TOWARDS A TRANSACTION COST THEORY OF MANAGEMENT CONTROL

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Towards a Transaction Cost Theory of Management Control

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Abstract

In this paper, I present and discuss a theory of management control based on Transaction Cost Economics. This theory specifies the composition of various archetypal control structures, and links these to their respective habitat. These are: (1) arm's length control; (2) machine control; (3) exploratory control; and (4) boundary control. The gist of the argument is that activities predictably differ in the control problems to which they give rise, whereas control archetypes differ in their problem-solving ability, and that alignments between the two can be explained by delineating the efficiency properties of the match. This approach has some interesting qualities. Its relatively simple theme seems to speak to a wide empirical domain, and can be used to make sense of a large set of different control practices. Furthermore, it offers a practicable way to address control structure effectiveness. Finally, the approach is empirically testable.

Key words: Management control theory, Transaction cost economics

1. Introduction

As a field of academic endeavour, management control (MC) studies the processes and mechanisms that organizations use to influence the behaviour of actors within the organization so as to contribute to the achievement of some pervasive objectives of that organization. This field of study has been approached from a wide variety of theoretical strands of thought,

and quite successfully so. Notions and causes from for instance systems theory, economics, organization theory, sociology, psychology, and anthropology have been shown to enhance our understanding of phenomena of control. Nevertheless, there is room for additional theorizing in this field, particularly at the more generic, encompassing level (see section 3.1 of this paper, cf. also Fisher, 1995; Otley et al., 1995, Zimmerman, 2001). In this paper, I maintain that Transaction Cost Economics (TCE; Williamson, 1975, 1979, 1985, 1996) has a contribution to make here, and I present and discuss a TCE-based theory of MC (Spekle, 2001a, 2001b) to demonstrate this position. I will also discuss some opportunities for further work.

2. A Transaction Cost Approach to Management Control

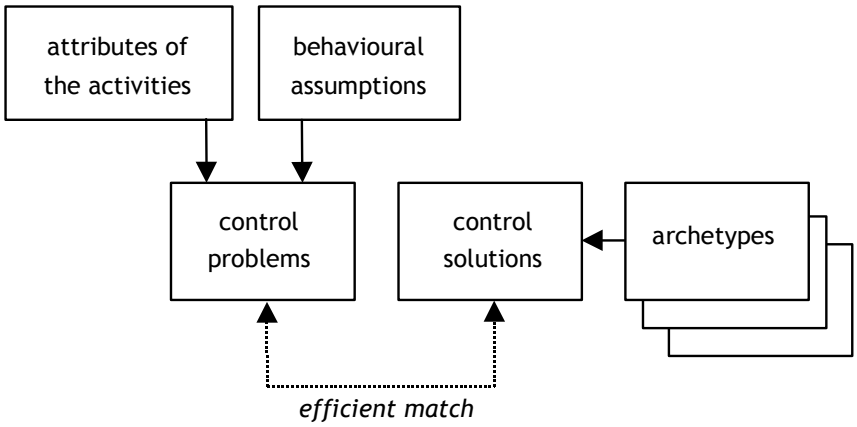
TCE has already some history in MC (see for instance Colbert and Spicer, 1995; Johnson, 1983; Van der Meer-Kooistra, 1994; Van der Meer-Kooistra and Vosselman, 2000; Ouchi, 1979, 1980; Seal, 1993; Spicer and Ballew, 1983; Swieringa and Waterhouse, 1982; Tiessen and Waterhouse, 1983). However, whereas most of the earlier contributions concentrated on specific control problems, specific cases, or specific control instruments, the usefulness of TCE extends well beyond the specific, and it is in fact a solid basis on which to build a more general, encompassing theory to support the study of MC structures. Although the reach of this approach extends beyond the individual organization to include control aspects of cooperative arrangements between firms (Speklé, 2001a, 2001b), I will focus here on MC within the confines of the hierarchy. Within these confines, I will emphasize control at the level of the organizational subsystems (e.g. divisions, departments, or more generally, more or less homogeneous centres of activities that are sufficiently important to warrant specialized control). Much of the argument has relevance also at different levels of analysis (mutatis mutandis) but it is at this level that many interesting problems reside. This section sketches the main tenets of the argument.

2.1 The gist of the argument

An organization depends on the contribution of a large number of individuals to achieve its aims. TCE suggests that MC structures can be understood as solutions to the coordination, adaptation, incentive and enforcement problems that arise in contracting for and controlling these contributions. These problems originate from two main sources: (1) the characteristics of human behaviour; and (2) the attributes of the activities in which the organization engages, and the contributions required from the organization's members to support these activities. On the behavioural side, TCE makes allowance for bounded rationality and opportunism. Bounded rationality refers to man's limited cognitive and computational ability (Simon, 1945). Opportunism is "self-interest seeking with guile" (Williamson, 1985: 47), which

may include calculated efforts to mislead and deceive. The nature of the activities and the required contributions can be defined discriminatingly through their scores on three dimensions: (1) uncertainty, or the extent to which the activities and desired contributions are amenable to ex ante programming; (2) the degree of asset specificity, or the extent to which alternative uses of investments made to support the activity involve opportunity losses; and (3) the intensity of ex post information asymmetry, or the ability to assess the true quality of actually delivered performance. Given bounded rationality and opportunism, these features are predictably associated with distinctive control problems that need to be dealt with. Organizations try to cope with these problems by adopting appropriate MC structures. These come in an overwhelming variety, but within this variety, a limited number of typical control patterns can be discerned: (1) arm's length control, featuring outcome control based on market-derived standards or predefined contractual provisions; (2) machine control, which is administrative control based on codification of behaviour or predefined performance targets; (3) exploratory control that works from converging insights that accrue and spread during the process; and (4) boundary control that is proscriptive in nature, emphasizing actions to be avoided. These archetypal control structures differ in their problem-solving ability, which make them appropriate for the governance of some activities and contributions, but not for others. Moreover, they differ in respect of cost, and ultimately, an empirically observed alignment of an activity with a control structure is explained by delineating the relative efficiency properties of the match. Figure 1 summarizes the basic explanatory structure of this approach.

Figure 1: The structure of TCE-based explanation



2.2 Effectiveness, efficiency, and remediableness

TCE adopts a micro-analytical point of view in which the transaction is the basic unit of analysis. Control structure effectiveness (or rather: efficiency, which is a stronger form of effectiveness in that it presupposes effectiveness) is also studied at that level. TCE asserts that the design of control arrangements is mainly driven by the generic urge to economize on transaction costs. Transaction costs include the relatively straightforward costs of drafting, negotiating, and safequarding an agreement, but also –and foremost- the more elusive cost of maladaptation and adjustment that could be incurred in case of a mismatch between a transaction and its governance structure, resulting in the transaction drifting out of line because of self-serving and dysfunctional behaviour. Explaining observed control structures, thus, comes down to demonstrating their relative efficiency in serving their purpose, which is to increase the probability that the transaction leads to satisfactory outcomes.

This is a very flexible and scaleable approach. Its general logic can be applied to various specific research questions at different levels of aggregation and analysis. In TCE, the central concepts as 'transactions' and 'contracting' are broadly construed, and can meaningfully be used to describe any relationship in which parties expect something from one another and are prepared to give something in return. This includes for instance the relationship between the organization and its substantive parts –be they business units, divisions, departments, or otherwise-, as well as the relationship between senior and junior management within one of these parts, i.e. the kind of relationships MC is interested in. It also includes lateral relations between parts of the organization; relations that are beginning to attract increased attention in the literature (Van Helden et al., 2001; Hopwood, 1996; Otley, 1994).

But what about the assumption of efficiency? For surely, there is more to organization than efficiency, and reducing one's explanations to motives of economizing may be considered rather procrustean indeed. The efficiency assumption, however, only applies to matters of contracting and control, not to the reasons organizations may have to engage in the activities that need to be controlled. The activities may be driven by a variety of motives, including purposes of a non-economizing nature. The approach suggested here accepts this, and works from these motives without questioning them. Only thereafter does the assumption of transaction cost efficiency come in: given what the organization wants from the activity, its control structure is designed in such a way to avoid wasting resources in getting the organization what it wants. This would seem sufficiently unobtrusive to accept it as part of the theory, at least until empirical evidence advises otherwise.

To assess transaction cost efficiency, TCE uses a comparative approach in which the properties and effects of the observed governance structure are confronted with those of alternative control arrangements that could realistically have been installed instead of the one actually chosen. The actual structure is considered efficient -and, consequently, ex-

plained- if this analysis reveals that the actual structure is better equipped to deal with the contractual problems inherent in the transaction than the alternatives, i.e. that none of the feasible alternatives could be implemented with expected net gains. This 'remediableness test' (Williamson, 1996, 1999a, 1999b) can often be applied in a wholly qualitative way, which is quite useful because of the difficulties involved in measuring transaction costs. Especially the costs of maladaptation are notoriously hard to measure, because they are opportunity costs. Yet these tend to be the most important. In many cases, however, one is able to demonstrate that the adopted governance structure has some unique features that are essential in coping with the relevant contractual problems and that cannot be replicated within another mode of governance (except, perhaps, at the expense of prohibitive costs). If the potential transaction costs associated with these problems are evidently large, the explanation of the actual structure may be based solely on the unquantified amount of these costs, for exact measurement of self-evidently large transaction cost differentials may safely be regarded as redundant. Now it is true, of course, that any such assessment of efficiency is necessarily provisional. After all, it is always conceivable that there exists a superior, but hitherto ignored alternative. However, because the procedure urges the researcher to explicate the particulars of the efficiency assessment, it allows theoretical and empirical scrutiny and discussion of the argument. From an academic stance, this is good enough.

2.3 The attributes of the activity and their implications

The effects of uncertainty: programmable versus non-programmable contributions

Uncertainty is a condition that can arise from many sources, including market dynamics, disturbances in the external environment, environmental complexity, task uncertainty, task complexity, and unfamiliarity. However, whatever the source, the effects are similar: desired contributions are not amenable to up front programming, and maintaining flexibility to allow adaptation to events as they unfold and to information as it accrues becomes imperative. This basic insight –which also has a long history in MC, albeit under different names and in various guises[1] -allows organizational activity to be grouped in two broad categories: (1) programmable activities, i.e. activities for which the organization possesses sufficient knowledge and information to decide in advance on the way in which they are to be executed in order to achieve success, or activities for which the outcomes that may realistically be expected to result from them can be defined ex ante; and (2) non-programmable activities, i.e. activities for which the organization lacks the a priori ability and experience to relate actions to outcomes. The availability of norms and standards in the first group permits a fairly comprehensive ex ante articulation of the characteristics of the contribution that is required from

[1] Early references would include for instance Burns and Stalker (1961) and Galbraith (1973).

the members of the organization, and contracting for that contribution can be reasonably complete. Control, therefore, can be prescriptive or authoritative in nature, featuring rules of behaviour, specific instructions, and relatively rigid performance targets, and focusing on assuring compliance to these pre-imposed norms. In the second group, in contrast, it is not possible to specify required contributions in advance. Due to the absence of ex ante standards, contracts must be of a general thrust nature, emphasizing a general commitment or sketching the broad confines within which performance ought to fit, rather than delineating a precisely specified contribution.

Asset specificity: differential access to market discipline

Asset specificity refers to the size of the opportunity losses that arise if the (physical or human) investments made to support the activity are to be put to alternative uses or users. The degree of asset specificity is directly linked to the marketability of the investments. It is low in case of general purpose assets for which a large and active market exists. Conversely, it is high in the case of specialized, custom-built assets for which there is no readily accessible alternative source of supply or demand. Activities of low asset specificity are expected to be governed by the market mechanism, and are outside the scope of this paper. Here, our concern is with activities that fall somewhere in the range of moderate to high asset specificity. Moderate asset specificity implies the availability of a limited number of more or less comparable alternative sources of supply or demand. This number is too small to consign control to the 'invisible hand', but large enough to reduce the leeway for opportunism, either by lending credibility to the threat to take one's business elsewhere when confronted with opportunistic behaviour, or by providing relevant performance benchmarks that can be used for control purposes. In either case, market discipline -though not the sole control device- can be part of the control structure. This changes when asset specificity approaches the higher end of the continuum. Then, competition erodes up to the point of non-existence, and control has to come entirely from within the contractual relation: market-based discipline thus gives way to administrative control, ultimately to be supplanted by it.

Ex post information asymmetry: assessing the quality of delivered contributions

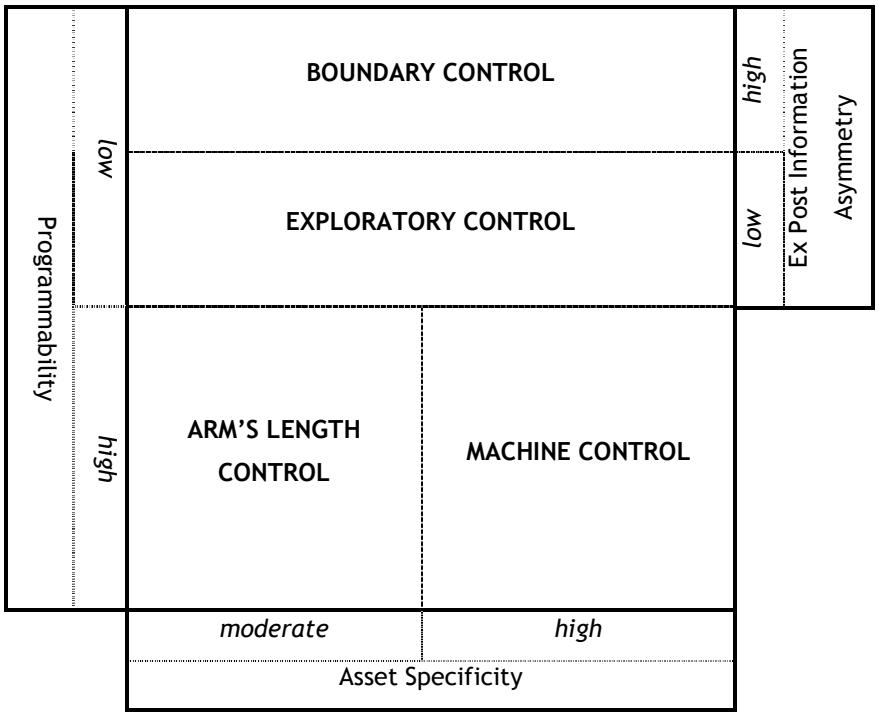
The third variable is the level of ex post information asymmetry, i.e. the extent to which the organization is able to observe and to assess perceptively the true quality of actually delivered contributions. The relevance of this variable is confined to the category of non-programmable activities; in the case of the more programmable ones the required information must by definition be available beforehand. Non-programmable activities carry a certain amount of indeterminacy as a result of uncertainty. This condition may dissolve over time

when in the process of contract execution, information accrues on the actual state of the world and more intimate knowledge on the particulars of the activities becomes available, allowing the organization to 'recognize the quality of performance when it sees it'. If these emerging insights spread through the organization, gradually becoming common knowledge, post hoc performance appraisal may be fairly uncontroversial. In this case, the organization is able to evaluate performance using emergent standards that are shared (or at least known) by those involved in the process. This is a situation of relatively low ex post information asymmetry. If, however, the information on performance and contextual details that accrues during the process of delivering the contribution cannot be communicated to other members of the organization in a reliable way, information asymmetry remains high. This situation may for instance arise when the relevant information is highly specialized in character (e.g. expert information), or when it is not possible to protect the information from opportunistic manipulation by the sender at acceptable cost. Then, the organization is effectually unable to assess the quality of performance, even after it has been delivered.

2.4 Linking control problems and solutions

The attributes of the activity to be controlled are related to predictable control problems, and scoring the activity on these attributes allows identification of the associated set of expected control problems. These different problem sets require different solutions, i.e. a different MC structure. It has often been noted that control structures are compositions of a large number of different elements (Ansari, 1977; Flamholtz, 1983; 1996; Lowe and Puxty, 1989: Otley, 1980, 1999, 2001; Rotch, 1993). These elements include organizational design, the allocation of responsibility and accountability, planning and budgeting, reward and incentive structures, information systems, performance evaluation practices, and more. MC structures as they exist in reality differ with respect to the elements they include. Also, they differ in the relative importance they attach to these elements. Moreover, the elements as such can be designed and used in many different ways. The implication would be, that MC structure variety is potentially bewildering. However, in reality, control structures tend to cluster in a limited number of typical patterns: MC structures come in a large variety, but they are in fact variations on a not so large number of common themes. This allows empirical variety to be reduced to differences among a more manageable number of representative archetypal MC structures. The next step, then, is to describe these control archetypes in terms of their elementary composition and their distinctive problem-solving ability, and to match these in a discriminating way with the control needs that are associated with particular activities as defined by their scores on the attributes asset specificity, programmability, and ex post information asymmetry. Figure 2 outlines the resulting perspective.

Figure 2: Archetypes of control and their habitat



Arm's length control

In the group of programmable activities, where control takes a prescriptive orientation, the emphasis will be on compliance to the predefined norms and standards. When asset specificity is moderate, promulgation and sometimes even enforcement of these norms and standards may partly be left to the market, and managerial involvement in control may be limited correspondingly. Because in this situation there is at least some competition between alternative sources of supply and demand[2], the question as to what constitutes adequate performance is answered in part by the market, thus giving contracting parties some common reference point against which to assess the reasonableness of their expectations and on which to base the control structure. However, asset specificity being moderate, competition is not strong enough to provide self-sufficient safeguards, and additional control mechanisms will be installed. Within arm's length control, these include continuous access to the rich repertoire

[2] Strictly speaking, this need not always be true. Conceivably, asset specificity may also be low in absence of outside competition. This would be the case when some unique monopolistic asset is deployable in several alternative ways. This situation, however, has limited empirical relevance and may, therefore, safely be ignored.

of managerial intervention, probably in conjunction with performance-based compensation plans to increase goal congruence between the contracting parties. However, typical for arm's length control is that the intervention repertoire is only called upon in case performance drifts out of line with the market, allowing 'detached' control and providing transaction cost benefits by economizing on management's time. Because in this archetype the contributor retains significant autonomy, the term arm's length control seems an appropriate label. Arm's length control is associated with generic, relatively unspecific activities for which an outside market exists, but that are internalized nonetheless[3].

Machine control

High programmability is associated with prescriptive control and a focus on compliance to pre-set norms and standards. However, given a high degree of asset specificity, these norms and standards cannot be culled from market interaction as in arm's length control, but need to be defined within the organization. The resulting structure strongly resembles the mechanistic organization described by Burns and Stalker (1961), the machine bureaucracy portrayed by Mintzberg (1983), and Ouchi's bureaucracy (1979). It features standardization and regulation of behaviour, codification of budget targets, detailed monitoring, systematic measurement of performance on pre-defined dimensions, and clearly identified areas of accountability, usually mirrored in the organizational structure. Its emphasis on programming, progress monitoring, and correcting deviations from pre-set directions suggests the label machine control for this structure.

The machine control archetype is a structure that is associated with mature programs and routine activities. This archetype can be refined by distinguishing action oriented and result oriented machine control types. In the action oriented approach, control is predominantly achieved via codification of actions and supervising observance of the rules and instructions, whereas control of the result oriented kind hinges primarily on target-setting, accountability, and reward structures that serve to encourage target-directed behaviour. This distinction has been dealt with quite extensively in the literature -see for instance Merchant's results controls and action accountability controls (Merchant, 1982, 1985), and Ouchi's behaviour control versus output control (Ouchi, 1977)- and need no amplification here, except for the efficiency properties of the alternatives.

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[3] There may be many reasons to internalize such activities. One example may be the presence of site specificity, making internalization sensible, but still allowing performance benchmarking. Another reason could be the wish to preserve some in-house production capacity to serve as a credible threat in the dealings with outside suppliers. Preservation of a 'window on technology' to facilitate future entry in markets not currently considered vital may also account for internalization of activities that are relatively unspecific.

In many instances, there will be no real choice between action oriented control and the result oriented approach, simply because the available information enables the one and not the other (Merchant, 1982, 1985). Then, straightforward feasibility considerations will be decisive. But when both approaches are feasible, result control will usually reign for it tends to require less elaborate structuring –thus relieving the pressure on bounded rationality-, is likely to demand less higher level involvement, and is more supportive of adaptation. The latter aspect is important when –low uncertainty notwithstanding- there may still be some unanticipated disturbances or opportunities demanding a flexible response. The result control variant may rely on a performance-dependent reward system to provide the incentive to elicit that response, whereas the action oriented alternative has no such option and needs to revert to time-consuming hierarchical redefinition of required behaviour.

Exploratory control

Low programmability implies the inability to define in advance the attainable outcomes of the activity. Also, it implies that any up front selection of the courses of action that are most likely to contribute to satisfactory outcomes is bound to require revision along the way. Explicit contracting for concrete actions or contributions is not feasible, and such activities must start out with little preconceived guidance, i.e. as steps on an uncharted route, the travelling of which requires considerable discretionary authority at the level of the travellers. Following that route, however, is a learning process, and in that process, participants acquire an increasingly deeper understanding of the activity and how they should go about with it. This understanding arises from experience, and is thus likely to be asymmetrically distributed (it is only gained by those who actually had the experience) and dispersed (different individuals have different tasks in the activity and their experiences relate to different aspects of the project). Sharing of information, then, becomes vital to decide on the next step on the route and to encourage a sense of coherence in participants' efforts.

Prompt and undistorted sharing of information, however, may conflict with perceived self-interest, because individuals may expect that this information will not only be used for learning purposes and as input for emergent patterns of action, but also for ex post evaluation of individual performance. In that case, one must expect the information to be biased in an attempt to inflate the perception of the quality of performance. In that process, relevant details may be suppressed or become twisted, thus diminishing the value of the information flows for evaluative purposes, but also for learning purposes.

To find a way out of this dilemma, formal instruments of control have not much to offer, and exploratory control is highly informal in nature. It is quite strongly related to Mintzberg's adhocracy (1983). It is also closely akin to the organic organization described by Burns and Stalker (1961). It can be found in innovation-driven (parts of) organizations, but also in

orgnizations going through some major transformation that upsets the relevance of existing know-how and routines. A typical feature of exploratory control is the absence of clearly defined and demarcated individual responsibilities. Rather, it blends permeable matrix-like structures with fluid project teams that are formed and dismantled according to perceived needs as they emerge. Individual responsibilities follow assignments and, like the assignments themselves, are in a permanent state of flux, not getting the time to sink in. Responsibilities, thus, remain unclear. In part, this is a predictable consequence of the impossibility to define in advance what to expect from those involved in the organization, and as such, it may be seen as part of the problem. But it is also part of the solution in that it is a means to encourage a problem-solving attitude, for unclear responsibilities make it harder to refer a problem to someone else as being his or her responsibility (cf. Burns and Stalker, 1961). Essentially, a problem becomes the responsibility of the individual that just happened to stumble upon it first. Solving the problem, then, is likely to extend beyond the capacity of that individual, and he or she must often solicit help from other members of the organization. This serves as a catalyst for information sharing and learning, and it also creates an atmosphere in which cooperation is self-enforcing: next time, the shoe may be on the other foot, and providing help is the best strategy to ensure receiving help on future occasions. Furthermore, it creates an incentive to strive for at least satisfactory performance. Because individuals in this structure depend upon one another for the accomplishment of their own tasks and duties, substandard achievement by some individual tends to interfere with the performance of direct colleagues on whom the individual depends himself. Coupled with the organic information flows that accompany the multitude of cooperative relationships that arises, opportunistic inclinations (e.g. shirking, withholding or manipulating information) become hard to sustain (cf. Marginson, 1999). Moreover, higher level management itself will be involved quite closely in the entire process in a supportive role, reinforcing strategic intentions, giving advice, questioning decisions, asking for explanations et cetera. This involvement is valuable in that it serves coordination and information sharing. But in addition, it ensures that information relevant for assessment of individual performance reaches the proper hierarchical levels.

In this structure, it is not necessary to explicate in advance the criteria that will be used in individual performance evaluation. Simple, open-ended exhortations ('do your best') suffice. The relevant criteria emerge in the process and are known to those involved, because they are part of that very process. Moreover, individuals know that the organization is well-equipped to assess ex post the quality of individual's contribution to the longer-term development of the organization. Then, a simple 'do your best' becomes a meaningful message.

It must be noted that exploratory control is a markedly indulgent structure. It may be sufficient to activate goal-consistent behaviour, but it does not necessarily produce the level of effort the organization desires. Its reliance on cooperation and mutual adjustment foster

close personal relations, which may easily create a lenient atmosphere in which it is hard to blow the whistle. In addition, this archetype's demand for extensive communication and consultation is resource-consuming. A similar remark applies to its unstructured routing of problems, which cannot assure smooth problem-handling. That is why as soon as insights into the properties of required contributions settle, elements of machine control gain importance, ultimately to supplant the exploratory form. But until then, exploratory control may be the best one can do, which explains its existence.

Boundary control

For non-programmable activities that feature incorrigibly high levels of ex post information asymmetry, it is not possible to define and evaluate performance, not even after the contribution has been made. This situation arises in the control of activities that require input of highly specialized knowledge and skills. The treasury function could be a good example. It is quite common that this function is largely beyond the reach of rest of the organization (including its top management), for the financial literacy required to understand the particulars of the treasury function and its performance is often present only in the treasury department itself (cf. Helliar, 1998). In that case, the rest of the organization is unable to assess the quality of treasury's performance and, a fortiori, unable to provide much guidance to that department. However, even though one may be unable to specify what one expects from the activity, one will usually have at least some notion as to the factors that may actually jeopardize the business. These factors become the primary object of control. Thus, the aim of control shifts from ensuring desired contributions to the prevention of unwanted actions or outcomes. As suggested by Simons (1995), such proscriptive control may be labelled boundary control.

Because the information asymmetry that defies performance assessment will also defy a reasonably complete ex ante specification of actions to be avoided, and because that same asymmetry stands in the way of systematic detection of rule-breaking behaviour, boundary control must be expected to leave considerable room for dysfunctional behaviour. Neither is it likely to bring much coherence to the efforts of those involved in the organization. Therefore, boundary control is very much the structure of last resort, only to be expected in conditions where more positive guidance cannot be given and enforced.

3. Discussion

The theoretical approach advanced in this paper is obviously still in its infancy. It is very much the result of a ground-clearing exercise, and a lot of work remains to be done. In the meantime, it would seem that the theory advanced here has a number of qualities that make it worth considering. For one, its relatively simple theme turned out to speak to a wide

empirical domain, and can be used to make sense of remarkably different control structures in a consistent and coherent way. Thus, it offers a degree of unification that is quite rare in MC-thinking. Furthermore, the approach advanced here suggests a pragmatic way to deal with control structure effectiveness. Finally, the approach is empirically testable, at least in principle. These qualities will be discussed at some length in this section. I will also examine some of the weaker spots of the approach to suggest a potentially rewarding agenda for further constructive research in this area. Particularly, the relative neglect of social mechanisms of control (or rather their reinterpretation in terms of economic self-interestedness) and the underdeveloped position of learning effects need to be addressed.

3.1 Unification

A classic motive underlying much theorizing is the quest for unification, i.e. the desire to subsume apparently different types of phenomena under a single explanatory scheme by showing that they are in fact manifestations of the same set of explaining factors or forces (cf. Mäki, 2000). Increasing unification involves scope expansion, that is expansion of the domain of phenomena explained by a particular theory. It also relates to coherence within the explanatory scheme –which is a precondition for unification[4].

In MC, however, unification does not seem to be particularly high on the research agenda. The larger part of the research efforts of the last decade or so concentrates on specific issues in a specific, restricted setting. Studies that strive for a systematically arranged and broadly applicable set of insights that is relevant across a larger empirical domain are quite unusual indeed. This is not to suggest that one of these types of study if inherently better than the other. Obviously, both are needed to further the understanding of MC. But they should preferably develop in consort. One needs deep and rich, specific knowledge to feed into one's general understanding of what goes on in MC, but one simultaneously needs general insights to make sense of specific observations and to decide on what is important there, and what is merely incidental. Now the point is that whereas much important work is being done at the specific level, the generic side of MC less well-developed. Research efforts aiming at more general theories would certainly not come amiss.

Against this background, the transaction cost approach to MC may help to redress the imbalance. Its relatively simple theme speaks to an exceptionally wide empirical domain, and can be used to make sense of quite a large set of remarkably different control structures. Moreover, it does so in a consistent and coherent, unified way. This is perhaps most visible in the treatment of exploratory control. This treatment brings back the explanation of control in

[4] It does, however, not imply theoretical monism, if only because of the multitude of different explanatory questions that may be asked within a discipline. Different questions may require different theories. The idea of unification, thus, is question-laden.

conditions where neither required behaviour, nor desired performance can be specified in advance in the realm of 'the usual'. Whereas previous explanations have tended to relegate control in such circumstances to the ceremonial and ritual (Ouchi, 1979, 1980), to the political (Hofstede, 1981), or to the domain of hope (Merchant, 1982), my analysis suggests that the relevance of the conventional repertoire of control extends well beyond the limited domain of programmable activities, and that even in difficult circumstances of ambiguity, the functioning of control maintains much of its familiar rationale. Control in these conditions, thus, can be studied from the same general premises and mechanisms (such as the assumption that extrinsic motivators are important, the reliance on economic incentives to motivate desired behaviour, the perceived need for monitoring et cetera) that are called upon to explain control in circumstances where contracting can be more complete and explicit. Control in ambiguous conditions, then, is no longer eccentric, but just another variation on a well-known theme.

3.2 Effectiveness

The view of MC as a means to support achievement of organizational goals implies that explaining MC involves a demonstration of the actual contribution of observed MC practices to the attainment of these goals. However, although there is "universal acceptance that the Holy Grail for management control systems researchers is effectiveness" (Machin, 1983: 37), an explicit examination of effectiveness issues is quite rare –perhaps because Holy Grails tend to be hard to find.

Although I would certainly not claim to have found the Holy Grail, TCE's remediableness criterion does move beyond paying lip-service to effectiveness, and it does offer a reasonably concrete and practicable procedure to approach this issue. The remediableness test makes remarkably little assumptions as to organizational goals and motives. It merely requires acceptance of a general preference for more effective structures over less effective ones: organizations prefer structures that actually work to structures that are less helpful (or more wasteful) in getting them what they want. And the idea of comparing an actual structure with realistically conceivable alternatives, and thinking these through in terms of their differential effects, is simple, widely applicable, and instructive. At the very least, it gives the analysis a clear sense of direction, forcing the researcher to explicate how the structure deals with the relevant control problems, and how this compares to the problem-solving ability of alternative structures. The mere act of explicating may be illuminating. It simultaneously provides a basis for academic scrutiny and, consequently, a safeguard against sloppy reasoning.

It is, however, also a somewhat instrumental approach in that it studies effectiveness at relatively low levels of aggregation. It focuses on the immediate goals that pertain at the level of analysis chosen. This level may vary depending on the research question of the

particular study, but it will usually be well below the level of the organization as a whole (e.g. control of the R&D department, control of the treasury function or, more generally, control of some subset of organizational activity). The approach, then, runs the risk of glossing over more high-brow questions as to the contribution of MC to overall organizational effectiveness. This is not to say that the larger picture is ignored altogether -the place of the activity in the larger organization and its strategic role will affect the goals of the activity, which enter the analysis accordingly. However, this cannot guarantee a full consideration of all relevant aspects at the organizational level. But it is operational, and this mere fact puts the approach ahead of most alternative approaches.

3.3 Testability

The theoretical perspective advanced in this paper has been presented without empirical backing. This leaves open a number of important issues, including questions as to the link between the characteristics of the activities and predicted control problems (are these problems really the ones that count and can they really be attributed to the characteristics of the activities as described by the variables of the theory?). Also, the representational validity and efficiency of the archetypes is open to inquiry (do the archetypes describe actual control structures sufficiently accurately and is their assumed situational effectiveness empirically demonstrable?). Clearly, a lot of empirical work remains to be done.

Empirical substantiation (or the reverse, of course), however, will not come easy. As they now stand, many of the concepts that figure in the theory are somewhat hazy, their substance and meaning being suggested rather than defined. Moreover, the scale on which to score the variables is quite rough and the boundaries of the intervals are left implicit. And the archetypes are constructs that help to recognize and expound general tendencies, but it is entirely possible that one comes across some configuration of control that does not fall neatly into any of the pre-identified classes. For these reasons, the application of this theory is bound to command considerable interpretative efforts from the researcher to deal with the shades of grey one is bound to come across.

Although these problems are quite real, they may turn out relatively easy to manage when encountered in a specific empirical setting. Asset specificity for instance is an expansive concept that can mean different things to different people in different situations at different times. Trying to anticipate these different potential manifestations of that condition and folding these back into a more precise definition of the term is unlikely to make it any clearer. In any case, such efforts are not very useful when in some particular context, the specific meaning of asset specificity is sufficiently obvious to be beyond controversy. A similar argument applies when it comes to defining the boundaries between the scoring intervals. Whereas in general, it may well be impossible to identify the exact point where, say, pro-

grammability shifts from low to high, it may be perfectly clear how to score a specific activity in a specific context on this dimension. And even when the appropriate score is not obvious, it is far easier to settle any discussion that might arise in the concrete context at hand than in general, abstract terms. Then, there is not much gain in trying to correct definitional vagueness up front. There may even be some danger involved in early attempts to attain precision: rough definitions have the advantage that non-standard practices -the ones that are likely to be overlooked when drafting one's definitions but that may nevertheless be important in understanding what is going on- may relatively easily be incorporated in the analysis, whereas such practices may remain unobserved when working from strict but insufficiently rich definitions. Definitions may provide focus, helping to see things more clearly, but they may also focus too much, resulting in things not being seen at all. Therefore, further refinement and elimination of ambiguities is better left to future applications.

As a result, the transaction cost approach to MC is not particularly well-suited to inform large scale, cross-section survey-type research. Such research requires the design of measures for the independent variables (the attributes of the activities) that hold across a variety of different firms, and thus demands clear-cut definitions. In absence of these, small sample, case-like research is the natural way to proceed[5]. And this would seem a practicable way, too. It has also been the path taken in empirical research in TCE in general –for similar reasons-, and although this literature is full of struggles with problems of operationalization, it also shows that applying TCE is both feasible and helpful (cf. Masten, 1996; Rindfleisch and Heide, 1997; Shelanski and Klein, 1995, for recent overviews of empirical research in TCE). And by now, these case-like and single industry applications are so numerous that they amount to an enviably solid empirical basis for TCE's conjectures in general.

3.4 Some opportunities for further work

The transaction cost theory of MC as it figures in this paper works from a rather shallow notion of human behaviour. The behavioural assumptions of bounded rationality and opportunism hardly even begin to capture the drives and motives of human behaviour, and neglect much of the characteristics we believe to be valuable in understanding human agency. The need for recognition and respect, the desire to belong, the wish to trust and be trusted –to name but a few factors that 'everybody knows' to be important- play no explicit role in the explanations offered. Also, the proposed theory treats human behaviour as atomistic, underplaying the influence of social context and interaction and representing an 'undersocialized

[5] There is another reason to support case-like work: assessment of control structure effectiveness requires a deep understanding of what the organization wants from its activities. Such understanding is unlikely to result from processing questionnaires or from any other data collection instrument usually relied on in large sample research.

view of human action' (Granovetter, 1985). The consequences of this are potentially far-reaching, because MC operates within an intricate network of social relations, and it is at least plausible to assume that the functioning of MC is somehow conditioned by these relations, and vice versa.

However, although the social is plainly underdeveloped in the approach as it now stands[6], it does not actually ignore social mechanisms and processes altogether. Rather, it reinterprets mechanisms that are usually considered to belong to the domain of the social in economic terms. Recall the earlier examination of exploratory control (section 2.4). This treatment stresses the effects of cooperation, mutual dependency, and personal relations; phenomena that would certainly qualify as social. The effects of these phenomena (such as the increased propensity to cooperate, the pressure to perform, and the emergence of a lenient atmosphere), however, are attributed to (economic) self-interest. This, of course, meets uneasily with common knowledge. In a way, the social is being abducted by economics. But then, the effects themselves are not contrary to common experience. Assuming that these effects as such are satisfactorily dealt with in the approach as it now stands, incorporating the social in the theory would be a refinement rather than an extension. Such a refinement would still be important, though, for it would increase the causal articulation of the approach, improving the insights it provides in the causal processes and mechanisms at work (Mäki, 2000). Also, it would realign the explanation more closely with common sense. This would seem a challenging task for further work.

Another interesting opportunity for further research derives from the largely static nature of the approach, which it shares with its intellectual ancestor TCE. TCE emphasizes comparative statics and offers equilibrium explanations rather than an understanding of the processes involved (Hodgson, 1998; Pratten, 1997; Robins, 1987). This also holds for the approach advanced here. This makes it difficult to come to grips with the interactions between control and the activities. That is problematic, because control itself may affect some of the variables that are treated (provisionally) as exogenous in the approach as it now stands. Especially learning effects seem pertinent. Learning is likely to affect programmability as one of the key variables (which, in turn, affects the relative effectiveness of the control structure in use), whereas control itself can be expected to influence learning. Moreover, different control packages are likely to impinge differently on learning. To be sure, some of this is already present in the approach in its current state of development. Exploratory control is explicitly based on the anticipation of learning and the resulting transforma-

[6] This goes for most of the work in MC. Social processes and their effect on MC have received only cursory attention in the literature at large, and inasmuch as they have been dealt with, their treatment has been pioneering and indicative, rather than concrete and well-developed (cf. for instance Chua, 1988; Covaleski and Aiken, 1986; Covaleski et al., 1996; Hopwood, 1983).

tion of ex ante uncertainty in a situation of relative certainty ex post. Also, the composition of this structure can largely be understood as being designed to enable and stimulate learning and to support dissemination of the resulting insights. However, this is still underdeveloped, and more explicit attention for the interaction between control and learning may make a valuable contribution, not just to the current perspective, but to the literature at large (cf. Otley, 1994; Scapens and Bromwich, 2001 for recent calls to pay more attention to the relation between organizational learning and control).

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