

GOVERNANCE AND COMPETENCE: HOW CAN THEY BE COMBINED?

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Abstract	Transaction cost economics faces serious problems concerning the way it deals, or fails to deal, with bounded rationality, the efficiency of outcomes, trust, innovation, learning and the nature of knowledge. The competence view yields an alternative perspective on the purpose and boundaries of the firm. However, the competence view cannot ignore issues of governance, and in spite of serious criticism, transaction cost economics yields useful concepts to deal with it. This article aims to contribute to the development of theory and empirical research that connects governance and competence perspectives.	
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GOVERNANCE AND COMPETENCE: HOW CAN THEY BE COMBINED?

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Summary

Transaction cost economics faces serious problems concerning the way it deals, or fails to deal, with bounded rationality, the efficiency of outcomes, trust, innovation, learning and the nature of knowledge. The competence view yields an alternative perspective on the purpose and boundaries of the firm. However, the competence view cannot ignore issues of governance, and in spite of serious criticism, transaction cost economics yields useful concepts to deal with it. This article aims to contribute to the development of theory and empirical research that connects governance and competence perspectives.

Key words: governance, competence, learning, transaction costs, organization.

INTRODUCTION

In the field of inter-firm relations an important question is how theory of governance, based on transaction cost economics (TCE), and the 'resource' or 'competence' perspective of the firm can be reconciled (Williamson 1999). I propose that for a synthesis TCE needs to be transformed more radically than Williamson makes out. TCE faces fundamental criticism concerning the way it deals, or fails to deal, with bounded rationality, the efficiency of outcomes, trust, innovation, learning and the nature of knowledge.

Many heterodox economists and business scholars are led by such criticism to reject TCE altogether. I maintain that in spite of the criticism TCE retains valuable insights that should be preserved in a new synthesis. From a competence perspective also, one cannot ignore issues of governance. In particular, the hold-up problem that arises from dependence as a result of relation-specific investments remains an issue. It does not disappear in a dynamic perspective of learning or the development of new competencies, but re-appears in a different light.

New questions and instruments of governance emerge. From the competence perspective we need to incorporate learning and innovation, and next to hold-up risk we need to incorporate risk of spillover. Also, we may learn about the extent and limits of a partner's opportunism, and in learning the extent of opportunism will change. Trust must be added as a factor of governance.

This article proceeds as follows. It consists of two parts. The first yields a theoretical analysis of five crucial themes. One is the issue of bounded rationality, its implications for the extent and nature of foresight and for the achievement of efficient outcomes. Related to this is an issue of time: does TCE really incorporate the implications of the passage of time for the development of transactions and processes of learning? The third issue is the unit of analysis: should it be transactions or relations? The fourth issue is the relation between opportunism and trust. The fifth issue is our understanding of knowledge and learning. The final, sixth issue concerns the implications for the purpose and the boundaries of the firm.

The second part of the article considers implications, predictions and empirical evidence. It analyses the causal structure of TCE, and the empirical evidence for it. For part of TCE the empirical corroboration is extensive and convincing, but for another part it is not. There is convincing evidence that specific investments yield a hold-up problem, which requires governance to control it. Also, TCE yields useful instruments for such governance. That part of TCE is included in the synthesis I propose. However, the evidence for the predictions from TCE concerning organisational integration, in firms, or in bilateral or trilateral governance, in hybrids 'between market and hierarchy', is mixed and inconclusive. I will argue that this is because there are considerations that TCE neglects, and which can be incorporated from a competence perspective. The causal relations in a combined framework of governance and competence retain the empirically successful parts of TCE and add empirical phenomena that TCE cannot explain, and phenomena that contradict TCE.

THEORETICAL ISSUES

Bounded rationality, foresight and efficiency.

Williamson (1999) claimed that he fully accepts bounded rationality: there is fundamental uncertainty concerning future contingencies. However, he claims, there is foresight: one can take such uncertainty into account, infer the hazards that follow from it and conduct governance accordingly (in a 'discriminating alignment') and 'efficiently', i.e. in an optimal fashion (to yield an 'economizing result'). We are not myopic, Williamson claims: we are not so stupid as not to take uncertainties into account when we design governance. And indeed, we can to some extent take risks and uncertainty into account. Firms can spread risks by participating in different markets, in the same way that investors can spread risks in a portfolio of investments. Beyond that, to deal with real or radical uncertainty we can construct scenarios of possible futures, prepare contingency plans for them, and identify the robustness of strategies across different scenario's.

Scholars in the competence perspective do not assume myopia, as Williamson accuses them of doing. However, of course the question arises what the implications of bounded rationality are for the correct identification of relevant hazards. Bounded rationality implies that we might be mistaken

about them. Williamson (1999: 1103) admits that TCE ‘makes only limited contact with the subject of learning’, and indicates that we may be mistaken about hazards and may learn about them as events unfold (1999: 1104). And apart from hazards there are new options. In spite of great imagination and ingenuity, the scenario’s we invented may not include what actually arises. Also, preferences may shift. That is part of learning. And if new insights in hazards arise, new scenario’s, or new options or goals, are we then able to shift from the governance structure engaged upon to an adapted, optimal form? That would always be possible only if there is no path-dependence or lock-in in governance, and that is a strong claim to make.

This is related to the issue of ‘efficient’, optimal outcomes. Williamson’s argument is that ‘dysfunctional consequences and other long run propensities will not be mindlessly repeated or ignored’ (Williamson 1999: 1105). But this begs a number of questions. It implies that dysfunctionality and long run propensities are stable, so that experience in the past is indicative of the future. There is no guarantee that this is the case. Indeed, in innovation and learning it is not, almost by definition. And if one we could correctly adapt our foresight, how can one be sure that the firm survives to implement the lesson in time? TCE seems to fall back on the notion of selection: inefficient forms of organization will be selected out by ‘the market’. That is the usual assumption behind the economist’s assumption of efficient outcomes, going back to Alchian (1950). But if that is Williamson’s argument, he is deviating from the perspective of the firm strategist, who is talking about the survival of the firm (Chiles and McMakin 1996). Furthermore, the selection argument was already shown to be weak by Winter (1964). In selection it is not the best possible but the best available in the population that survives. In the presence of economy of scale inefficient large firms may push out efficient small firms, and thus inefficiency may survive. Furthermore, efficient selection cannot be taken for granted in view of possible monopolies, entry barriers and transaction costs.

Time

Williamson claims that his theory is inter-temporal, incorporating the passage of time, and indeed he claims that this is central to TCE (1999: 1101). And indeed, up to a point it does incorporate inter-temporality. It makes a distinction between ex ante considerations, before commitment of transaction specific investments, en ex post considerations, after their commitment. This yields the ‘fundamental transformation’ from multiple to ‘small numbers’ of options. The theory also is inter-temporal in the sense of taking uncertainty concerning future contingencies into account, as discussed in the previous section. However, TCE does not go far enough and, again, is not consistent in this. Williamson (1999: 1101) does claim that ‘governance structures are predominantly instruments for adaptation, it being the case that adaptation ... is the central problem of economic organization; organization has an inter-temporal life of its own ...’. He admits, however, that this ‘is not to say that it (TCE) has worked all of these out in a satisfactory way. I entirely agree that transaction cost economics stands to benefit from more fully dynamic constructions. But whereas saying dynamics is easy, doing dynamics is hard’. This is in line with Williamson’s other admission, quoted above, that learning is not well developed in TCE. I agree with all of this, but it is quite an admission, after saying that inter-temporality is central to TCE. What is said here is that what is central is not well developed. I propose that nowadays innovation and learning are crucial, and should be in the core of theory. That is in fact what competence theory strives for.

Let me develop one particular issue related to the passage of time and learning that is particularly relevant in the debate. TCE does not assume that everyone is equally opportunistic, but that prior to a transaction one can have no reliable information about one’s partner’s degree of opportunism, and therefore one has to assume opportunism, as a basis for governance, to avoid the hazard involved. Williamson (1985: 59) argued as follows: ‘inasmuch as a great deal of the relevant information about trustworthiness or its absence that is generated during the course of bilateral trading is essentially private information - in that it cannot be fully communicated to and shared with others (Williamson 1975: 31-37) - knowledge about behavioural uncertainties is very uneven.’ This may be so. But it yields insufficient argument to ignore trust. Why should it be easy to incorporate trust? Even if it is difficult, disregarding it may be worse.

There are further problems with Williamson’s position. As the transaction relation unfolds in time, couldn’t one accumulate more or less reliable information about trustworthiness? The

sociological literature gives extensive instructions how to infer intentional trustworthiness from observed behaviour (Deutsch 1973). Did the partner act not only according to the letter but also to the spirit of the agreement? Did he give timely warnings about unforeseen changes or problems? Was he open about relevant contingencies, and truthful about his dealings with others who might constitute a threat to oneself? Did he defect to more attractive alternatives at the earliest opportunity? Or to use Hirschman's (1970) notions of 'voice' and 'exit': how much voice rather than exit did he exhibit? Furthermore, the literature on trust indicates the possibility that in interaction partners may get to understand each other better, which enables a better judgement of trustworthiness, in 'knowledge based trust'. In ongoing interaction they may develop shared cognitive frames, by which they may identify with each other's goals, in 'identification based trust', with understanding or even sympathy for weaknesses and mistakes (MacAllister 1995, Lewicki and Bunker 1996). This does not entail that they always agree. There may be sharp disagreements, but those are combined with a willingness to express and discuss them more or less openly, in 'voice', offering mutual benefit of the doubt. As a result, conflicts may deepen the relationship rather than breaking it.

When Williamson argues for the assumption of opportunism, he does not seem to be aware of the price one pays for that. It leads one to possibly costly contracting. Due to economies of scale in transaction costs it is especially costly for or with regard to small firms (Nooteboom 1993). What is worse, such a contract might seriously constrain the freedom and open-endedness of action that is crucial especially when the collaboration is aimed at innovation and the development of new competencies. Even worse than that, the expression of distrust, based on the assumption of opportunism, is likely to destroy the basis for building up trust as the relation unfolds. There is much evidence in the trust literature that distrust breeds distrust and may even elicit opportunism. Then the assumption of opportunism may become self-fulfilling, with considerable costs of contracting and loss of perspective for a fruitful relationship.

Williamson's argument against taking a dynamic process approach is that it is easier said than done. That is true. The main attraction of economic analysis of equilibrium outcomes is that it is analytically tractable and relatively simple. For a dynamic process approach one may have to resort to complex simulation models, and they have problems of their own, such as, notably, problems of complexity and problems of validation. However, problems of complexity and tractability have been considerably reduced by the development of computers and software. A whole new branch of economics has developed, called 'Agent Based Computational Economics' (ACE). This methodology is currently being used to model the evolution of collaborative or transactional relations, including the building and breakdown of trust, in what is called 'Agent Based Computational Transaction Cost Economics' (ACTCE, Klos and Nooteboom 2001). Agents are modelled as adaptive, learning to revise their assessment of trustworthiness, the weight they attach to it relative to profitability, and their own opportunism. One of the things that this type of model illustrates is that complexity and path-dependence in relations often preclude the achievement of optimal outcomes: those are achieved only occasionally.

Trust and opportunism

Williamson has been ambiguous about trust. In his 1975 book Williamson (1975) employed the notion of 'atmosphere', which comes close, it appears, to trust. In his 1985 book (Williamson 1985) trust is not dealt with. Later, Williamson (1993) faced the issue squarely and asked a very good question: Does trust go beyond calculative self-interest? If it does not, it adds nothing to existing economic analysis. If it does, it yields blind trust and that is inadvisable in market relations, outside relations of family or friendship. In markets it will not survive. Thus, Williamson argued, whichever way you look at it, trust can be discarded. In his 1999 article Williamson suggests that scholars in the competence perspective 'presume the absence of opportunism ... (and thereby) .. enter the world of 'utopian fantasies'. Of course, those scholars are not that naive. They do not reject opportunism but they reject Williamson's rejection of trust. In other words, they allow for trust next to opportunism.

There is a vast literature on trust that cannot fully be discussed here (for a survey, see Nooteboom 2002). There is a widespread view that trust includes elements of control or 'deterrence', including both legal coercion and control by incentives and dependence, as well as elements that go beyond control, as a basis for 'goodwill' or 'benevolence' (Shapiro et. al. 1992, Das and Teng 1998,

Maguire et. al. 2001, Lane and Bachmann 2000, see also the special issue of *Organization Studies* on 'Trust and control in organizational relations', 22/2, 2001). As noted by Maguire et. al. (2001: 286): if we do not include the latter, we conflate trust and power. Most authors do not wish to suggest that altruism or goodwill operates independently from self-interest or control. The relation between the two is a subject for extensive debate. As noted by Bachmann (in Lane & Bachmann 2000: 303), trust is a hybrid phenomenon, including both calculation and goodwill. TCE, however, only includes control, and denies the viability of trust that goes beyond calculative self-interest. Many authors feel that such control is foreign to the notion of trust, and that 'genuine' trust is based on other, more social and personal foundations of trustworthiness, such as loyalty, empathy, friendship, reciprocity, a sense of moral duty or obligation, and routinized behaviour. Therefore, trust has been defined as the expectation that a partner will not engage in opportunistic behaviour, even in the face of countervailing short-term opportunities and incentives (Bradach and Eccles 1984, Chiles and McMackin 1996, Nooteboom 1996). To argue the case for trust in more detail, let us return to Williamson's clear and pointed argument that if trust goes beyond calculative self-interest, it necessarily becomes blind and unconditional, and in markets that is not viable. The counter-argument is that trust is both necessary and viable. Markets could not work without non-calculative trust. Trust can work without becoming unconditional, which would indeed be unwise, as Williamson suggests.

At some level trust is inevitable. Complete lack of trust beyond calculative self-interest would prevent one from entering any relation and thereby one would deprive oneself from evidence that may contradict mistrust. Absence of trust would yield an infinite regress of seeking safeguards for the hazards involved in ambiguity concerning the terms of safeguards. Such ambiguity is inevitable: even legal language does not yield complete lack of ambiguity. No language can. It has been recognized by others that even if all relevant contingencies were known, there will still be incompleteness of contracts because of 'bounded writing and communication skills' (Hart 1990: 699) and the fact that 'language would not be rich and precise enough to describe all the eventualities' (Milgrom and Roberts 1992: 129). On the other hand, too much trust will be corrected by experience that invalidates it.

There are several foundations for trust beyond calculative self-interest. One lies in norms and values concerning decent behaviour, or ethics, which constrain opportunism. They are not calculative but socially inculcated, as part of tacit knowledge or predilections. There is an argument from evolutionary psychology that there is a tendency towards reciprocity 'in our genes'. Reciprocity entails a give and take that goes beyond economic 'quid pro quo'. Return favours are not guaranteed, and their size and timing are not specified. That was conducive to survival in the ancient hunter-gatherer societies in which humanity evolved. In gathering edible plants, roots, nuts, etc., and even more in hunting, there is a large variance of individual success. This, together with problems of durable storage, entails an evolutionary advantage of the willingness to surrender part of one's yield to others in need, in the expectation to receive from them when they are successful (Barkow et. al. 1992: 212). This would solve the problem, often noted in the literature, how in a sequential game of give and take the first move of giving, and thereby making a risky pre-commitment, is made (Simmel 1978, Luhmann 1979, quoted in Lane & Bachmann 2000: 3). The evolutionary argument suggests that we do this instinctively. It also suggests that we have developed a 'cheater detection mechanism' (Barkow et. al. 1992).

Another basis for non-calculative trust lies in routinization (Nooteboom 1999). Herbert Simon a long time ago showed that routines have survival value because they reserve our scarce capacity of 'focal awareness' in rational, calculative thought for conditions that are new and demand priority. When things go well for a while in a relationship, one tends to take at least some of it for granted. One may no longer think of opportunities for opportunism open to a partner, or to oneself. And it seems rather odd to call routines calculative. How can something that is subconscious be calculative? I proposed (Nooteboom 2002) that on the basis of experience in relations, trustworthiness is assumed until evidence to the contrary emerges. In other words, trust is a 'default'. The possibility of opportunism is relegated to 'subsidiary awareness' (Polanyi 1962). Of course, routines are not unconditional, unless they have sunk so deeply into our nature that they become instincts. Generally, when something out of the ordinary occurs, our awareness shifts from subsidiary to 'focal' and we look critically at what is going on. As Simon (1983) pointed out, we need emotions of danger and excitement to catapult us into focal awareness. In relations of voice, we must next control emotions to

give the partner the benefit of the doubt. Thus, routine behaviour is not necessarily blind, or more accurately: it is not unconditional. Does this triggering back into focal awareness, then, make routines calculative? Again: can subsidiary awareness be called calculative? And can emotional triggering be called calculative?

While trust is not always calculative, it is constrained by possibilities of opportunism (Pettit 1995). One way to model trustworthiness is in terms of a limited resistance to temptation towards opportunism. This may be modelled as a threshold for defection: one does not opportunistically defect until the advantage one can gain with it exceeds the threshold. This threshold may depend on the wider cultural environment, the narrower cultural environment of a firm one works for, personal upbringing, and genetic endowment. It is likely to adapt as a function of experience. Trust may then be modelled as based on a perception of such a (limited) constraint of opportunism on the part of a partner. That perception may entail tacit rather than explicit knowledge. It will be routinized, based on experience, and part of subsidiary awareness. Within that limit one can economize on contracting. When temptations are perceived that may be too large, trust makes way for calculation. So even though it is and should be constrained, since indeed unconditional trust is unwise, within the margin of perceived or assumed trustworthiness it can save on contracting.

Dynamic capabilities

Williamson (1999: 1095-96) objects to the vagueness ('expansiveness' and 'elasticity') of the notion of competence or resource. And one can sympathise with this. Some people say a competence is a special kind of (intangible) resource, others say that it is the ability to efficiently exploit a resource, and yet others say that it is the ability to develop new resources (in 'exploration'). There is an obvious relation between competence or resource and the notion of a routine from evolutionary economics (Nelson and Winter 1982). There, a hierarchy of routines is recognized: for production, for investment and for changing routines of production. However, the notion of a routine is equally vague. Nevertheless, I note that the notion of 'competence' is not more vague than the notion of transaction costs was at the outset of TCE. In TCE, much effort has gone into making its notions more precise, and to operationalise and measure them. That latitude must be allowed also for the emergent competence perspective.

While transaction cost economics focuses on static efficiency – by trading off production costs, transaction costs and costs of organisation, given a certain state of knowledge, technology and preferences– we require a perspective of dynamic efficiency or innovation, incorporating shifts of knowledge, technology and preferences. It is now a priority for firms to develop 'dynamic capabilities'. For this, they need to maintain flexibility of configurations of competencies, for the sake of innovation in the form of Schumpeterian 'novel combinations'. This yields the claim that firms should concentrate on the activities at which they are best ('core competencies') and outsource the other activities as much as strategically possible. For example, in order to reduce development times of new products and to reduce risks of maladjustment to customer needs, the supplier should be brought in as a partner in developing and launching a new product. However, note the qualification of strategic possibilities. One may need to integrate activities in order to control risks of dependence and spillover, or to preserve options for future core competencies. Here, one can combine perspectives of competence and TCE.

This perspective of 'dynamic capabilities' is more fundamental for the boundaries of the firm than transaction cost considerations. Considerations of capabilities are strategically more crucial than transaction costs, especially since there are instruments to control hold-up risk in outside relations. Dynamic capabilities entail that in addition to the usual considerations of efficiency, flexibility, and speed, learning is an important goal of collaboration. For this we need a theory of knowledge and learning.

Knowledge and learning

As economics more generally, TCE has no explicit theory of knowledge and learning. The implicit, espoused view is that of naive realism: we can observe reality, this yields information, which may cost time and money to collect, but when available yields the same, objective knowledge to different people. Language and communication are seen according to the label and conduit metaphors. A term

is a label attached to an entity that is its meaning, and in communication these labelled packages are shipped across communication channels.

I propose a different theory, which is espoused in the organizational literature (Weick 1979, 1995). People observe, interpret and evaluate the world according to categories or mental frameworks of perception, interpretation and evaluation perceptions and interpretations (Johnson-Laird 1983). Those frameworks constitute 'absorptive capacity' (Cohen & Levinthal, 1990). They have been developed in interaction with the physical and social world (Nooteboom 1992). This implies possible path-dependence of cognition. It also precludes claims of objectivity, because knowledge is constructed. However, it is likely to be in some way connected to reality, or representative of it, since it is by interaction with the world that we develop our ways of seeing it. This yields what Lakoff and Johnson (1999) called 'embodied realism'. However, we can't make independent claims of realism, since we cannot 'climb down from our minds to see how knowledge is attached to the world'.

What we have inherited from evolution is an ability to construct our views and interpretations in interaction with the world. Since this is a shared heritage, there is bound to be some similarity between people in the way they do this, and perhaps also in its outcomes. This saves us from the arid extremes of post-modern relativism. However, since this 'knowledge' is developed in interaction with one's specific, idiosyncratic string of experiences in specific contexts, it is also bound to vary between people, to the extent that they have developed in different environments and have not communicated with each other. The resulting variety of cognition is not a problem but an opportunity. It yields a source of innovation; of Schumpeterian 'novel combinations'. Since we cannot climb down from our minds to inspect the realism of our views, the variety of views that people have, from different experiences, yields the only opportunity we have for correcting our errors of knowledge.

As a result of the cognitive variety discussed before, there is always greater or lesser 'cognitive distance' between people. Learning from interaction requires sufficient distance for novelty but also sufficient proximity for understanding (Nooteboom 1992, 1999). If effectiveness of learning is the mathematical product of comprehensibility and novelty, comprehensibility decreases linearly and novelty increases linearly with such distance, this yields an inverse-U shaped function, with an optimal cognitive distance.

In organisations, a focus is needed of shared perceptions, interpretations, and values, in order to achieve common goals. This yields the idea of an organisation as a 'sensemaking system' (Weick, 1979, 1995, Weick and Roberts 1993), 'system of shared meaning' (Smircich, 1983), 'focusing device' (Nooteboom, 1992, 1999), or 'interpretation system' (Choo, 1998). This is more fundamental for organisations than the need to reduce transaction costs. However, such organisational focus creates a risk of myopia, which needs to be redressed by employing complementary cognition from outside partners, at a 'cognitive distance' that is sufficiently large to yield novel insight and sufficiently small to ensure that it is still comprehensible (Nooteboom, 1992, 2000). This yields the argument for outside relations for the sake of 'external economy of cognitive scope' (Nooteboom 1992). Reducing cognitive distance entails convergence of cognition. In intensive, long term interaction cognitive distance will reduce, especially if it is also exclusive, i.e. if partners do not have different interactions with others as well. This yields an argument not to integrate but maintain distance in inter-firm collaboration, where outside partners remain immersed in outside relations with others (Nooteboom 1999).

Unit of analysis

The focus of attention should be on the transaction relation rather than the transaction (as TCE claims). Even in TCE, the core concepts of opportunism, specific investment and hold-up relate not to a transaction but to a transaction partner or the relation one has with him. Relational risk inheres in a relation with a specific partner. This point connects with the earlier discussion on the time issue. If we are to see 'governance structures as instruments of adaptation' and organization as 'having an inter-temporal life of its own' (Williamson 1999: 1101), then the unit of analysis has to be the evolving relation.

Competencies are not off-the-shelf products but are embedded in the heads and hands of people, in teams, organisational structure and procedures, and organisational culture. They have a strong tacit dimension, especially in innovation. Their development is path-dependent: they build

upon preceding firm-specific assets and organisational learning (cf. Lippman & Rumelt 1982). Ongoing or intermittent interaction is needed to enable the exchange of tacit knowledge. Some scholars conclude that this requires full organisational integration, but I deny that. However, the exchange and joint production of knowledge between firms with different perspectives and competencies does require mutual absorptive capacity and a shared language for communication, to cross 'cognitive distance'. This takes time to develop, and can constitute a dedicated investment, so that relations have to last a sufficiently long time to make the investment worthwhile. Here, in this new perspective on specific investments, in mutual understanding, there is a connection between the competence perspective and TCE.

A second argument derives from the previous discussion of trust. If we really appreciate the time dimension, then we have to analyse how trustworthiness or opportunism evolve in time and how their extent may be observed.

Purpose of the firm

The simple theory of knowledge indicated above gives the basis for a competence view of the purpose and boundaries of the firm that is more fundamental than the theory offered by TCE. I am not saying that thereby transaction cost considerations are irrelevant to the boundaries of the firm. They are just less fundamental than cognitive considerations.

As suggested above, the basic purpose of the firm is to serve as a 'focusing device', to achieve a common purpose among people with different knowledge and competencies, based on different experience. This requires a certain amount of alignment of cognitive categories for perception, interpretation and evaluation (which includes value judgements and intentionality). In other words: reduction of cognitive distance. The proper alignment of cognition, in this broad sense, including motivation and goals, is the primary task of leadership. It is related to the Schumpeterian notion of charisma as a crucial trait of entrepreneurs. Note that this alignment of perception and motivation reduces problems of opportunism: it reduces both the perception and the utilization of 'opportunities for opportunism'. However, such alignment entails a risk of myopia: relevant opportunities and threats for the firm are not perceived. To compensate for this, the firm needs complementary cognition from outside partners, to utilize external economy of cognitive scope. This yields a new perspective for evaluating the purpose, choice and governance of inter-firm relations.

Cognitive alignment in the firm, or in networks of firms, should not go so far as to reduce cognitive distance to zero, with everybody having the same, shared experiences and no outside contacts, or identical contacts. Homogeneity of cognition tends to have priority when efficient production is strategically crucial, with division of labour and the utilization of economy of scale, requiring strong connections between nodes in the scripts. Then the need for cognitive proximity prevails; optimal distance will be relatively small. Variety and novelty of cognition have priority when innovation is strategically crucial. Then the need for cognitive distance prevails, and optimal distance will be relatively large. A problem arises when both needs arise at the same time.

This connects with the discussion of 'exploitation and exploration', in the organization literature (Holland 1975, March 1991). Exploitation of existing resources is necessary to survive in the short term, development of new resources and competencies ('exploration') is required to survive in the long term. Their combination is paradoxical. Exploitation generally requires close co-ordination, and entails a narrowing process, in the elimination of redundancy, variety, ambiguity, and hence entails small cognitive distance. Exploration generally requires a loosening of linkages, opening up to variety and ambiguity, with large cognitive distance. So, if they need to be combined, a solution is to combine a sharp focus, with small cognitive distance, within the firm, for the sake of exploitation, with 'external economy of cognitive scope' in outside contacts at a larger cognitive distance, as a basis for exploration (Nooteboom 2000a).

Williamson noted the spillover argument from Teece (1986) for the decision to integrate activities: to prevent inter-firm contracting from yielding leakage of proprietary knowledge. However, Williamson (1999: 1097) insists that although it seems obvious that integration can prevent spillover better than disintegration, that intuition '.. needs to be worked through. What, precisely, are the mechanisms through which this differential protection is realized?'

Boundaries of the firm

From a competence perspective there are arguments for integration, next to TCE arguments of hold-up control. As in the control of hold-up risk, spillover also can be better controlled within the firm, where one can demand insight in streams of knowledge, and create guarantees against spillover better than one could demand from an independent outside partner. Knowledge spills over less easily when it is tacit, rather than documented. Even then, it can still spill over by poaching of the staff in which the knowledge is embodied. However, spillover can be further obstructed when competencies are embodied not in single people but in teams, organizational structure or culture. Another argument, from the competence perspective, for integration is that by outsourcing one may surrender the capability to assess the value of the offering of suppliers (Beije, 1998). Also, one may drop a capability that later turns out to be crucial in order to utilise or replace elements of core competence. Teece (1986) proposed that the appropriation of returns on core competencies may require access to complementary assets. Even if those are not part of core competence, they may have to be integrated in the firm. One may therefore have to see such complementary assets as attached to core competence.

From a competence perspective the arguments for disintegration, in outside relations, are: cognitive scope and flexibility of Schumpeterian novel combinations. These come in addition to TCE considerations of economies of scale in specialised outside producers (if the corresponding productive assets are not too specific), and the 'powerful incentives' of an independent producer responsible for his own survival.

Concerning loss of crucial capabilities, mentioned before, there are ways to deal with these problems also in alliances. One is to make use of a benchmarking service, so that one can compare a supplier's offering with best practice. A second is to maintain sufficient R&D in the outsourced activity to maintain 'absorptive capacity', i.e. the ability to judge developments in the field. This may also help to retain the option of re-entry later, to retain options for future core competencies, perhaps as a second mover, but still fast enough to be a serious player. This is reflected in empirical evidence that firms retain an R&D capability in activities that were outsourced (Granstrand, Pavel & Pavitt, 1997). Such R&D can perhaps be done in collaboration with others, in an R&D consortium. One may also try to retain the required openings in distribution channels, perhaps by means of alliances. In other words, outside collaboration may be used to retain options for the utilisation or modification of core competencies. Here, the flexibility of outside collaboration returns: one may use it to maintain more flexibility also in options for future core competence.

Overall, the argument for an alliance is that it gives more focus of core competence, more flexibility of configuration, and more variety of competence, as discussed before. Another great advantage of an alliance is that it entails fewer problems of clashes between different cultures, structures and procedures, in management, decision making, remuneration, labour conditions, information and communication, which often turn out to be the biggest obstacles for a successful MA. Of course such clashes can also occur in alliances, but less integration still entails fewer problems of integration.

The take-over of a young, dynamic, innovative firm may serve to rejuvenate an old firm (Vermeulen & Barkema, 2001). In a growing new firm, the entrepreneur often has to turn himself around to the role of an administrator, or hire one, to delegate work and institute formal structures and procedures for the coordination of more specialised activities in larger scale production. He may not be able or willing to do that, and it may be to the benefit of the firm when it is taken over by a firm with a better managerial capability. However, it may be more likely that the entrepreneurial dynamic of the small firm gets stifled in the bureaucracy of the acquirer, in which case it should stay separate.

There is an argument of scale for both integration and disintegration. In production, many economies of scale have been reduced, e.g. in computing. However, there is still economy of scale in, for instance, distribution channels, communication networks, network externalities, and brand name. For integration, the argument of scale is that one pools volume in activities in which one specialises. For outsourcing, the argument is that for activities that one does not specialise in, an outside, specialised producer can collect more volume, producing for multiple users. That may also offer more opportunities for professional development and career to staff that are specialised in that activity.

From the perspective of brand image there are also arguments for both integration and separation. In an alliance there may be too great a risk that the image or quality of a brand allotted to

partners will not be maintained sufficiently scrupulously. On the other hand, it may be better to maintain an independent, outside brand, to preserve its local identity.

An equity joint venture is an intermediate. It yields advantages of control without full integration of all activities of the parents. Thereby, it allows for more focus on core competencies and limits integration problems. It can separate off and protect a new, entrepreneurial activity from established bureaucracy. By separating activities off from the parents one can also better control spillover problems for existing partners. If an existing partner of one of the parents is suspicious that his knowledge may spill over to parts of the other parent that compete with him, in a joint venture that can be shielded off. The new venture may also offer new opportunities for financing.

Governance

Having extended and clarified the criticism of TCE and the substance of the competence perspective, I now turn around to argue the need for including useful elements from TCE to incorporate governance in the competence perspective.

As argued, we cannot deny or ignore risks of opportunism, and resulting problems of relational risk, even if we accept that trust is real and relevant. It was argued above how important it is, from a perspective of learning by interaction, to invest in mutual understanding between diverse perspectives, to utilize complementary cognition at a distance. Such investment is often relation-specific, and thus creates the problem of hold-up identified by TCE. Such specific investment is not necessarily symmetrical. A larger absorptive capacity, resulting from specialized staff, and a greater fund of experience in crossing cognitive distance can yield understanding with lower specific investment. This is an issue, for example, in collaboration in R&D between large and small firms. The large firm tends to have greater absorptive capacity than the small one, and thus the latter is more vulnerable to spillover.

However, TCE has to be expanded here also. In governance, we have to systematically incorporate the spillover problem. Spillover risk and the notion of hostages are connected. For example, information provided to the partner may be used as a hostage, in the sense used in TCE. In fact, that can be used deliberately as an instrument in a governance package. For example, when specific investments are one-sided, and there are drawbacks in making the hold-up risk more even by sharing ownership, compensation may take place by the less dependent party surrendering sensitive information as a hostage. That may be the preferred solution if such information transfer is useful also for other reasons, such as helping the other side in improving his competence. Take the case of small and large firm collaboration. Lesser absorptive capacity of the smaller firm not only increases his relative hold-up risk (due to higher specific investment in understanding) but also his spillover risk. The larger partner surrendering sensitive knowledge may strike a balance. That may yield three benefits at once: balance of hold-up risk (by the hostage mechanism), balance of the spillover risk, and improvement of the small firm's competence.

A small firm can also protect its knowledge from spillover by keeping it more tacit. For a large firm this is more difficult, because under division of labour, with many specialists interacting with each other, knowledge has to be more documented in procedures, for the purpose of co-ordination. In a small firm, with direct supervision of the whole of a firm process such need is less.

If spillover cannot be protected by internalisation within the firm, because of the need for collaboration with outsiders, to profit from their complementary cognition, one can try to maintain exclusiveness, and demand that partners do not interact with one's competitors, in the area of activity under consideration. However, such exclusiveness of relations constrains the sources of learning one's partner has access to. In other words, it constrains the variety of knowledge that is a source of innovation. This is exacerbated by the fact that durable relations with exclusive, more or less isolated partners will in due course reduce cognitive distance and further reduce variety. An interesting option arises under 'radical' speed of change, defined as change of products or technology that is faster than the time it takes for knowledge to spill over. Note that what is relevant here is not just the time needed for the 'information' to 'reach' a competitor. In fact 'spillover' is a misleading term, because it suggests the naïve view of knowledge as a commodity shipped across a communication channel. A crucial question is whether a competitor is able to absorb, imitate and implement the knowledge, and

how long that takes. Under the condition of radical speed, the spillover problem drops out: one has become a moving target.

When we combine the governance and competence perspectives, an important issue for both science and policy is the following. How do we make the trade-off between on the one hand durability and exclusiveness and on the other hand flexibility of network relations. Sufficient durability and exclusiveness are needed to recoup the specific investment needed for mutual understanding and collaboration, for the sake of innovative novel combinations. On the other hand, if relations become too durable and exclusive they induce rigidity and constrain innovation. This has implications for the debate on national innovation systems (Nooteboom 2000b).

IMPLICATIONS AND PREDICTIONS

TCE an empirical success story?

Williamson (1999) claimed that in contrast with the competence perspective TCE yields sharply testable predictions, which are largely corroborated, and thus can be seen as an ‘empirical success story’. In the competence perspective, Williamson claimed, there has been lack of sharp and falsifiable prediction, operationalisation and empirical testing. Is this claim valid? First of all, there are well-known methodological problems concerning corroboration and falsification. I will not discuss those here, since they apply to both TCE and the competence perspective. For a recent discussion, see Carter (2002). I focus on the empirical evidence, while accepting that for methodological reasons their conclusiveness remains, and probably will remain, problematic.

However, even taking that into account, I make the following counterclaims:

1. The empirical success of TCE is only partial
2. Some of the empirically successful implications from TCE can also be explained from the competence perspective
3. Of course a newer perspective, such as the competence view, is always less developed empirically: operationalisation of concepts has to develop, and data have to be gathered. However, progress has been made.
4. Some predictions from the competence perspective that run counter to TCE have been corroborated

Which predictions?

An important issue, familiar in econometrics, is whether one tests reduced form equations or structural equations. Results from the former do not necessarily yield evidence for the latter (Carter 2002). That is important especially to find out that TCE has been only partially confirmed. When we turn to structural equations some of them are corroborated but others are not. In reduced form equations these results get mixed up and the evidence becomes inconclusive. The reduced form of TCE is as illustrated in Figure 1.

Figure 1 about here

Figure 1 indicates that in reduced form TCE predicts the three forms of governance, depending on uncertainty, specific investments and frequency of transactions. Incorporation in the hierarchy of a single firm obtains when uncertainty, specific investments and frequency of transactions are all high. When uncertainty and specific investments are significant but not too high, bilateral contracting obtains under high and trilateral contracting under low frequency. In bilateral governance instruments are: contracts (which, however, cannot be complete), bilateral dependence (due to sharing of ownership of specific assets, partial monopoly as a result of specific investments), exchange of hostages and reputation (although the latter is not well developed in TCE). Tests on the basis of

Figure 1 yield ambiguous results: there is more or less corroboration (for a survey, see Carter 2002). Neither corroboration nor falsification are convincing.

However, when we disentangle the reduced form into structural equations, in Figure 2, more clarity arises. Tests yield convincing corroboration for causal relation A: specific investments plus uncertainty yield a hold-up risk and the need for governance to control it. The effect of specific investments on relational risk and some implications for governance have been corroborated extensively (Monteverde and Teece 1982, Walker and Weber 1984, Levy 1984, Anderson 1985, Heide and John 1988, John and Weitz 1988, Anderson and Weitz 1989, Berger et. al. 1995, Nootboom et.al. 1997).

Figure 2 about here

The evidence is not convincing for relation B: the form of governance depends on hold-up risk and frequency of transactions. I propose that the reason for inconclusive results is that there are other causal mechanisms that TCE disregards. Those mechanisms derive from the competence view.

Predictions from an integrated perspective

My view of the structural equations according to a combination of the competence view and the governance view is illustrated in Figure 3. The elements of it were introduced in the preceding theoretical sections.

Figure 3 about here

Note that causal relation A from Figure 1, which was well confirmed in TCE, is included. A new class of specific investments is added: in the building up of mutual understanding, for the crossing of cognitive distance, and in the building up of relation-specific, personalised trust. The latter is more obviously relation-specific than the former. As argued in Nootboom (2000a), the ability to cross cognitive distance may not be entirely relation-specific. It depends on the extent to which the knowledge involved is tacit. Even there however, the ability to understand people who think differently may apply to new relation.

What is further added from the competence view is printed in italics. A central feature is uncertainty of learning and innovation. I distinguish between the implications of uncertainty concerning the contingencies of contract execution and the implications of uncertainty for learning by interacting with others. Greater uncertainty in the sense of complexity and fast change of technology, markets and (other) institutions yields the need for outside partners for greater flexibility of configurations of competencies and ‘external economy of cognitive scope’, as argued above.

This yields a prediction counter to TCE. According to TCE greater environmental uncertainty will (should) yield more integration under hierarchy, because it makes contracting and monitoring more difficult as an instrument to protect against the hazards of opportunism. According to the present perspective, greater uncertainty, in the sense of greater complexity and volatility of technology and markets, increases the need for outside complementary cognition, and hence will (should) lead to more, not less outside relations. This controversy is amenable to empirical test: Is there more or less integration when uncertainty in this sense is greater?

The prediction can be further sharpened on the basis of the notion of optimal cognitive distance, discussed before. There must be distance in order to generate novelty. This pleads against integration under a single ‘hierarchy’. However, in spite of this distance there must also be sufficient understanding. Partners will have to invest in mutual understanding, for crossing cognitive distance. This requires a certain intensity and duration of the relation, to build this up and recoup the investment involved. These conditions obtain when the need for outside complementary cognition is greatest, which is when there is great complexity and volatility in technology and markets. Thus the

prediction is as follows: In high technology industries, with a high rate of innovation, to be measured perhaps by relative intensity of patent applications, there is (and should be) a 'move to the middle': away from the extreme of integration by merger or acquisition, and away from the other extreme of arms-length, ad hoc contracting, to temporary but more or less durable and intensive alliances.

Trust yields a fundamental 'instrument' for governance. Contrary to TCE (Williamson 1993) I claim that trust does go beyond calculative self-interest, without thereby necessarily becoming blind and unconditional. This was argued in a previous section. There is certainly a need for more empirical testing. However, in the literatures in marketing and buyer-supplier relations there has been extensive operationalization of the notions of competence and trust, and empirical testing of their effects, next to the effects of variables from TCE. Trust has indeed been found to reduce relational risk, and to act, to some extent, as a substitute for other instruments for governance (Dwyer et. al. 1987, Anderson and Weitz 1989, Anderson and Narus 1990, Achrol 1991, Moorman et. al. 1992, Morgan and Hunt 1994, Berger et. al. 1995, Kumar et. al. 1995, Gulati 1995, Geyskens et. al. 1996, Nootboom et. al. 1997, de Jong and Nootboom 2001).

An example of an empirical study is Nootboom et. al. (1997). In their econometric model, the dependent variables reflected perceived relational risk, specified in two variables: size and probability of switching costs. The model tested effects on relational risk of specific investments (TCE) and trust. The test was whether trust would add anything to TCE considerations. Trust was specified in two variables: habituation (routinisation) and 'institutionalisation', which reflected joint norms of conduct developed in the relationship. Operationalisations of the central variables are specified in Appendix A. Control variables were: contracts, mutual value, uncertainty avoidance, firm sizes. The hypothesis that variables of dependence and trust could be operationalised and measured and that trust would have an effect in addition to TCE variables was confirmed.

Contingencies of governance

For specification of econometric models in empirical work, one should take care of contingencies that affect causalities, and incorporate them as control variables. The choice and effectiveness of instruments for governance depend on conditions: the goals of collaboration, characteristics of the participants, technology, markets and the institutional environment. For example, there is no sense in contracts when the appropriate institutions of laws are not in place, the police or judiciary is corrupt, and when compliance cannot be monitored. When technology is flexible, so that one can produce a range of different specific products with one set-up, the specificity of investments and hence the problem of hold-up is limited. Possibilities of spillover are constrained when knowledge is tacit, and do not matter when technology changes fast. Reputation mechanisms don't work when there are ample exit opportunities for defectors. Trust is difficult in a distrustful environment, where cheating rather than loyalty is the norm.

Innovation has its special conditions. Exchange of knowledge is crucial, with corresponding risks of spillover. Especially in innovation the competencies and intentions of strangers are difficult to judge. Relevant reputation has not yet been built up. Uncertainty is large, limiting the possibility of specifying the contingencies of a contract. Specific investments are needed to set up mutual understanding. There is significant hold-up risk. Detailed contracts would limit the variety and scope of unpredictable actions and initiatives that innovation requires. With these problems in contracts, trust is more needed to limit relational risk. An additional problem with contracts is that they may obstruct the building of trust. This does not mean that there are no contracts, but that they cannot be too detailed with the purpose of controlling hold-up risk. A productive combination of instruments is mutual dependence complemented by trust on the basis of an emerging experience in competent and loyal collaboration. Trust is needed besides mutual dependence, because the latter is sensitive to changing conditions. Trust is more difficult under asymmetric dependence because the more dependent side may be overly suspicious (Klein Woolthuis, 1999).

In all this, go-betweens can help. One function for them is to act as an arbitrator, in trilateral governance, as proposed by TCE. From a competence perspective they can also help to solve the 'revelation problem' and to control spillover. From the perspective of trust they can help and in the building and guarding of trust, and in guiding the least destructive ending of relations. Without them

the building of trust may be too slow. For these additions to roles of the 'go-between' see Nooteboom (1999).

Conclusions

This article shows that it is possible to integrate governance and competence perspectives, in a unified theory. However, this requires a substantial revision and extension of theoretical perspective. Among others, this includes a theory of knowledge and learning, a social theory of exchange that includes trust, an addition of spillover risk to hold-up risk, and a shift of focus from the transaction to the relation. The integrated framework retains instruments for governance from TCE, but de-emphasizes contracts, especially in innovation, and adds others, such as trust and additional roles for go-betweens.

Some of the causalities in the integrated framework are the same as those in TCE, but others are added. This shifts predictions. For example, in contrast with TCE the integrated framework shows that uncertainty can favour disintegration rather than integration. The theory yields some predictions that are no less sharp than in TCE. There is progress in operationalisation and testing. In particular, it has been shown empirically that trust works as a determinant of the extent of hold-up risk and as a factor in governance, thus adding even to the predictions of TCE that are empirically most successful.

I propose that the extended framework may contribute considerably to an understanding of the mixed empirical results from TCE, especially in hybrid relations. Some studies that include both perspectives, in a comparative analysis, demonstrate the increase of explanatory power compared to TCE. However, more such studies are desirable. It would also be worth-while to do a new survey of studies that have attempted this. This should be oriented at detailed analysis of structural equations rather than of reduced forms, which hide which causal relations yield successful predictions and which don't.

APPENDIX A: VARIABLES OF DEPENDENCE AND TRUST

These variables are taken from: Nooteboom et. al. (1997). They are based on 5-point Likert scales from disagree to agree, or vice versa; α indicates Cronbach's alpha. The data set was 10 customer relations for each of 10 suppliers of electrical/electronic goods

Trust variables:

HAB: Habitualization ($\alpha=0.75$)

- Because we have been doing business so long with this customer, all kinds of procedures have become self-evident
- Because we have been doing business for so long with this customer, we can understand each other well and quickly
- In our contacts with this customer we have never had the feeling of being misled

INST: Institutionalization ($\alpha=0.73$)

- In this relation, both sides are expected not to make demands that can seriously damage the interests of the other
- In this relation the strongest side is expected not to pursue its interest at all costs

HI: Habitualization/institutionalization ($\alpha=0.77$) = Habitualization + institutionalization + item:

- In this relation informal agreements have the same significance as formal contracts

The last item is kept apart from HAB and INST because it could with equal theoretical and empirical justification be added to either of them; in both cases Cronbach's alpha (α) increases with ten percentage points. The resulting variables were included in an econometric model to explain perceived relational risk, with two dimensions: the probability that the relation goes wrong, and the penalty involved if it does. These were operationalized as follows:

Variables for relational risk:

SLE: Size of loss ego ($\alpha=0.90$)

- Actually, we cannot afford a break with this customer
- If the relation with this customer breaks, it will take us much effort to fill the gap in turnover

PLE: Probability of loss ego

- The risk in this relation is sufficiently covered by contractual and non-contractual means

The trust variables competed for explanation of relational risk with TCE variables and control variables on specific investments, contracts, quality dependence, revenues as percentage of total sales, uncertainty avoidance, and firm size.

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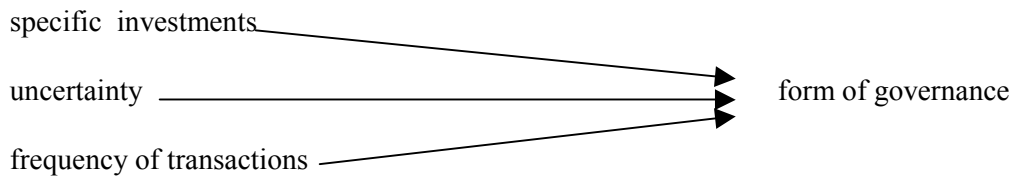
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FIGURES

. Figure 1: the reduced form of TCE



form of governance:
 full integration
 trilateral governance
 bilateral governance:
 contracts
 bilateral dependence
 hostages
 reputation
 trust is not viable (Williamson 1993)

Figure 2: structural equations of TCE

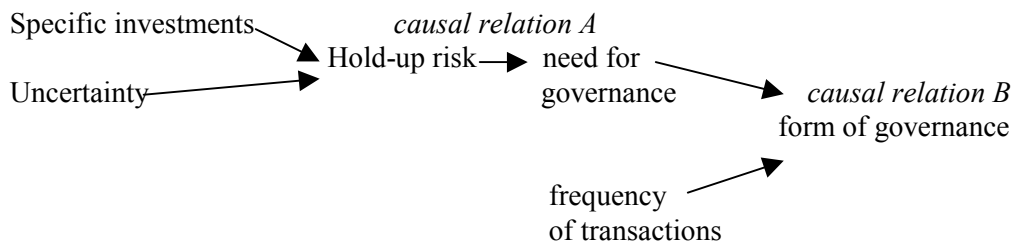
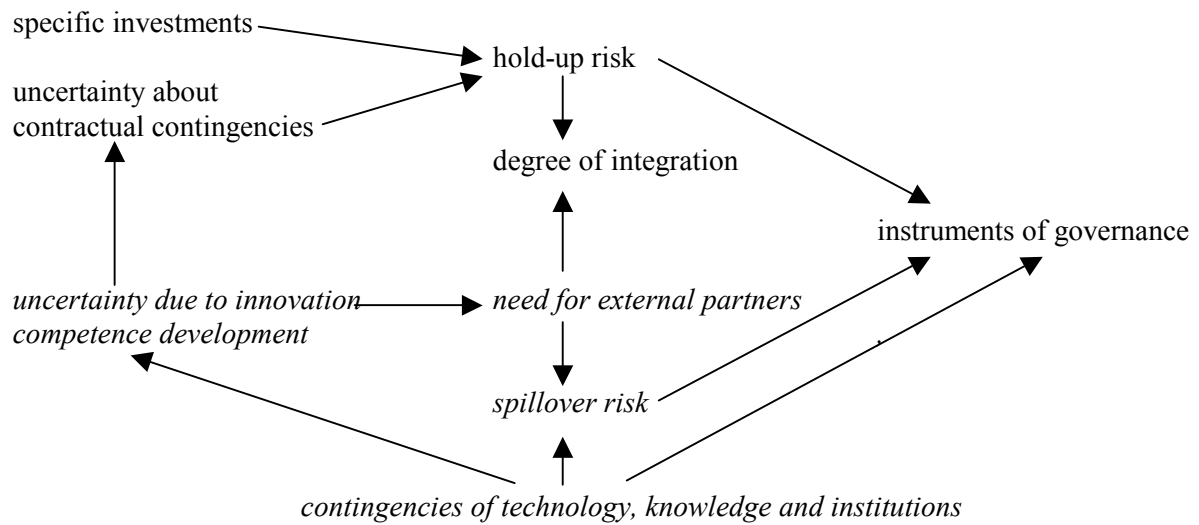


Figure 3: structural equations of a combined competence and governance perspective



instruments of governance:
 integration by MA
 alliances, with instruments:
 contracts (of limited value especially in innovation)
 bilateral dependence due to bilateral specific investments
 hostages (related to spillover risk)
 reputation
 roles of go-betweens (*beyond arbitration*)
trust

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