain alternatives more readily than others, and assigns different weights to certain aspects. To focus on certain aspects also means that *other aspects are cognitively pushed into the background*. This process is governed by *goals* in the sense that in the competition between goals in a situation one wins out and dominates the foreground as well as the major cognitive processes while the other goals are pushed into the background.

A classic illustration is the famous Milgram (1974) experiments concerning obedience to authority, in which the experimental subjects were asked to administer electrical shock to persons that acted the various reactions to what was believed by the experimental subjects to be real electrical shocks. The shocking conclusion was that people were prepared to inflict very severe pain on other people, if instructed to do so by the scientists. Thus, by framing the situation as an experiment run by experts, Milgram manipulated motivational factors. As an economist would have it, the disutility associated with administering electrical shocks to other people was influenced by this framing.

With respect to organizational life, the obvious implication is that an important part of the activity of management is essentially a cognitive one designed to influence motivations. In fact, March and Simon (1958: 179) develop an argument that it is easier to effect control by influencing cognitive premises than by directly trying to influence agents' motivations. They argue that motivations in organizations often emerge through complicated psycho-social affective processes and are likely to be less flexible, whereas cognitive processes are plastic. By influencing the framing of situations, management can redirect the attention of employees and thereby indirectly steer goals and motivations in certain directions.

The perhaps most sophisticated contemporary account of such "cognitive governance" is due to Siegwald Lindenberg. In a string of papers, he (e.g., Lindenberg 2003) has constructed an overarching argument that is argued to also

encompass the basic organizational economics notion that behavior is primarily influenced by the provision of external rewards. Key to this argument is the distinction between three different frames, namely “hedonic,” “gain” and “normative” frames. In the first frame, the goal is to improve social and physical well-being directly and immediately. Short-term opportunistic taking advantage of other persons fall into this category. The “gain” frame is longer-run and is concerned with increasing wealth (e.g., investing in education in order to increase the value of one’s human capital). The “normative” frame is directed by the goal “to act appropriately,” that is, according to norms. In this perspective, a key management activity is to make sure that the myopic hedonic frame does not crowd out the gain or the normative frame. Moreover, the key management problem is to balance the gain frame and the normative frame so that “... relational concerns keep the pursuit of gains in check and, conversely, the pursuit of gains keeps excesses of relational concerns in check” (Lindenberg 2003: 72). This is partially accomplished through sending “relational signals” in the form of communication, demonstrating commitment to fairness, etc. The reason is that “employees ... interpret the organization’s actions as *relational signals*, as telltale signs of the ‘true’ orientation (frame)” (p.70). For example, employees may look to how other employees are treated in order to extract information about the organizations commitment to relational concerns (see also Kreps 1990).

This is not the place to provide an extended summary of Lindenberg’s rich and complicated theorizing on these issues. What has been said should suffice to suggest that what his argument (as well as those of other organizational scholars who are or have been working along similar lines) amounts to are micro-level accounts of how, in the economist’s terminology, “implicit contracts” arise, are maintained, changed, etc., and how both motivational and cognitive factors enter into such constructs. In order to suggest the relevance of this work to the economic theory of the firm, I discuss how our understanding of the limits to and constraints on selective intervention is enhanced by such a more sophisticated understanding of

interacting cognition and motivation. I emphasize that this is merely one example out of many possible.

## IV. Cognition, Motivation, and the “Impossibility of Selective Intervention”

### **The Problem**

A key theme in the theory of the firm (e.g., Coase 1937; Williamson 1996) is that the exercise of authority in the form of managerial fiat provides a reason why firms exist. As Williamson (1985, 1996) points out this rationale raises a puzzle (indeed, a “chronic puzzle”), namely what determines the optimum size of firms and their efficient boundaries. His take on the issue and attempt to solve the puzzle begin from asking, “Why can’t a large firm do everything that a collection of small firms can do and more?” The reason why that question is worth asking is that it builds on plausible premises but lead to implausible conclusions, to wit, that all economic activity will be organized in one giant firm.

Consider two competing firms. Net gains should always be expected from a merger, because of savings on overheads, economies of scale, coordination of pricing decisions, etc. Little needs to change on the level of organization. What were previously autonomous firms may now be units with semi-autonomous status. Importantly, incentives may be as high-powered as they were prior to integration. The decisions that are most efficiently made at the levels of operations will be made there. “Intervention at the top thus occurs *selectively*, which is to say only upon a showing of expected net gains” (Williamson 1985: 133). This implies that the combined firm can do everything the stand-alone firms could *and more*, so that “... integration realizes adaptive gains but experiences no losses” (p.161). Clearly, the argument may be extended to vertical mergers or conglomerate mergers. And equally clearly, the argument implies that merger activity will go on until all economic activity is undertaken by one single firm. Since we don’t observe

this organization of economic activity, selective intervention must be associated with some “losses” that offset the benefits of integration at the margin.

It is important to note that the impossibility of selective intervention argument does not imply that there may not be gains from integration, and that sometimes selective intervention can successfully take place “upon a showing of expected net gains” (as argued by, e.g., Goold, Campbell and Alexander 1994 and Foss 1997). What is “impossible” is only the fiction of costless selective intervention. What, then, are the costs of selective intervention?

In his first work on the issue, Williamson (1985) focuses on incentive distortions that arise in the form of what he there calls “asset malutilization” and “accounting contrivance” problems that arise upon merger.<sup>9</sup> However, in his subsequent work on selective intervention (Williamson 1993, 1996), he has increasingly come to focus on what are essentially managerial commitment problems. A fundamental problem here is that the option to intervene “... can be exercised both for good cause (to support expected net gains) and for bad (to support the subgoals of the intervenor)” (Williamson 1996: 150-151), it may be difficult to verify the nature of the cause, and promises to only intervene for good cause are hard to make credible because they are not enforceable in a court of law. There is thus a problem of “... *credibly* [promising] to respect autonomy save for those cases where expected net gains to intervention can be projected” (Williamson 1993: 104). A basic problem — in theory as well as managerial practice — is therefore how to maximize managerial intervention for “good cause,” while avoiding intervention for “bad cause.” However, since intervention for “bad cause”

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<sup>9</sup> The first cause, “asset malutilization,” appeals to cost of measuring the wear and tear of equipment. Given such costs, owner-managers who become managers in the merged firm will utilize equipment with less care and invest less in maintenance. The second one arises when the integrating firm promises to pay a low price for the assets of the integrated firm in exchange for a promise of a favorable net receipt stream, but then *post* integration, squeezes the net receipts of the integrated firms by means of accounting manipulation. Both problems arise because incentives in the merged firm are high-powered. Recourse to low-powered incentives is to be expected. The attendant organizational failures help explain the optimum size (the efficient boundaries) of the firm.

is not entirely unavoidable, costless selective intervention is indeed a fiction, and inefficiencies are strictly unavoidable. This implies that firm sizes are bounded well below the maximum of organizing all productive activity in the world.

### **Selective Intervention, Motivation and Cognition**

The reason Williamson's (1996) distinction between intervention for good cause and intervention for bad cause (i.e., opportunistic managerial intervention) is so fundamental is because it directs attention to the organizational costs of managerial authority. However, Williamson appears to be content with noting the incentive liabilities that unavoidably accompany *fiat*. He does not subject these liabilities to closer scrutiny, nor does he discuss how they may be minimized or whether they may differ across firms. Baker, Gibbons and Murphy (1999) go somewhat further than Williamson by conceptualizing the problem as one of one sustaining superior equilibria in repeated employee/employer games (cf. also Kreps 1990). Foss, Foss and Vázquez-Vicente (2003) frame the problem as one of managerial credible commitments and identify and test some of the determinants of such commitments. The preceding discussion of cognition and motivation allows for further elaboration.

*Perceiving Intervention.* It is an implication of the notion of framing (Lindenberg 2003) that employee motivation is mediated by perceptions of what motivates managerial intervention, notably whether managerial motivations reflect a hedonic or a normative frame, that is, whether intervention takes place for bad or good reasons (Williamson 1996). Whether managerial intervention will or will not break with existing psychological (Rousseau 1989; Robinson and Morrison 1995; Coyle-Shapiro and Kessler 2000) or implicit (Kreps 1990) contracts cannot be understood separately from this. Thus, what may to an outside observer look like a flagrant violation of psychological contracts, for example, a massive renegeing of delegation, may in actuality be intervention that is undertaken for good cause – for example, as the only rational response to a major organizational crisis – and hence

be understood by employees as behavior that reflects the adoption of a normative frame by management.

Conversely, managerial intervention that objectively benefits all relevant parties may be perceived by employees as breaking with psychological contracts and reflecting a hedonic or gain frame on the part of management. In sum, in ascertaining the nature of managerial intervention, employees face a complicated signal extraction problem. Because employees cannot always correctly extract information from signals ? intervention for good cause may be confused with intervention for bad cause and *vice versa* ? mistakes will be made, and inefficiencies are strictly unavoidable.

*Employee entitlements.* The psychological literature on cognitive biases suggests further reasons why motivation may be harmed by opportunistic managerial intervention. In an employee relationship, employees develop implicit and explicit expectations of the contract governing the relationship (Coyle-Shapiro and Kessler 2000), and particularly of the benefits that they believe they deserve under the implicit contract, that is, their “entitlements” (Heath et al. 1993). For example, certain levels of delegated discretion may become “status quo” points, in the sense that they represent what employees believe are their entitlements. Thus, if employees enjoy considerable discretion this may become part of their (perceived) entitlements. As discussed earlier, loss aversion implies that a loss relative to the status quo point is seen as more undesirable than a gain relative to the same point is seen as desirable. This means that employees will develop a bias against changing the level of discretion in a downwards direction, and that they can be expected to resist such changes, as well as suffer a loss of motivation if the change is, in fact, forced upon them.

*Constraining harmful selective intervention.* The analysis suggests that a key management problem is managing cognition in order to minimize the incentive liabilities associated with selective intervention. The relevant relational signalling may take several forms (Foss and Foss 2003).

Notably, managers may stake their personal reputations. This may be done through symbolic and communicative acts, for example, announcing in large-scale company gatherings one's firm commitment to certain policies and values. It can, of course, also be done through *consistently* abstaining from harmful intervention.

Even if no explicit commitments to abstain harmful exercise of authority are issued, there are still a number of features of the organization of the firm that may serve as credible commitments.

First, hierarchical structure itself plays a role. Thus, delegated discretion may be partly protected if lower level managers are required to refer to higher-level managers for authorization to overrule decisions made by of employee's. This will be the case if upper and lower-level managers differ in their preferences for overruling, for example, lower-level managers derive a private benefit from overruling, whereas upper-level managers do not (Aghion and Tirole 1997). Another reason why hierarchical structure may constrain managerial intervention is that the hierarchy is not just a structure of authority, but also one of information. Thus, there will be an informational distance between those possessing authority and those to whom discretion has been delegated. The size of this informational distance influences the basis for exercising judgment with respect to decisions whether to overrule employees or not. All else being equal, the more hierarchical layers that information has to pass through before reaching the level exercising authority, the less adequate is this basis likely to be.

Also, some employees or groups of employee may also be particularly costly for management to overrule, because their discretion is not only formally delegated, but also strongly grounded in the real control of critical resources, notably specialized human capital, ability to charismatic leadership, a favorable reputation with certain customers, etc.

Finally, strong trade unions or professional associations are forces outside of the firm that constrains harmful selective intervention. Competitive forces also constrain harmful managerial exercise of authority. In particular, competition for

employees is an important constraint. Thus, frustrated employees are more likely to be bid away by competitor firms. Moreover, financial markets constrain harmful managerial exercise of authority, as least as a rough tendency, because these actions have a negative impact on profitability.

In sum, there are quite a number of mechanisms that constrain harmful managerial intervention by informing employees that it will be too costly for management to selectively intervene in a harmful manner. These mechanisms thereby stabilize employee motivation. Also, at least some of these mechanisms can be influenced by management in the process of cognitive management.

*Firm heterogeneity.* The argument that the interaction between cognition and motivation in the formation of employee expectations is an important factor in understanding the incentive liabilities associated with selective intervention also allows for a better understanding of firm heterogeneity. Thus, firms in the same industry often differ with respect to “corporate culture.” They often also differ with respect to internal organization (i.e., the internal allocation of decision rights) and where they draw their boundaries. On the background of the argument developed in this paper, these two observations emerge as two sides of the same coin.

Cognition and motivation interact in complicated ways, and the outcomes of such processes may differ dramatically across a population of firms, because of random factors in employees’ perceptions of managerial relational signalling. Thus, occasionally selective intervention for good cause may be mistaken for intervention for bad cause, and *vice versa*. Such differences may be sufficient to produce differences in psychological (implicit) contracts in firms, that is, different corporate cultures (Kreps 1990). In turn, this means that firm will differ with respect to their organizational costs. And this has implications for where they place their boundaries, firms with low organizational costs being more integrated than those with higher organizational costs.

## IV. Conclusions

The modern economic theory of the firm with its clear emphasis on incentive conflicts, downplaying of cognitive issues and separation between motivation and cognition has surely contributed very significantly to our understanding of key organizational mechanisms. The placing of cognitive and motivational issues in separate boxes is consistent with the traditional “situational determinism” (Latsis 1972) of economics, that is, the analyst seeks to derive “single-exit” (unique) solutions. In contrast, recognizing that motivation that may be either intrinsic or extrinsic, emphasizing differential cognition and even allowing cognition and motivation to interact complicates theorizing, in some cases perhaps drastically. The emphasis on criteria such as tractability and simplicity as hallmarks of good science is the main factor that may be invoked of a hope that the “twain shall never meet.”

In contrast to this, it can be argued that although allowing for interaction between cognition and motivation surely complicates theorizing, the situation is not hopeless; thus, there is no inherent reason why such interaction should not be given to the kind of modeling that characterizes contract theory. On the less methodological and more substantive side, it may finally be argued that too much of the essence of what organizations are and what managers do for organizations is missed if the interaction between cognition and motivation is suppressed. Thus, I offered the example of the problem of selective intervention to demonstrate that taking much fuller account of motivational and cognitive issues allow us to gain added insight into an important issues in the economics of organization.

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