Interorganizational Cooperation: Towards a Synthesis of Theoretical Perspectives

Cormac Mac Fhionnlaoich, University College Dublin, Dublin

Introduction

Interorganizational cooperation represents a process in which firms value interdependence and pool resources in the interests of obtaining net benefits that each partner could not secure independently. Net benefits include shared profits, risk reduction, organizational learning, share knowledge and social integration. These cooperative arrangements may be characterized as formal or informal. Formal cooperative arrangements are characterized by formal contractual obligation, for example, an equity joint venture, whereas informal cooperative arrangements are characterized by greater flexibility and behavioral norms, for example, information exchange through a trade association. The choice of cooperative form follows from an assessment, on the part of two or more firms, of the perceived benefits associated with cooperation.

The objective of this paper is to review and synthesize a number of theories from each of the fields of economics, organizational theory and sociology, with a view to developing a set of propositions as to the form of cooperation favored by each theoretical perspective. The synthesis will incorporate a detailed examination of the informational and behavioral assumptions underlying each theory. The reason for concentrating on the assumptions is that alternative theories may represent part of a more complete theory of interorganizational choice, and convergent informational and behavioral assumptions may permit greater confidence in our predictions or choice of alternative cooperative arrangements.

Furthermore, the interorganizational context will also be examined. The interorganizational context encompasses two dimensions. Firstly, the choice of interorganizational form may vary according to the nature of organizational boundaries, vertical or horizontal. Secondly, the choice of interorganizational form may vary according to the stage of the cooperative relationship, that is, an initial choice of interorganizational form need not be absolute, whereby the cooperative arrangement may vary as a result of repeated transactions. In this paper, we view the interorganizational context as moderating the predictions of cooperative form based solely on a theoretical proposition. For example, while transactions cost theory may predict a formal interorganizational arrangement, this prediction is moderated by the fact that firms may be engaged in repeated transactions through which informal cooperation evolves.

The paper is structured as follows: The following section discusses the interorganizational context as influencing the choice of interorganizational form. Our intention is to highlight the some informational and behavioral considerations which influence the relative merits of formal and informal cooperation evolves.

in McLoughlin, Damien and C. Horan (eds.), Proceedings of The 15th Annual IMP Conference, University College, Dublin 1999
informal cooperative arrangements. Next, we review a number of theoretical perspectives from each of the fields of economics, organizational theory, and sociology, leading to the development of a series of propositions in relation to the choice of cooperative form. Following the development of propositions, we begin to synthesize the alternative theoretical perspectives. Our theory development places a strong emphasis on the link between a theory's underlying informational and behavioral assumptions, and the interorganizational context as a basis for improving the relevance of theory to managerial decision making in the area of interorganizational cooperation.

The Interorganizational Context

The value of a cooperative arrangement is likely to vary according to the interorganizational context, where the interorganizational context has two dimensions; firstly, the nature of firms' boundaries, horizontal, vertical or sectoral, and secondly, the temporal stage of the cooperative relationship. This section examines each of these dimensions and considers their influence on the choice of organizational form.

The Nature of firms' boundaries.

The first dimension incorporates firm relationships along the production chain. Resource or information exchange along or across production chains impacts the relative value and risks that each party associates with the exchange; neither party to an exchange wishes to become a hostage, being forced to reveal sensitive information which may subsequently be appropriated. Whether firms are horizontally or vertically related has an important bearing on the sensitivity of the information or resource exchange, while also influencing the degree of firm interdependence. Interdependence exists whenever one firm does not control all of the conditions necessary for obtaining a desired outcome. While interdependence can create problems of uncertainty and unpredictability for an organization, much of this uncertainty derives from the lack of coordination between the organizational units (Pfeffer and Salancik, 1978).

By developing coordinated or interdependent structures, organizations may be better positioned to reduce uncertainty. Thompson (1967) identifies three types of interdependence: pooled, sequential and reciprocal. Each type of interdependence is reflected in each of the following categories of cooperation: horizontal, vertical and sectoral.

In horizontal cooperation, firms pool similar resources. Hennart (1988) refers to this category as a scale arrangement, where the sustainability of the arrangement depends on some externality. For example, in the context of new technologies the extremely high costs of technology development, coupled with short product life cycles, is such that no one firm can independently recoup the costs associated with technological innovation. This motivates the establishment of a strategic technology alliance. Such arrangements may however be subject to a risk of appropriation where one party has a 'hidden agenda' to quickly absorb innovative capabilities from others (Hagedoorn, 1993). Thus, with regard to pooled interdependence, the cooperative agreement would need to offer some protection against a perceived risk of appropriation.
Vertically related firms combine complementary or sequential resources better suited to economies of scope rather than scale. As compared to vertical expansion, firms may find it easier to engage in horizontal expansion, if only due to their current experience at that level of the production chain. Firms are likely to have greater difficulty in engaging in vertical integration as the skills and resources necessary for vertical integration are more likely to lie outside the boundary of the firm. In this case the risks of appropriation are lower due to the high costs involved in forward or backward integration when compared to horizontal expansion. Given a lower risk of appropriation, when compared to horizontal relationships vertical cooperative arrangements may be less formal in the sense that the contractual complexity may be lower, reflecting reduced monitoring costs.

Firms that operate in different sectors, but which share a common resource may exploit business opportunities that arise due to their reciprocal dependence. For example, both airlines and car rental companies, though operating in separate industries, benefit from sharing customers through tie-in arrangements. Hennart (1988) refers to these latter categories as link arrangements where the sustainability of the arrangement is determined by the existence of a "mutual hostage" situation, where parties to the arrangement are dependent on each other to maintain the business opportunity.

From the above we recognize that the choice of cooperative form may vary between horizontal, vertical and sectoral relationships, particularly, where parties to the arrangement recognize their mutual or reciprocal interdependence, or where one or more of the parties perceives a risk of appropriation. Each of the cooperative arrangements, horizontal, vertical and sectoral, reflect increasingly higher degrees of resource asymmetry, in part due to differences in firm's histories and industry experience. Also, in each of these arrangements the shared resource is of increasingly higher value inside than outside the arrangement. Thus, the risks of appropriation decrease as we move from horizontal to vertical to sectoral arrangements.

P1a: All else being equal, we would expect to find that interorganizational cooperation is more formal among horizontally related firms.

This proposition may need to be tempered by the fact that it is easier to combine resources in a more certain environment. The lower the organizational distance between firms, the lower the informational uncertainty. Horizontally competing firms, operating in the same (stable) environment are likely to value competitive information more highly as this information includes less noise and is closer to the true state of information asymmetry. Realizing the benefits of reduced environmental uncertainty, some firms may be encouraged to build informal cooperative arrangements perhaps through the development of structural mobility barriers resulting in strategic groups. Firms within a strategic group recognize their interdependence and strive to benefit from that interdependence. Hence, an implication of the concepts of strategic groups and mobility barriers for interorganizational cooperation is that in stable environments, horizontally related firms may engage in informal cooperation. Zajac (1992) views strategic groups as a set of shared interfirm perceptions could enhance cooperation among firms in an industry.

P1b: Horizontally related firms operating within strategic groups may engage in relative more informal cooperative arrangements with other firms in the group.

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This proposition differs from the usual interpretation that environmental stability facilitates the use of formal cooperative arrangements, as organizational flexibility is less of a concern.

We also note that this line of argument also relies on managerial assumptions with regard to the behavior of each partner as it affects resource appropriation. Where management perceive a possibility of resource appropriation due to opportunistic behavior by one or more partner, they will be motivated to insist on more formal cooperative arrangements designed to reduce the risk of appropriation. On the other hand if management perceive each other as inherently trustworthy, then the need for restrictive contractual protection is reduced. It may be the case that firms within strategic groups are more trusting of each other than they are of firms outside the group. However, it is difficult to judge the trustworthiness of a partner firm's management without first developing some initial relationship in which each firm's management reveals its behavioral attributes. In order to better appreciate the behavioral dimension of interorganizational context, we need to consider a second dimension of the organizational context, the is a stages model of interorganizational cooperation.

**The stages model of interorganizational cooperation:**

The second dimension of interorganizational context incorporates a stages model of interorganizational cooperation which breaks down into three temporal and logical stages: the initial exchange, followed by a second stage in which the participants learn more about each other, and finally, a third stage in which the participants may decide to reconfigure the interorganizational arrangement (Zajac, 1992; Zajac and Olsen, 1992). This second dimension emphasizes the dynamic nature of interorganizational cooperation in which the benefits accruing to each party varies over time in accordance with changes in the relative importance of the resource or skill supplied.

It also emphasizes cooperation as involving a development process involving negotiation, commitment and execution of cooperation (Ring & Van de Ven, 1994).

The "initializing stage" involves an assessment on the part of each firm as to the desirability of exchange alternatives including markets, hierarchies or hybrid cooperative arrangements (Williamson, 1991, Powell, 1990). This assessment requires that each party assess the value and parameters of an exchange relationship both now and into the future by calculating an expected value of the exchange relationship. This valuation process may be unique to each firm, as each perceives a unique pattern of payoffs, and each has a firm specific 'shadow of the future' (Axelrod, 1984, Parkhe 1993). This stage also involves the negotiation of initial exchanges through which a firm learns about the expected future behaviors of its partner.

Zajac and Olsen (1992) refer to the second stage as the "processing stage" which encompasses the forecasted period during which the interorganizational exchange is expected to occur. This stage focuses on the behaviors of each party as well as the distribution of the benefits during multiple rounds. The development of trust is a key issue during this phase as this can have a strong influence on the continuation or reconfiguration of the cooperative form. Trust increases the likelihood of
cooperative exchange over multiple rounds, results in an extension of the exchange horizon and reduces the perceived incentives for noncooperative behavior (Axelrod, 1984).

A"reconfiguring stage" is the third stage in the development process of interorganizational strategy. This stage represents a potential redefinition of the interorganizational arrangement which may be triggered by reaching the end of the expected duration of the relationship or by a change in the partner's perceived level of the relationship's value. Reconfiguration may result in a discontinuance of the relationship or a switch to a cooperative arrangement more compatible with the partner's needs. For example, in the case of built up trust, partners may feel comfortable switching to a more informal arrangement.

P2: Greater trust among partners developed through repeated exchange results in less formal cooperative arrangements

This section was designed to establish the context in which management makes decisions regarding the choice of interorganizational form. We propose that the interorganizational context will moderate the impact of later theoretical propositions. Therefore, when we examine alternative theories of interorganizational cooperation, we will need to be sensitive to the impact of the interorganizational context on our propositions. The following section examines a number of theoretical perspectives which reflect alternative perspectives of the managerial decision making in the realm of structuring interorganizational arrangements. Following our review of the theoretical perspective, we will then reexamine the issue of integrating theoretical propositions with the realities of the organizational context. Figure 1 presents a framework, representing the interaction of organizational context and theoretical perspective in influencing interorganizational choice.

Fig 1: A Stages Model of Interorganizational Cooperation: Theoretical Perspectives and Organizational Context

Economic theories

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Transaction Cost Economics: Transaction cost economics (TCE) (Williamson, 1975; Powell 1990), considers the transaction or exchange to be the unit of analysis, where an exchange takes place at the boundary of two organizations. The thrust of the theory is one of minimizing transaction costs, which include the costs associated with the activity coordination, monitoring and enforcement of penalties for non-conforming behavior. Choice of organizational form should reflect a minimization of the relevant transaction costs. Williamson's original conceptualization of this framework built on the traditional economic assumptions of opportunism and information asymmetry. TCE also acknowledges that individuals are boundedly rational.

TCE has been used to explain alternate structures for economic transactions either through markets, hierarchies or hybrid structural forms such as joint ventures (Williamson, 1991; Powell 1990). It has mainly been used to explain vertical relationships between firms, with an emphasis on formal structures rather than adaptable flexible structures (Hennart, 1988).

P3a: TCE predicts that cooperative arrangements are likely to be of a formal nature in the initial stages of a cooperative venture.

The relevance of TCE to the dynamic process of interorganizational cooperation depends on whether or not perceived transactions costs change over time. For example, as firms learn more about each other, the uncertainties entailed in interaction decrease, hence, monitoring costs should also fall. Reduced monitoring costs may permit a switch from a formal to a less formal interfirm transactional relationship. TCE does not however permit the elimination of enforcement costs, as the theory incorporates an assumption of opportunism, such that the risk of appropriation is never fully eliminated. Zajac and Olsen (1992) criticize TCE as suffering from an overemphasis on the analysis of market structure surrounding interorganizational exchange, and a concomitant neglect of processual issues.

P3b: While cooperative arrangements may become less formal with repeated transactions, TCE does not permit high levels of informality.

TCE is sensitive to the issue of interorganizational context. Transaction costs differ between vertical and horizontal relationships. Also, repeated transactions give rise to less formal cooperative arrangements.

Agency Theory:

Agency theory relies on a principal-agent relationship in which the principal's objective is to ensure that the agent acts in the best interests of the principal. (Jensen and Meckling 1976. Eisenhardt 1989). The theory assumes that the agent is self interested and that this is reflected in the pursuit of objectives that need not be compatible with those of the principal. The challenge for the principal becomes one of monitoring and control, in order to ensure that agent works towards the achievement of the principal's goal. The unit of analysis becomes the contract between the principal and the agent.
While agency theory offers some insight into the behavioral aspects of interorganizational cooperation, it does not contribute directly to the structural analysis of cooperation. Its structural relevance depends on whether or not there exists a formal obligation on the part of the agent to act in the interest of the principal. When firms interact along a production chain, it is possible to argue that the supplier (the agent) is obliged to supply goods or services to the buyer (the principal). However, it is less clear whether there exists a formal obligation between both parties. Formal obligations may be contracted for in vertical relationships, however the interpretation of such obligations in horizontal relationships is less clear. For example, in the case of a horizontal joint venture between two firms, it is difficult to distinguish the principal from the agent. It may be the case that the joint venture, of itself, creates an obligation on the part of participating firms to focus their efforts towards the achievement of the goals of the joint venture rather than the pursuit of separate firm goals. The question then arises as too how such an obligation could be monitored or imposed as participants in a joint venture are unlikely to agree to self-administered enforcement rules.

Agency theory contributes to our interpretation of managerial and firm behavior as debated by Donaldson (1990a, 1990b) and Barney (1990). This debate sensitizes the researcher to problems associated with moral hazard, that is, self-interested behavior; adverse selection, for example, the inappropriate choice of a partner firm; and free-rider effects, where for example, parties that are not fee paying members of a cartel benefit from the policies pursued by the cartel. In essence, while agency theory with its underlying assumptions of opportunism complements the transaction cost economics perspective, it is inappropriate to perceive this theory as a separate predictor of cooperative form. We prefer not to make any specific propositions about the influence of agency theory on the choice of interorganizational form. Its inclusion in this review is justified on the basis of its impact on our characterization of individual and firm behavior.

The Resource Based View of the Firm:

The resource based view of the firm concentrates on firm resources (or inputs) rather than outputs as determinants of superior performance (Penrose, 1959; Wernerfelt, 1984). Valuable resource characteristics include rarity, immobility, inimitable and nonsubstitutibility (Barney, 1991; Peteraf, 1993). To the extent that valuable resources can be 'locked-in' (or removed from the marketplace), it becomes possible for the owners of such resources to maintain superior performance.

The resource-based view traditionally emphasizes the single firm. More fundamentally, the unit of analysis is the market for resources, where firms comprise bundles of resources, some of which are imperfectly marketable due to a failure in the market for resources (Barney, 1986). The literature has not yet applied the resource based view to the specifics of interorganizational cooperation. Its application to interorganizational arrangements would require that the combination of firms, for example, a joint venture, be treated as the unit of analysis. The resource based view offers the following insight: Combined resources generate resource characteristics that are not easily imitable, that is, when two or more firms pool their resources, this pooling may result in resource configurations that are not easily constructed by any single firm. Also, the traditional view of RBV discusses firms as possessing different historical paths and different stocks of assets (or resource
configurations) which may give rise to competitive advantage (Dierickx and Cool, 1989). Thus, one could argue that combinations of firms would possess a somewhat unique configuration of resources due to the confluence of multiple historical paths.

This unique resource configuration might permit the interorganizational arrangement to develop product or service markets that would not otherwise exist. This follows from the idea that combined resources may be configured in a manner that permits the exploitation of new product-market niches. In order to gain advantage from cooperation the cooperating firms must be capable of coordinating the added organizational complexity inherent in interorganizational arrangements.

P4a: The resource based view favors interorganizational cooperation that results in a unique resource configuration.

Due to the incompleteness of factor markets, it may prove difficult for any two firms to trade their resources at market prices. Given imperfections in the market for resources, it would seem that cooperating firms would need to engage in much negotiation in order to arrive at a fair distribution of benefits. Each firm finds it difficult to place a value on the resources of other firms, particularly where these resources are intangible. Where a valuation problem exists it is likely to be the case that flexible cooperative arrangements are preferred as these can be adapted in line with changes in the value of resource contributions.

P4b: The RBV argues in favor of relatively informal cooperative arrangements which can better take account of the value of difficult to trade resources.

The RBV also argues that benefits derived from organizational process may be more valuable than those associated with the physical attributes of assets in that process is much more difficult to imitate (Mahoney and Pandian 1992). In this context, interorganizational processes, of which interorganizational structure is one example, should be relatively informal due to the fact that formal cooperative arrangements may be more imitable and therefore less valuable. Formal cooperative arrangements are more permeable than informal arrangements.

P4c: Cooperative arrangements based on superior strategic process will be relatively informal.

Our discussion of the RBV assumes rational economic actors. The behavioral assumptions of the RBV generally relate to those of other economic perspectives, however these are not clearly stated in the literature (Zajac, 1992). The RBV treats strategic process as a valuable resource. Strategic process however is in part a reflection of strategic behavior, which is difficult to measure. Consideration of opportunistic behavior may have important implications for the willingness of firms to trade assets that may be subject to a risk of appropriation. Therefore, Propositions 4b and 4c may be difficult to justify in an environment characterized by high degrees of opportunism.

On balance economic theories recommend formal interorganizational arrangements. The degree of formality may be lessened as a result of repeated transactions which permit partners to become familiar with each other's behavioral attributes. Failure in the market for firm resources favors
informal cooperative forms.

Organizational Theories

Organizational Learning: Learning refers to the development of insights and associations between past actions, the effectiveness of those actions and future actions (Fiol and Lyles, 1985). Underlying behavioral assumptions include bounded rationality and satisficing behavior rather than pure profit maximization (Simon 1957). Learning impacts behavior of an entity if, through its processing of information, the range of its potential behaviors is changed (Huber, 1991).

Organizational learning also recognizes the interdependence of firms and the existence of asymmetric information or resources. Nelson and Winter (1982) consider the firm to be a bunch of routines, capable of learning, but with imperfect memories. The specific routines that characterize a firm at a point in time may not be those routines that are required for success in a changing environment. In this context, firms must acquire the prerequisite routines through some other mechanism, such as an acquisition or joint venture. One advantage of a joint venture is that it permits a firm to retain its capability to organize a particular activity while benefitting from the superior production techniques of a partner. Joint ventures also represent an organizational mechanism suited to the transfer of tacit knowledge, as in the case of technology partnerships (Leece, 1977).

The process of interorganizational cooperation: moving from the initiation, processing, and possible reconfiguration of a cooperation arrangement is an important element of this theory. This process is implicitly driven by the learning rate of organizations and their relative stock of knowledge and resources. The learning rate has implications for the degree to which one firm appropriates resources and skills from a partner firm. If firms do not continue to improve their resource base, independently of the cooperative arrangement, then eventually one firm will outgrow the arrangement, at which time it will be more efficient to interact through other forms of organizations, such as markets or hierarchies. Therefore, while organizational learning offers a strong motivating factor for the initiation of cooperative arrangement, it is also the case that over time it predicts the reconfiguration of such arrangements, particularly where one firm outlearns its partners.

P5a Where risks of appropriation is high, due to differential learning rates, organizational learning predicts relatively formal forms of cooperation.

P5b Where firms have similar learning capabilities, organizational learning predicts relatively informal forms of cooperation.

Organizational learning is particularly sensitive to the issue of interorganizational context. It implicitly depends on repeated interaction of firms, as learning is unlikely to take place following a single transaction.

Information Processing and Signalling:

in McLoughlin, Damien. and C. Horan (eds.), Proceedings of The 15th Annual IMP Conference, University College, Dublin 1999
The information processing model of organizations (Galbraith 1973) specifies that the information processing needs of an organization should be matched with its information processing capabilities. Information processing needs arise from the necessity of managing uncertainties associated with the environment, competitor behavior or task uncertainty (Bensaou and Venkatraman, 1992). The efficient processing of information is used as a criterion for choosing among various organizational forms. The information processing capabilities of organizations can be improved through the sharing of information. This permits organizations to alleviate problems associated with the bounded rationality, simply recognizing that two individuals (or firms) are better placed to engage in problem solving than a single individual (or firm).

The essential point here is that cooperative arrangements may lead to greater efficiencies in achieving a match between the information processing needs of organizations and their information processing capabilities. While no one firm has the wherewithal of dealing with environmental and task uncertainty, the application of combined resources reduces these uncertainties to more manageable proportions. The willingness of firms to share information or resources however is influenced by whether they view each other as opportunists or trustworthy, that is, whether or not the revelation of strategically sensitive information to competing firms might result in greater risk of appropriation. Thus predicted cooperative forms for horizontal information sharing may differ from those of vertical information sharing.

P6a: Under conditions of high risks of appropriation, information processing predicts relatively formal cooperative forms

P6b: Under conditions of low risks of appropriation, information processing predicts relatively informal cooperative forms.

The concept of competitive market signalling is closely related to the idea of sharing information in order to reduce uncertainty. Market signalling is a process by which firms signal their strategic intentions to one another. Signalling mechanisms may include the building of capacity as a means of discouraging entry into a market by competitors, or price cutting as a means of signalling a reputation as an aggressive competitor. Potential benefits from signalling to competitors include preemption and the development of competitive norms of conduct (Heil and Robertson, 1988). These competitive norms of conduct guide firm behavior and result in a reduction in both informational and behavioral uncertainty. Signals emanating from firms with a large market dominance and the ability to enforce sanctions are more likely to result in a cooperative response (Scherer, 1980).

A firm's signalling reputation is also important, in that those firms targeted by the signaler must perceive the signal as being credible. A firm's signalling reputation is based on the consistency of its actions over time (Weigelt and Camerer, 1988). Consistent behavior improves the credibility of the signal resulting in a good signalling reputation which is advantageous in establishing competitive norms compatible with the signal being sent.
Information sharing is likely to be greater among firms along a production chain rather than at the same point in a production chain. This is so since the sensitivity of information among vertically related firms is less than the sensitivity of information among horizontally related firms. Vertically related firms would have to engage in costly forward or backward integration in order to exploit competitive market information. Horizontally related firms on the other hand are positioned to exploit competitive market information as they are already participating in the market in which the information is most useful. Horizontally related firms are more likely to engage in higher levels of competitive market signalling in the interests of developing norms for competitive conduct. Also, since these firms are operating in the same environment they are more likely to interpret signals in a like fashion. Information sharing and competitive market signalling are compatible with relatively informal cooperative mechanisms, including tacit collusion with regard to pricing.

P7a Signalling theory predicts relatively informal cooperative forms.

P7b Signalling is likely to be more prevalent among horizontally related firms.

Organizational theories permit both formal and informal forms of cooperation. Both organizational learning and signalling emphasize the need to appreciate the behavioral attributes of one's partner. Knowledge about a partner's behavioral attributes can only be obtained through repeated interaction, thence, the stage of the interorganizational relationship has a moderating impact on the choice of interorganizational form.

Sociological Theories

Network Theory: Networks involve intricate and durable relations which are based on trust and reciprocal patterns of communication and exchange (Grabher, 1993). The condition of reciprocity gives rise to actions that are contingent on rewarding actions from others and that cease when these expected reactions are not forthcoming (Blau 1964). Network theory recognizes the embeddedness of economic action in a social context, whereby individuals (or firms) transact in the pursuit of social as well as economic benefits (Granovetter, 1985). Embeddedness also refers to the fact that economic action and outcomes, like all social action and outcomes, are affected by actors' dyadic relations together with the the structure of the overall network of relations. The risk of appropriation is greatly reduced in networks, in part due to the fact that members of the network obtain social as well as economic rewards through participation in the network. If one firm were to appropriate resources from another, it would likely be subject to isolation by all firms in the network. For example, in networks of both horizontally and vertically related firms, then there exist a greater pressure to conform, since a free rider would be penalized, not simply by competing firms but also by its suppliers and customers who are linked to other firms in the network. The embeddedness approach also avoids 'temporal reductionism' which results from a discrete view of transactions (Macneil 1974).

Implicit in the network arrangement is the crucial condition that firms grow to trust each other. While firms have different information or complementary resources, the exchange of these resources in an environment characterized by trust reduces problems that are more generally associated with
opportunism. Networks also incorporate the idea of loose coupling among organizations, wherein
the identity, uniqueness and separateness of elements is preserved, while the system can potentially
retain a greater number of solutions than would be the case with a tightly coupled system (Weick
1976).

P8: The network perspective strongly favors informal loosely coupled cooperative
arrangements.

From the above review we see that the network approach to interorganization cooperation is very
sensitive to the interorganizational context, particularly with regard to the development of trust
following from repeated interaction.

Institutional Theory:

Institutional theory differs from other perspectives in that it directs its attention to neither cost nor
uncertainty reduction, but to the collaborator's pursuit of external legitimacy (Sharifman, Gray and
Yin, 1991). Some aspects of an organization's activities may benefit from legitimate cooperation,
for example, many semi-conductor companies cooperate along the dimension of technology, while
simultaneously competing aggressively with regard to price. The nature of cooperative behavior
among firms, comes in part from the recognition by society of the benefits associated with
technology consortia. However, society may not legitimize cooperation along dimensions of price
or service.

Institutional theorists argue that organizations engage in mimetic behavior and develop a collective
rationality in dealing with environmental uncertainty. It may also be the case that some forms of
cooperation such as joint venture activity take on a form of band-wagon behavior (Dimaggio and
Powell, 1983). Firms are predicted to behave in a similar fashion, thereby reducing the uncertainty
associated with competitors' behaviors. In this context, the informational context will have a
relatively greater impact on the choice of organizational form. The desire among large numbers of
organizations to share information results in relatively informal forms of cooperation such as cartels,
industry or professional associations.

P9: Institutional theory predicts relatively informal forms of cooperation based on norms of
behavior and legitimacy

We note that Institutional theory is more applicable in longer time period in which
interorganizational cooperation occurs or evolves as a response to societal norms and firms' search
for legitimacy.

Resource Dependency Theory:

Resource dependency theory (Pfeffer and Salancik, 1978) places a strong emphasis on the
interdependence of firms. It also highlights the role of the interorganizational context, in that the
structure or behavior of an organization cannot be understood without understanding the context in
which it operates. No organization is self-sufficient, all must engage in exchange which creates dependencies between organizations (Scott, 1992). Resource dependency theory emphasizes the management of demands of interest groups upon which the organization is dependent for resources and support. Where more than one organization require similar resources they are likely to take a collective approach to the management of that resource. Through coordinated action firms attempt to encapsulate competition within narrower, more profitable limits, and negotiate more supportive institutional environments (Pfeffer and Salancik, 1978).

The idea of organizations as coalitions that alter their purposes and domains to accommodate changing interests (Cyert and March 1963) is also important to this perspective. Establishing a coalition large enough to ensure survival is an organization's most critical activity (March and Simon 1958). Such coalitions can be established through the development of cooperative arrangements among firms that are dependent on each other for resources. The demand for resources changes over time, which in turn affects the power distribution among organizations engaged in exchange, granting greater power to those organizations which supply the critical resource. Where power distribution presents a particular problem, then resource dependency would predict formal forms of cooperation, structured to protect the weaker party. On the other hand, if power shifts continuously, then an informal interorganizational structure is preferred as this is more flexible and adaptable to the organizational context.

P10: Resource dependency theory favors flexible informal cooperative forms which permit firms to respond to shifts in the distribution of power among participants.

The ideas underlying collective strategies (Astley and Fombrun, 1983) are closely related to resource dependency theory. Where firms are faced with similar levels of economic and technological change, they are likely to develop similar strategies in dealing with environmental uncertainty. A major advantage of a collective strategy is that it establishes linkages and communication channels, such as trade associations, through which information about other interdependent organizations can be obtained. Trade associations help stabilize rivalry by narrowing the range of uncertainties that managers feel about competitor's actions.

On balance these sociological theories recommend informal forms of cooperation in an environment characterized by trust and legitimacy.

Towards a synthesis

Our interest in integrating alternative theories as they relate to interorganizational cooperation is prompted by a perceived shortcoming of organizational research, that is, much organizational research tends to stick closely to one overarching paradigm, be it economic, sociological or organizational. In this paper, we have demonstrated that distinct theoretical perspectives give rise to different and sometimes conflicting propositions. Thus, based on the above set of propositions, we are likely to arrive at different and sometimes conflicting predictions as to the appropriateness of a particular interorganizational form. Conflicting predictions occur as a matter of course.
depending on whether one chooses to emphasize the economic, organizational or sociological perspectives and whether or not we take account of the interorganizational context.\(^1\)

Inconsistent propositions are difficult to accept and reconcile. However, we must look to integrate the above theoretical perspectives in the interests of arriving at a set of predictions that lie closer to the actual decision environment faced by managers. The managerial consequence of inconsistent theories is that for every manager the strategy or decision making process must start with a fundamental strategic choice: which theoretical view of human activity and environment fits most closely with his or her own view of the world, that is, his or her personal 'theory of action'? (Argyris, 1977; Whittington, 1993). In answering this question management is implicitly making some judgement as to the nature of uncertainty and human behavior. Different worldviews emphasize different forces and management must decide which forces are critical to a particular situation and select appropriate theories. Our discussion of the interorganizational context is helpful here in that management can make some judgement as to the degree of informational asymmetry and opportunism that best characterizes the context of their decision.

In support of the idea of theory integration in strategy research, Ansoff (1987) recommends that the scientific optic should be multi-disciplinary including at a minimum, interactions and influences of political, sociological, psychological, and cognitive-logical rationalities. He also recommends that the problem space should include the interaction of strategic behavior and with the configuration and dynamics of the organization. Consideration of the interorganizational context together with alternative theoretical perspectives is consistent with Ansoff's recommendations. Whetten (1989) also acknowledges that a legitimate added value to theory development includes theory integration which commonly involves borrowing a perspective from other fields, and encouraging altering gestalts in ways that challenge the underlying rationale supporting accepted theories.

**Informational and behavioral assumptions in organizational research:**

Dubin (1978) refers to two paradoxes in theory development: the 'precision paradox' and the 'power paradox'. The precision paradox permits accurate prediction of social behavior from only incomplete knowledge of a system's functioning. The power paradox refers to the creation of models of social behavior that are powerful in contributing to understanding, without providing at the same time precision in prediction. This paradox may be a result of the limited domain and simplification

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\(^1\)Problems associated with conflicting theories are by no means unique to the examination of interorganizational arrangements. The same problem permeates the field of strategy where organizational economists (Porter, 1980), evolutionists (Hannan & Freeman, 1988), processualists (Cyert & March, 1963; Mintzberg, 1987) and systemic theorists (Granovetter, 1985) present different answers to the question: Does strategy matter? Classicists see strategy as a rational process of long-term planning. Evolutionists regard the future as far too volatile and unpredictable to plan for. Processualists doubt the value of long term planning, seeing strategy as an emergent process of learning and adaptation, while systemic theorists emphasize the societal sensitivity of the strategy making process.
of many theories. Theory development as a system for comprehending a limited realm of knowledge is necessarily bounded, and hence excludes realms of the phenomena. Assumptions play an important role in setting the boundaries of a theory. Therefore, an important aspect of integrating theoretical perspectives is that of examining conflicting and/or compatible underlying assumptions. This proves necessary since some theories are embedded in opposing paradigms. For example, Barney (1990) suggests that even though there are differences in assumptions between organizational economics and traditional management theory, these differences are not of the sort that would prevent theoretical intercourse and integration between the two perspectives.

Traditional economic theories of the firm reflect a deductive and positivist approach to research while much of the research in strategic management on the other hand is inductive and normative in nature (Seth & Thomas, 1994). Economic theories tend to be static while organizational theories such as organizational learning are more dynamic in permitting changes in organizational structure to match changes in organizational capabilities and environmental shifts. Furthermore economic theories leave little room for environmental enactment, permitting repeated exchange in a stable environment, whereas sociological theories, such as institutional theory (Dimaggio and Powell, 1983) and resource dependency theory (Pfeffer and Salancik, 1978) recognize the importance of firms influencing their environments through collective action.

The informational assumptions inherent in economic research consider information asymmetry to be an impediment or market imperfection. Agency theory for example, addresses the adverse effects of information asymmetry through the use of contractual agreements (Jensen & Meckling, 1976). The contractual solution is imperfect or second best in that some resources are wasted in the process of negotiation. Resource dependency theory (Pfeffer and Salancik, 1978) on the other hand perceives informational asymmetries as natural and beneficial, in that by combining information from different sources, organizations are better placed to succeed in their environment.

Economic theories for the most part adopt a rational and reductionist view of firm behavior, while organizational research adopts a boundedly rational, and somewhat holistic perspective (Cyert and March, 1963). The account of human motivation and behavior offered by organizational economics is narrow relative to motivation theory in organizational behavior (Donaldson, 1990a). The behavioral assumptions underlying economic theory are based on opportunism and the need to protect against such behavior through formal contractual arrangements (Williamson, 1975). Barney (1990) argues that the assumption of opportunism is not essential to organizational economics and refers to Axelrod’s (1984) "tit for tat" strategy as being the most successful strategy in a repeated prisoner dilemma game. If opportunism was prevalent, then the "tit-for-tat" strategy would not be successful. Economic theories fail to recognize the social embeddedness of economic action (Granovettor, 1985). This is a particularly relevant shortcoming, since firms may enter cooperative arrangements for reasons other than measurable economic profit. Relevant benefits, which may prove difficult to measure, include organizational learning and social interaction.

The above discussion of informational and behavioral assumptions is not intended to suggest that organizational or sociological perspectives can fully respond to the restrictive assumptions of
economic theories. What is important to realize however, is that the decision to engage in
interorganizational cooperation should be examined from a holistic perspective, which considers
economic, organizational and social implications of cooperation. Organizational specific issues,
such the capacity of an organization to exploit opportunities for organizational learning have an
important bearing on the company's decision to establish or maintain interorganizational
arrangements. Similarly, the sociological or cultural context is important. A culture for trusting
behavior, the capacity of organizations to deal with more complex information, and the desire to
influence the company's environment together create a situation in which interorganizational
cooperation is likely to be more prevalent (Alter and Hage, 1993).

The above discussions presents a motivation to reexamine our theories and propositions in an
attempt to develop some common ground which management might prove useful to managers.
After all, a managerial 'theory of action' (Argyris, 1977) is neither a rational economic model, nor
a trusting sociological model. As discussed above, managers choose among world views that they
perceive as fitting with the interorganizational context. Therefore, to the extent that alternative
theories suggest similar proposition, this information may be useful to managers who do not wish
to constrain their decision making to a single narrow perspective.

Concentrating on informational and behavioral characteristics also ties in with Philips' (1960)
definition of interfirm organizations as involving the exchange of information, resources and other
commitments together with some motivation to develop coordination structures encompassing
interorganizational behavior.

Revisiting the theories and propositions

This section offers a brief review of the propositions developed above (See Table 2, attached), in
light of the recognition that our interpretation of the informational and behavioral assumptions may
have important implications for the relevance of our predictions. Figure 2 illustrates a 2X2 matrix
in which informational asymmetry and opportunism are used as a basis for categorizing theories and
their predictions as to interorganizational form. Information asymmetry and opportunism are both
treated as a matter of degree. Treating opportunism as a matter of degree suggests that neither
extreme opportunism or absolute trust are a fair reflection on the realities of interorganizational
relationships.

in McLoughlin, Damien. and C. Horan (eds.), Proceedings of The 15th Annual IMP Conference, University
College, Dublin 1999
Based on our preliminary categorization, we note that economic theories tend to cluster in the upper half, reflecting relatively high levels of information asymmetry and high levels of opportunism. Two of organizational theories, information processing and signaling are clustered in the bottom right hand side, reflecting relatively low levels of informational asymmetry and low levels of opportunism.

With regard to the sociological theories, network theory and institutional theory are clustered in the bottom right hand side reflecting low levels of informational asymmetry coupled with low levels of opportunism. Resource dependency theory which recognizes a shifting of power among firms due to changes in the importance of their resource contribution, clusters along the dimension of low levels of opportunism, but may involve either high or low levels of informational asymmetry.

Based on the information in Figure 2, we suggest that if managers engage in an initial assessment of the important informational and behavioral assumptions which characterize their decision environment, then they will be better placed to appreciate the relevance of alternative worldviews to their choice of interorganizational arrangement. For example, if the decision environment is best characterized by low information asymmetry and low levels of opportunism, then management can find confirmation of the appropriate choice of interorganizational arrangement from alternative theories. On the other hand, if the decision environment is best characterized by high levels of information asymmetry and high levels of opportunism, then we suggest that economic theories of interorganizational cooperation are most useful to this decision context.

**Conclusion**

This paper presents a comprehensive, and perhaps, somewhat ambitious review integration of
alternative theories as they relate to the choice of interorganizational form. It also sensitizes decision makers to the realities of the decision making environment, as reflected in the interorganizational context. An important contribution of this paper lies in the attempt to engage in theory building in strategy research by categorizing theories according to their informational and behavioral assumptions. These assumptions are perhaps more easily interpretable by managers, than the complexity of the original theories, thereby increasing the relevance of this research to the management. We recommend that management decision making in this area should start with an assessment of the important informational and behavioral assumptions underlying management's perceptions of their decision environment. Effective use of this framework may lead to convergent predictions as to the choice of organizational form, where convergence suggests greater confidence in the choice of organizational form.

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