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Governing Exchange in Strategic Alliances: The Dynamics of Interfirm Trust

Henry Adobor

A Thesis

in

The Department of

Management

**Presented in Partial Fulfilment of the Requirements
for the Degree of Doctor of Philosophy at
Concordia University
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ABSTRACT

Governing Exchange in Strategic Alliances: The Dynamics of Interfirm Trust

Henry Adobor, Ph. D.
Concordia University, 1999

This thesis focuses on the dynamics of trust in strategic alliances. Trust as a form of qualitative governance is generally seen as a mother lode for successful partnering. Yet our understanding of this core concept lags behind our appreciation of its importance. Worse yet, a certain amount of skepticism exists on the idea of governance by trust-based regimes. This thesis aims at filling some of that lacunae. A proposed model of inter-firm trust generating structures and behaviors is presented. The model includes four important and related factors that are ordered into (1) individual partner-specific factors (2) the structure of the specific relationship (3) dyadic interactional sequence behaviors and a (4) specification of exogenous context variables. Using a sample of one hundred and ninety one respondents (191) from a mail survey and ten (10) case studies, a number of trust-related hypotheses were tested. Among others, the results offer an interesting portrait of strategic behavior on the part of actors even in trust-based regimes. For example, whether partner's intended to use alliances again in the future or not affected their trust behavior in a current alliance. Also, trust was positively associated with relations perceived as long term, as opposed to those seen as short term ones. Another

important finding in the study is that when viewed as a form of sense making, trust building in alliances may be a sort of self-fulfilling prophecy. To some extent, the interpretation of behaviors and the way partners reacted to each other was dependent on the initial categorizations they formed about each other. As predicted, turnover in role persons negatively affected trust building, but contrary to expectations, direct market competition between collaborating partners did not negatively relate to trust, thus suggesting that direct competition between partnering firms need not necessarily be a death leap. By tapping at trust from both a sociological, strategic and economic perspective, the present research avoided a premature elevation of one set of explanations to the top of the theoretical pyramid. The implications of the study for alliance research, including specific areas for future research and alliance management are offered.

DEDICATION

To my brother Louis Yao Adobor and my grandmother Yaya Cecilia Agblesi.

No one mourns for the setting
sun, for it will rise again

Source Unknown

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PART ONE

CONCEPTUAL & THEORETICAL OVERVIEW

CHAPTER ONE

THEORETICAL AND CONCEPTUAL OVERVIEW

Chapter Summary

This chapter presents both the theoretical and conceptual overview of the thesis. It defines the study's key objectives. It also provides the rationale, importance, theory of action and research strategy that guides the study. The concluding section presents an overview of the study.

INTRODUCTION

One of the most pervasive phenomena in contemporary business is the proliferation of new modes of organizational exchange among firms. Often categorized under the umbrella term strategic alliances, even once isolated and secretive firms are working together to achieve common economic objectives. What is known is that alliances are difficult to manage and research effort on alliances is on-going. In spite of recent research progress, our understanding of the complex management problems associated with strategic alliances may just be beginning.

Indeed, the management of strategic alliances continues to pose challenges to both research and practice. To date, the overall record on the performance of most alliances remains mediocre (Harrigan, 1988). Understandably, there is a certain amount of preoccupation with how to achieve efficient coordination and control in these exchange relationships.

This thesis focuses on how coordination and efficiency can be achieved

qualitatively in an exchange relationship. Qualitative coordination and control envisages a regime in which efficiency and coordination in exchange is based on the embeddedness of transactions in particular social settings. More specifically, the study focuses on the dynamics of trust in strategic alliances by tapping at the conditions that give rise to and sustain trust in economic exchange. The general domain of the study therefore deals with the governance of exchange. The term governance is used in a restricted sense to mean how exchange relations are kept oriented toward the purposes for which they were conceived (Boisot, 1994). This as opposed to common usage in such contexts as corporate governance where the term is more consistent with owner versus top-management-as-agent relations.

Previous and current preoccupation with this and similar issues has given rise to two, often competing, general streams of research. One focuses on the idea that the most efficient way to achieve efficiency in terms of coordination and control in exchange is by reliance on formal and legal approaches in which contracts and the Hammurabian maxims of "qui pro quo" and "tit-for-tat," play an important role. Such views are generally consistent with rational actor models with theoretical anchors in transaction cost economics and game theory (Williamson, 1975; Axelrod, 1984).

The other perspective is that exchange relations may best be governed by reliance on informal, qualitative mechanisms to achieve control and coordination. Qualitative control and coordination can be conceptualized as "soft governance," to differentiate it from the first, more formal, "quantitative one." While the later rests on the adequacy of contracts, strategic and self-interest behavior as well as the canons

of positive law as an incentive to ensure acceptable behavior on the part of partners in an exchange, the former is dependent on social control and reflexive self-monitoring.

At an interfirm level, trust as a form of soft governance can govern an exchange because among other things, partners develop norms of exchange or grow to like each other and that may be motivation enough to refrain from opportunistic behavior. More importantly, there are consequences for opportunism. Opportunistic behavior can damage a firm's reputation among its peers, lead to ostracism and prevent trust violators from getting repeat alliances (Ben-Porath, 1980). Thus, social control is the generative mechanism through which the later category of consequences work. Social control has been defined in terms of "self-regulation with a moral dimension and as a feedback process that is jointly determined by and is diffused across multiple participants" (Leifer & White 1986 , cited in Larson, 1992). A similar logic is expressed at an interpersonal level in Triandis's (1980) theory of interpersonal behavior. A major statement of Triandis's model is that social norms, affect and perceived consequences influence behavioral intentions which in turn influence behavior.

Admittedly, pure forms of each mode of governance are best seen as ideals or reference points, and pluralist forms most closely reflect reality (Bradach & Eccles, 1988). In general, both approaches have a common aim of explaining how exchange relations are kept oriented toward the purposes for which they were conceived. The tools each apply, however, are different. In a general sense, such issues deal with the governance of exchange. The present research is not a test of

the two competing perspectives. Instead, it is focused specifically on issues related to coordination under "soft governance" regimes. Within this perspective, trust emerges as the mother lode.

Indeed, there is some universal recognition of the vital role of trust in the burgeoning inter-organizational literature. The choice to focus on trust and qualitative, as opposed to formal and quantitative coordination in the present study is motivated, in part, by the stream of research that suggests that in relational exchanges of the type common in inter-firm cooperation, trust seems very important.

The role of trust in all forms of inter-firm cooperation is recognized (Harrigan, 1988; Buckley & Casson, 1988; Ring & Van de Ven, 1994). Although a wealth of knowledge has accumulated on the dynamics of inter-firm collaboration, there is the recognition that our understanding of fundamental issues, including the dynamics of core concepts such as trust and forbearance remains rudimentary (Parkhe, 1993). Worse yet, some researchers have expressed a certain amount of skepticism about the role of trust in economic settings (Arrow, 1974; Williamson, 1993). While recognizing that this skepticism may be real and research needs to address it, the present research accepts and builds on the widely-shared view on the possibilities of creating trust in economic relations.

Following Perrow (1992: 460), a primary contention of this study is that trust is "generated by structures or contexts, these can be deliberately created, creating trust even if trust itself cannot be deliberately created." One might add, parenthetically, that pre-existing structures or contexts may provide some of the key

social infrastructures upon which trust can be built.

A Definition

Defining the concept of interfirm trust (simply referred to as trust subsequently) is important for subsequent theory development especially since the concept is widely used in different contexts. Osigweh (1989: 581) notes that every organizational science concept need not be defined, but that "those defined should have definitions sufficiently precise to enable them to "travel" in the light of the numerous variables that characterize the organizational field." *Concept traveling* in this sense means that the concept is precise enough to allow researchers to define it in the same way, and to test it in a wide range of situations." Specifying what interfirm trust is not and referencing the usage of the concept in other settings may go some way in providing the desired conceptual clarity and consistency and so make our definition amenable to "traveling" so to say. Several definitions of trust exist. For present research, a more formal definition is proposed.

"Trust is the reliance by one firm or its agents upon the voluntarily accepted duty on the part of another firm and its agents to recognize and protect the rights and interests of both parties engaged in a joint endeavor or economic exchange."
(based on Hosmer, 1995).

It is important to note that trust in economic exchange has both social, psychological and strategic components (Parkhe, 1993). Indeed, current theoretical lenses used to study interfirm trust seem to reflect most of these dimensions. Both social exchange and economic sociology based explanations touch on the social component of interfirm trust (e.g. Granovetter, 1992). Game-theoretic models focus on the economic and strategic components of trust. Deutsch's (1953) much

referenced study on the role of expectations in trust building touches on the psychological dimension.

Although trust is largely a belief, it is assumed that such a belief will translate into behavioral intention (Moorman, Zaltman & Deshpande, 1992). The link between intentions and behavior is important. For example, a partner who has an expectation that the other partner will behave in a mutually acceptable manner must be prepared to act on this belief. Thus, as Ring & Van de Ven (1992) observe, a partner anticipating the need for transaction-specific assets at time (t_{n+1}) considers the other partner as sources of those assets at time (t_n) under trust based regimes.

For greater conceptual clarity, important clarifications of what trust is not are worth mentioning. This is especially vital as the focus is on trust in business settings as opposed to trust at a personal level (interpersonal trust). Although such conceptual elaboration may appear pedestrian on the surface, it is, in reality, a central aspect of building a theory of trust in economic exchange between actors who are invariably either current or potential competitors. The fact is while interpersonal trust is ultimately the basis for interfirm trust, interfirm trust is not the same as interpersonal trust. In essence, interfirm trust is considered as a phenomenon *sui generis*. Thus although interfirm trust remains relations between agents of the firms, there is both theoretical and empirical validation of the notion of interfirm trust (e.g. Husted, 1989; Macaulay, 1963; Arrow, 1975, Dodgson, 1993). Looking at what interfirm trust is not will further illuminate this distinction.

First, contrary to some suggestions (e.g. Barber, 1983), trust should not necessarily mean putting the interest of the other party ahead of yours. That would

be altruism. McKean (1975) makes a clear distinction between trust and altruism. Trust relates to the belief that a party will adhere to relatively specific written, oral or tacitly understood agreements, while altruism implies a concern for others without reference to any agreement governing specific behavior. It is noted that certain definitions of altruism closely approximate the definition of trust. For example, Nagel (1970: 79) defines altruism not in terms of abject self-sacrifice, but merely as a willingness to act in consideration of the interest of the other party, what he calls rational altruism. Although probably rare, altruistic behavior may occur in interfirm relations. At least at an organizational level, it is known that altruistic behavior occurs where one seeks benefits for another person with whom one identifies closely (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983). This logic may be extended to inter-organizational relations. Incidentally, other researchers have noted the difference between the concept of trust between firms and everyday usage of the term trust. Zaleznick (1989: 230) suggests the concept of "amiticia," taken from politics and political relations more closely approximates the concept of interfirm trust. He notes that "unlike the bond of trust, "amiticia" is not open-ended or unconditional."

Second, trust is not the same thing as cooperation. In other words, given the right incentives or conditions, there can be cooperation without trust. Hence, contrary to some views (e.g. Williams, 1988) trust is not a *sine qua non* for cooperation. In what is the clearest distinction so far between trust and cooperation, Mayer, Davis & Schoorman (1995: 713) write: "You can cooperate with someone you don't really trust. If there are external control mechanisms that will punish the

trustee for deceitful behavior, there can be cooperation without trust." This distinction is important in view of the fact that both terms, trust and cooperation, are often used interchangeably. It is, however, important that the outcome is not conflated with the process.

Third, the opposite of trust is not distrust (Luhmann, 1979; Zucker, 1986). Distrust arises when it is determined that the other party will behave in an unacceptable manner throughout the history of the exchange (Zucker, 1986). Indeed, Luhmann (1979) considers distrust as a functional equivalent of trust. Thus, a person who does not trust must turn to some functional equivalent tool with which to reduce the complexity of a situation.

For greater clarity, the usage of the concept in other contexts is briefly referenced. In social psychology, trust is essentially perceived as an interpersonal thing (Lewis & Weigert, 1985). Trust is sociological when people have trust in social and political institutions (Barber, 1983). Trust has also been widely discussed in intra-organizational settings (Cook & Wall, 1980; McAllister, 1994).

Trust has some characteristics worth noting. First trust may be hard to find since it can emerge very slowly (Larson, 1992; Lorenz, 1988). Second trust is fragile. In fact Hirschman (1984) describes trust as a commodity that decays without use. Slovic (1993) emphasizes the fragility of trust, saying that in some cases, once trust is betrayed, it may be very difficult to build it again. Finally trust emerges in the presence of shared norms and meanings. Thus, in the absence of pre-existing shared norms, partners have to create these norms.

The need for trust arises because of uncertainty about another's behavior

and the fact that our knowledge of others is always limited. In strategic alliances in particular, this uncertainty arises precisely because partners are engaged in *reciprocal exchange*. This as opposed to a *negotiated exchange* (Emerson, 1981). In reciprocal exchange, actors initiate exchange without knowing whether, when, or to what extent the other will reciprocate. In negotiated exchange to the contrary, actors engage in explicit bargaining to determine the terms of the exchange, thus both parties know what they get in exchange before they agree to an exchange (Molm, Quist & Wiseley, 1994).

Two key observations about the nature of trust concludes this part of the introduction. These observations then set up the primary question to be addressed in the present study. First it is noted that there is some universal acceptance of the economic and strategic role of trust (Harrigan, 1988; Buckley & Casson, 1988; Ring & Van de Ven, 1994; Parkhe, 1993a). Second, and relatedly, it is accepted that trust may not be easily found (Arrow, 1974), but most importantly, trust is fragile (Slovic, 1993; Lorenz, 1988; Sako, 1992). If trust is important but difficult to find, and fleeting once found, then the search for the conditions that engender and sustain it must be a valid and important theoretical, empirical and practical enterprise. This is the task to which the present study concerns itself. At a general level therefore, this research poses and answers this question:

Under what conditions can trust be created and sustained between partners in an on-going inter-organizational relationship?

Importance of Research

In an important way, alliances, as organizational forms mirror relational contracting (Macneil, 1974) more than discreet transactions since actors engage essentially in relational exchange. This is whether the alliance involves equity or non-equity relations. There may be good reasons why the use of soft governance, specifically dependence on trust, is preferable to reliance on contracts to govern exchange in these emergent forms.

First, reliance on contracts presupposes the existence of well-developed property rights regimes (Commons, 1950). Quantitative governance also presupposes the existence of institutional protection in the form of clear property rights and a strong judiciary. The assumption is that the presence of these conditions makes it less likely that people will fall back on personal knowledge as a basis of transacting business (Zucker, 1986; Coleman, 1993).

The reality is that these preconditions may not always be found. For example, there is evidence that emerging economies such as China, and the so-called "Small Tigers" of Southeast Asia, parts of Eastern Europe including Russia and most developing nations lack well-developed institutional mechanisms to protect exchange partners. Yet, cross-border alliances between Western nations and firms from these and other regions with weak property regimes are expanding. In the absence of acceptable institutional protection of exchange, partners must look for a functional equivalent with which to govern the relationship. I suggest that notwithstanding its limitations, trust when present, offers by far a more credible alternative to reliance on formal, legal based controls. In China for example, the

evidence is that in the absence of institutional factors, businesses have often substituted particular social relationships (*guanxi*) for formal structural support in business settings (Xin & Pearce, 1996).

Second, contrary to some transaction cost arguments, the structure of a relationship may make qualitative control a preferred option. For example, the nature of a particular relationship may be such that reliance on formalistic controls may be inadequate. Barney & Hansen, (1994: 186) write evocatively:

"[T]he level of vulnerability in some economic exchanges may be greater than the ability of any standard governance device to protect against the threat of opportunism. The only way to pursue these exchanges is through strong form trustworthiness."

In other cases, the need for qualitative coordination becomes necessary and feasible because an industry may be characterized by a "dense network of cooperation and affiliation by which firms are interrelated." (Richardson, 1972: 833). That may be the case especially in cases where firms share extensive industry norms or are spatially clustered.

Fourth, relations in which flexibility is required may do well to place emphasis on qualitative, and not quantitative coordination. Two examples come to mind. One can think of small, entrepreneurial firms in alliances. Such firms require flexibility, speed and can hardly afford costly and prolonged litigation. The other example has to do with relationships that have innovation as a primary objective. Alliances concerned with innovation generally may stand at a disadvantage if they place excessive reliance on contracts in an exchange relationship. In such instances, the future is full of uncertainty. The assumption is that the absence of extensive legal

agreements and the presence of trust will make renegotiations, where required, easier. In the face of uncertainty, contracts introduce greater complexity. The presumption here is that coordination in certain situations may best be accomplished through the use of non-hierarchical repertoires. In both examples, trust may actually be an efficient form of governance.

Fifth, there is the suggestion that trust, but not contracts, may constitute a "universal language" of business transactions (Tung, 1991). Tung makes the interesting observation that while contracts are generally perceived as legally binding documents in North America and Europe, Japanese, Korean and Chinese tend to view contracts as "organic" documents that are subject to evolution with time. This type of institutional and social incongruity between western and Asian cultures has been noted by at least one other researcher (Dunning, 1995). To the contrary, notions of trust seem to have universal resonance across cultures. To the extent that this holds true, it is fair to suggest that a preference for trust-based relations will be prudent and helpful in economic exchange. The recognition of the importance of trust in inter-firm relations is not limited to research.

Last, but not the least, practitioners recognize that trust is a prerequisite for successful partnering. For example, Richard Miller, CEO of Wang and an alliance partner of IBM, notes that a lack of trust is the biggest stumbling block in alliance success (Sherman, 1992). In an obviously ailing but otherwise very lucrative alliance between the Dutch carrier KLM and Northwest Airlines (US) the CEOs of both firms nonetheless affirm the centrality of trust in such a relationship (Tully, 1996).

The presence of mutual trust in inter-organizational relations may affect

performance in alliances through a number of paths. First by relying on a "man's word" (Macaulay, 1963) so to say, partners are freed to focus on the substantive goals of the relationship. Second although a certain amount of monitoring is desirable, reliance on trust makes continuous monitoring unnecessary since trust reduces opportunism (Larson, 1992; Bradach & Eccles, 1988). With trust, it is also unnecessary to specify in advance what the other partner is supposed to do in the case of unforeseeable events (Thorelli, 1988). Last, but not the least, trust reduces transaction costs for some of the very reasons mentioned above.

Ultimately though, the limits of contracts as much as trust must be accepted. For example, the courts hardly ever compel specific compliance to provisions in contracts, preferring instead to offer damages for non-compliance (Rubin, 1990). That, incidentally, is the limit of positive law.¹ In the same vein, any presumption that economic agents will be given to fitful bouts of altruism is unrealistic and generally inconsistent not only with the evidence, but also with the realities of

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Here I give an elementary example that nonetheless illustrates and captures the limits of both contracts and trust as well as the rationality of preferring trust to legal control in some cases. Lets assume I desire a portrait as a special gift for my mother's 60th birthday, whereupon I duly commission a locally renowned artist to do the painting. At the artist's behest, we sign a written contract. Contrary to the provisions of the contract, the artist fails to deliver the painting before my mother's birthday. Here on, I have two options. One, sue the artist for non-performance. The courts may award me damages, even punitive damages, depending on the merits of my case. But the courts cannot compel the artist to do the portrait. My second option is to refrain from suing and perhaps use moral persuasion to convince him I need the portrait. In fact, my preference may be for the later either because this artist is the only one I can find or he or she happens to be the best. In any case, I need this portrait. Indeed, in the circumstances, I need the portrait more than the money! The law can hardly provide what I need. Of course, if my moral persuasion fails and I still don't sue, I get no recompense whatsoever. This is a simple case, but it nevertheless captures the limits of both positive law and trust. As well, it illustrates why what may look irrational may be a preferred option depending on the circumstances.

modern commerce. Worse yet, unrequited trust will be costly to a trustor (Granovetter, 1992). In essence, neither contracts nor trust may be Rosetta Stones in governance efficiency.

These caveats notwithstanding, anecdotal, conceptual and empirical evidence suggests that trust does play an important role in both domestic and cross-border alliances. In fact, there is a fair amount of unanimity in the literature that reliance on trust is preferable to an obsession with the fine prints in contracts (Buckley & Casson, 1988; Casson, 1990; Larson, 1991; 1992). The fact is while rationality may indeed be more generally useful than “irrationality” as a basis for explaining human behavior (Williamson, 1993) concerns of friendship, altruism, honor and long term interest all play a part in economic behavior (Elster, 1990).

Rationale of Research

In spite of the recognition of the strategic role of trust in exchange relations generally and inter-organizational relations in particular, our understanding of the dynamics of trust in inter-firm alliances remains rudimentary and this has been recognized by other researchers (e.g. Reve, 1990; Parkhe, 1993a; Smith, Carroll & Ashforth, 1995; Gulati, 1995; Currall & Judge, 1995).

Although trust has become an important concept, there is as yet no systematic theorizing on trust between partners in alliances (see Husted, 1989; Madhok, 1995 and Gulati, 1995 for some exceptions). As Gambetta (1988, unnumbered foreword) observes, “the importance of trust is often acknowledged but seldom examined, and scholars tend to mention trust in passing, allude to it as a

fundamental ingredient or lubricant, an unavoidable dimension of social interaction, only to deal with less intractable matters.” But this has not prevented researchers from using trust as a critical variable in studies on inter-organizational cooperation.

Using trust as one of a number of several variables in inter-firm research is certainly fruitful. Our understanding of governance processes in alliances has certainly increased with such an analytical approach. The danger with this and similar approaches, however, is that a core but ill-understood concept risks becoming just another epiphenomenal adjunct in research on inter-firm cooperation. Possibly because the scope of such studies cannot allow for an in-depth focus on one construct. One result of this is there currently exist a gap between our appreciation of the importance of trust and our understanding of how it evolves and is sustained in economic exchange. One preferable approach to advancing knowledge on the concept may best be by the use of systematic, in-depth focus (Gulati, 1995). Consistent with the later approach, the present study focuses specifically on the dynamics of trust in business settings.

Although there is no shortage of theories and propositions about what factors produce trust in alliances, current normative and individual theoretical perspectives seem hardly adequate. There are at least four general categories of explanations: those that focus on specific behaviors by partners in a relationship; those that focus on the history of the relationship including the nature of past ties; those that suggest actors can use behavioral strategies to promote trust in exchange; and those that suggest the context of the relationship is an important determinant of how trust emerges.

Anderson & Narus (1990) provide an example of the first. They predict reciprocal causation between communication and trust. In fact the whole genre of work that focuses on behavioral contingencies that take place as part of an on-going inter-organizational relationship as key antecedents of trust, what Butler (1990) labels "conditions of trust" are illustrative of the first category of theories. Granovetter (1992) provides an example of the second category of theories. Granovetter suggests that the nature of ties, specifically the strength of social ties between individuals is primarily responsible for the presence of trust in dyads. The theoretical domain here is largely economic sociology. Dasgupta (1988) provides an example of the third category of explanations. Writing within a game-theoretic framework, Dasgupta notes that the presence of incentives may be important to sustain trust. In general, strategic behavior theory is used to explain why partners will confer trust on each other. Finally, Deutsch's (1958) findings that mutual trust can emerge in a dyad as long as the characteristics of the situation leads one to expect one's trust to be fulfilled, highlights the importance of contextual factors. It is noted that this fourth category of explanations has largely been ignored in current theorizing on inter-partner trust.

Research using any of the four explanations can, and have increased our understanding of how trust may emerge in economic exchange. Ultimately though, what the use of single perspectives give us are fragments of a theory of inter-firm trust. There is yet a greater, and more important, danger of applying single perspectives. This is the temptation to advance unitary causal explanations for something as dynamic as interfirm trust. The problem arises not because of what

single perspectives will emphasize but, for what they may de-emphasize. For example, suggesting a simple bi-directional link between prior ties and trust can be insightful. That may, however, be at the risk of ignoring or downplaying the role of contingency behaviors. In fact, reliance on unitary causal explanations alone to explain inter-firm trust may conflate, rather than clarify and illuminate our understanding of the dynamics of trust, particularly in economic exchange.

The lack of integrative theory-building efforts can only lead to oversimplification. Perhaps the tendency to cite anecdotal and historical evidence to explain the presence of trust may be traced directly to this type of oversimplification. Often, explanations of trust as Sabel (1993) observes is often limited to historical renditions confined to specific geographic areas, and one might add, nations. Within these accounts, determining association and causality between hypothesized variables and trust remains difficult.

One effect of this oversimplification is that a certain amount of skepticism has developed over the validity and effectiveness of governance by trust-based regimes, and by extension qualitative coordination in economic exchange.² I argue that this skepticism is real and demands attention. Reliance on findings based on rigorous empirical, not anecdotal evidence will be an important first step in addressing this skepticism. This research attempts to advance research work in that direction.

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For example, Williamson (1993) reserves trust to personal relations only. According to Williamson, only personal and not business relations can have trust. Of course, there is substantial anecdotal and empirical evidence suggesting that trust can indeed be created in economic exchange. For an interesting response on this point to Williamson, see Crasswell (1993) in the same volume.

The present study complements existing work by expanding the range of observation to include structural and behavioral variables and linking them to trust as an outcome. In so doing, this study increases our understanding of the phenomenon both conceptually and empirically. At the conceptual level, it is of interest to determine which, if any of the different proposed explanations contributes more to our understanding of how trust may emerge in an alliance.

Empirically, it is important to determine the extent to which each theory contributes to explaining trust in alliances. In general, a combination of explanations should help prevent a premature elevation of one specific set of explanations to the top of the theoretical pyramid. An integrative approach can also help reduce specification error in models of inter-firm trust. Practically we may begin to understand which set of factors are more important in building trust. This can help the development of strategies to promote trust between partners in an alliance.

In conclusion, it is noted that the exponential growth of different forms of inter-firm collaboration is widely recognized. Management and research issues emanating from this has generated substantial inter-organizational research (e.g. Harrigan, 1988; Smith, Carroll & Ashforth, 1995; Saxton, 1997). Strategy research will certainly increase its relevance by continued focus on the management of these new organizational forms that are fast redefining the rules of competition. Among the management and research problems in alliances, issues of coordination and control of exchange seem paramount. Within this domain, trust is seen as a wellspring.

Research Objectives & Study Outcomes

This study attempts to examine the conditions which facilitate trust creation as well as those that ensure that trust once created is sustained in an exchange relationship between two partners in a strategic alliance. A central proposition is that a focus on structural and situational factors including relationship-context behaviors is necessary to explain the conditions that give rise to and sustain trust between partners in an alliance. Specific objectives of the study are as follows:

- (1) Test a model of inter-firm trust generating structures and behaviors. The approach will be to examine the relationship between structural factors, partner behaviors and trust in business settings.
- (2) Examine the role of intermediaries in the form of industry-related referrals in trust in a dyad.
- (3) Examine the extent to which the nature of the relationship such as the degree of uncertainty associated with the exchange affects trust building. This objective relates to one paradox of trust. While theory will suggest that greater uncertainty requires greater trust (Barney & Hansen, 1994), partners may be less willing to trust for that very reason.
- (4) Test the relationship between partner perceptions, specifically the initial perceptions about one's counterpart's trustworthiness (a *characteristic* of the partner) and the emergence of trust subsequently. Here trust building is conceptualized as a form of sense making that is largely belief-driven. Micro behavioral processes and theories are brought to bear on explaining trust in business settings. This objective effectively brings the actor's perceptions

into what is essentially a systemic explanation of relational exchange.

(5) Examine the extent to which industry-level rationalities affect dyadic relations. Specifically, the extent to which shared industry norms affect trust building. The idea is that the extent to which collaboration becomes an industry recipe in the sense that it is accepted as legitimate should affect trust building at a dyadic level.

(6) Test the relationship between trust and performance in an alliance. Performance in the present thesis is assessed by subjective indicators which are nevertheless important.

(7) Supplement and extend the growing literature on the importance of trust in strategic alliances. Since the present research presents an empirical test of a number of trust related hypotheses, it should extend our knowledge on the subject of inter-organizational trust.

Research Strategy & Theory of Action

This research seeks to achieve both realism and balance. Hence it uses the theoretical strategy of rational sociology (Coleman, 1988; 1990). According to Coleman (1988: S97) such an approach is an attempt "to import the economist's principle of rational action for use in the analysis of social systems proper, including but not limited to economic systems, and to do so without discarding social organization in the process." Raub & Weesie (1990) in fact see a parallel between rational sociology and the "structural-individualistic approach" often employed by some European sociologists. Following Coleman's (1990) rational sociological

approach, a simple theory of action guides the present research. This is that the behavior of a system is determined by:

(1) The behavior of actors within the system. Partner context behaviors are important to understanding how trust emerges and is sustained. This is largely consistent with the body of work that suggests that trust in economic exchange is based on sustained contact (Powell, 1994).

(2) The properties of the system imposes specific constraints and opportunities on actors. The assumption is that the orientations of actors may be affected by these constraints and opportunities. The structure of the exchange, the partner's future intentions, aspects of the institutional context, specifically industry level factors may all present opportunities and or constraints on actors.

(3) The interaction of condition 1 & 2 above will predict the stability of the system. The durability of trust, as well as its effectiveness as a mechanism for governing economic exchange depends on how the two conditions relate.

To reduce the complexity of the model, certain characteristics of parties are assumed as given. As well, a number of variables are omitted from the original model that guides the research. In general, partner disposition variables are assumed as given.

Although the idea of conceptualizing firms in terms of dispositions may be sociologically naive (Cyert & March, 1963), there is some suggestion that a partner's propensity to trust may be important (Mayer, Davis & Schoorman, 1995; Brockner & Siegel, 1996). In this research, however, this factor is omitted from the model.

Instead, a firm's disposition to trust is assumed as given. In the early stages of theory building, such an approach may be desirable to reduce theoretical complexity.

As the main research question suggests, the present research adopts an input-process-output model. Researchers generally have a choice between asking "what " and "how" questions. Van de Ven & Huber, (1990) note that "how" questions are concerned with describing and explaining the temporal sequences of events. To the contrary, in an input-process-output model, "what" questions focus on inputs and thus entail a "variance theory" (Mohr, 1982). This research focuses largely on asking "what" questions.

Van de Ven & Huber (1990: 213) note a number of salient characteristics of this type of research and how it differs from the "how" or process theories. "What" questions entail an explanation of input factors (independent variables) that statistically explain variations in the dependent variables. In terms of causality, "what" questions require evidence of co-variation, temporal precedence, and absence of spurious associations between the independent and dependent variables" (Blalock, 1972).

Although this research adopts an input-process-output model, it nevertheless addresses some process issues. Indeed, as Van de Ven & Huber (1990: 214) note, the two issues, "How" and "What" questions are highly related. They write: "Whether implicit or explicit, the logic which underlies an answer to the first question [what] inevitably consists of a process story about how a sequence of events unfold to cause an independent variable (input) variable to exert influence on a dependent (outcome) variable." More directly, the study uses a field study of several cases to

understand the “ how” aspect of trust in alliances. Thus, the issues and processes by which partners trust are studied via a case study of a number of alliances. A between method triangulation is then used to derive the results of the study.

The present research collects and tests, in part, data using the dyad as the unit of analysis. It has been determined that dyadic analysis is most appropriate for studying relational phenomenon because the dyad is a form of “organization” (Baker & Hawes, 1993: 85). In fact, the use of dyadic data to understand relational phenomenon has been described as being of “paramount interest” (Anderson, Håkansson & Johanson, 1994) in understanding exchange relationships. These views are consistent with those of the German sociologist Georg Simmel (1950) who argued persuasively that dyads are truly unique social units and are in fact not reducible to individual phenomenology.

ORGANIZATION & OVERVIEW OF THE THESIS

The thesis is organized into five parts. *Part 1* contained the conceptual and theoretical overview of the thesis. *Part 2* constitutes the review of the relevant literature. It includes Chapters 1 to 5. *Part 3* contains the theory, research design and hypotheses that guides the study. It includes chapters 7 to 9. *Part 4* contains the data analysis, discussion of findings and concluding notes. *Part 5* contains the tables, figures, references and appendices.

Overview of Thesis

In understanding the dynamics of interfirm trust, it is important to look at several trust generating contexts. As Beavin & Jackson (1967: 21) observe, "a phenomenon remains unexplainable as long as the range of observation is not wide enough to include the context in which the phenomenon occurs." The challenge though, is to achieve parsimony at the same time.

The present research proposes a parsimonious ordering of trust generating structures and processes into a micro and macro context following Bengtsson (1993). The micro-context is the relational context in within which partners build the norms of exchange as well as engage in behaviors that sustain trust. Then there is the macro-context. The structure of the exchange and the effects of factors exogenous to the relationship constitute the macro-context.

Figure 1 is a schematic representation of the framework that guides the study. Trust is examined from a number of different angles. First the framework looks at individual partner preferences and perceptions. So far, existing research on trust has been largely systemic. Within this context, specific partner characteristics and preferences are often assumed away. This is a serious omission given that factors such as the partner's future intentions may affect their current behavior. The framework also includes the partner's ex-ante perceptions of their counterpart's trustworthiness.

Second the specific structure of the exchange relationship is considered. This allows the research to tap at trust from a structural source. More specifically, the

degree of uncertainty associated with an exchange is included as a variable in the research. For example, it has been shown that in markets where the risks of exchange are very high as opposed to those in which the risks are very low, parties cannot but rely on trust (Siamwalla, 1978). Also, the partner's perceptions about the long term implications of the relationship may affect current behavior. In game-theoretic terms, the future may cast a shadow on the present (Axelrod, 1984), thus whether a relationship is perceived as a long term or short term one has an effect on how partners behave.

Third, the sociological context of partners needs to be understood. Alliance partners may have prior relations or share links to common third parties. This may confer some relational and social capital on dyadic actors. Factors in that domain may be considered as non-relational infrastructure. For example, the decision to trust may be built on third party referrals. A failure to consider such issues would amount to what Granovetter (1992) calls "temporal reductionism." What this type of reductionism does is to consider relationships as if they had no history. This thesis avoids that.

Fourth, is the partnership context where partners develop the norms of exchange and build trust more directly. Partners must develop the norms of exchange, try to meet each other's expectations and show interest in each other, and these behaviors are said to build trust (Larson, 1992; Johanson & Matson, 1987). Since people are ultimately the links by which trust in alliances is built and sustained, it is important to consider their role. Specifically, where there is turnover

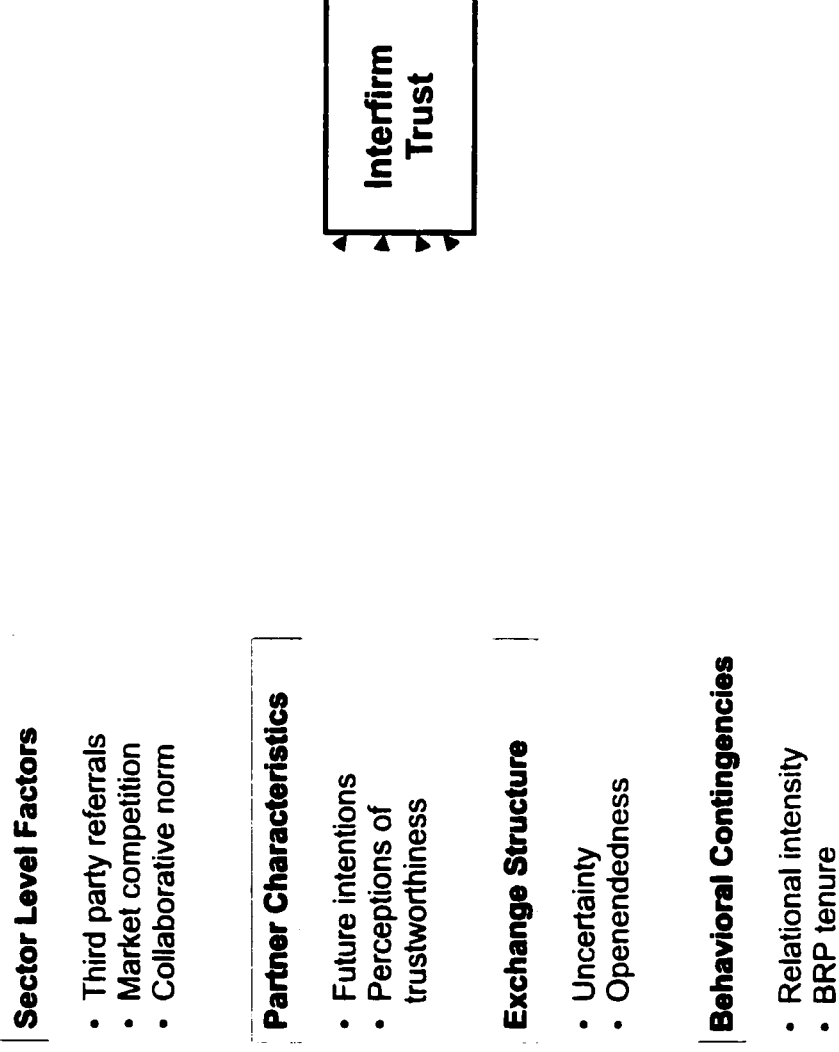
among the role persons charged with managing the relationship, one should see its effect on the relationship. It has been shown that the loss of such boundary role persons, BRPs, (Adams, 1976) impacts trust negatively (Dodgson, 1993).

Finally, since trust is supposed to work, to some extent, though social control, it may be revealing to examine the effect of industry-level acceptance of collaboration on dyadic relations. This should be so because theories of macro cultures (Abrahamson & Fonbrum, 1994) and the idea that industries have "recipes" (Spender, 1989) suggest that industry-level rationalities may affect dyadic relations.

Chapter Summary

This chapter presented the conceptual overview of the research. It demonstrated the need for research in this domain by discussing the importance and rationale of the study. It proposed how the study's contribution will be made by presenting the research strategy and conceptual framework that will guide the research. Subsequent chapters will review the relevant literature, present the theoretical framework and hypotheses and empirically test them.

Figure 1
A Theoretical Framework of Interfirm Trust



PART TWO

REVIEW OF THE RELEVANT LITERATURE

CHAPTER 2

LITERATURE REVIEW

THE SOCIAL CONTEXT AS A NON-RELATIONSHIP INFRASTRUCTURE

Chapter Summary

This chapter presents a critical review of economic-sociology based research that relates to trust building in business settings. The review evaluates existing trust-based research within this paradigm, noting gaps in the extant literature.

It is important to understand the context within which dyadic relations exist. The social context in particular is an important component in the development of relational norms and trust. The social context of a relationship includes all social ties existing between partners, both direct and indirect ties. Such ties include, but are not limited to ties that have nothing to do with a current relationship. It also includes the history of the relationship.

As Pfeffer & Salancik, (1978: 226) observe, "one can learn most about individual behavior by studying the informational and social environment within which that behavior occurs and to which it adapts." Related to interfirm cooperation and interfirm trust in specific, the social context provides both opportunities for trust building and embedded within it are structural mechanisms that may act as a check on opportunistic behavior.

In general terms, the social context provides opportunities for partners to develop emotional bonds between representatives of partnering firms. Feelings of

identity and friendship can all become a basis for trust. So important is the social context to trust building that the social psychological literature on trust suggests that there can be no trust unless partners or actors have a social basis for trusting (Lewis & Weigert, 1985). Of course, there is reason to suggest that this may not always be the case. The important insight here is that a focus on the social context is necessary for us to understand at least one legitimate basis for trust building.

The history of past interactions, as part of the social context of a relationship, also provides partners with the opportunity to form expectations about a counterpart's subsequent behavior. This is important since social psychological theories suggest that initial expectations are important for subsequent behavior (Rotter, 1971, Deutsch, 1958).

Besides offering opportunities for trust building, mechanisms embedded in the social context are important factors that serve as constraints on opportunistic behavior. As the subsequent discussions will show, the consequences of opportunistic behavior may be most felt in the presence of close ties between actors. For example, a partner's fear of loss of reputation and friendship is likely to be greater in the presence of close ties between key individuals in partnering firms. It is therefore important that any construction of interfirm trust focuses on social context dimensions. The sociological literature seems to have made the most progress on this front and that stream of research is now reviewed. The rest of this section proceeds as follows. First structural embeddedness perspectives are reviewed. Second the conceptual and empirical evidence is reviewed. Finally a

critical evaluation of this sociological perspective is offered.

Although little attempt has been made in the past to systematically examine the role of social context on dyadic trust, (see Husted's 1989 theoretical piece for a notable exception) the realization has not been completely lost. For example, Zaheer & Venkatraman (1995) call for research to place greater attention on the role of personal relations in building interfirm trust. The present study addresses this issue.

There currently exists a theoretical perspective and research tradition, rooted in economic sociology that suggests that trust in business relations can come about on the basis of structural factors within a social context of a particular relationship. The concept of "embeddedness"³ is the linking mechanism that ties together the contingent nature of economic action with respect to the social context (Zukin & DiMaggio, 1990: 15). The concept of "structural embeddedness" (Granovetter, 1985, 1992) is at the heart of the research tradition that emphasizes the key role of social structure in economic action generally and trustworthy behavior specifically.

Zucker & DiMaggio (1990) offer a rather comprehensive discussion of the concept of embeddedness. The authors list four types of embeddedness. First is cognitive embeddedness. This they define as the structured regularities of mental processes that limit the exercise of economic reasoning. The notion of cognitive embeddedness calls attention to the limits of corporate actors to employ synoptic

³ Zukin & DiMaggio (1990) note that the notion of embeddedness is derived from the economic anthropology of Karl Polanyi. Current usage of the term, brought center stage by Mark Granovetter (1985) has challenged and contradicted Polanyi's original claims. The usage in this paper is consistent with Granovetter.

rationality. Thus, trusting may be irrational, as Williamson (1993) suggests, but the fact remains that "irrational" behaviors such as affect, altruism all are part of economic behavior (Elster, 1990). Second is structural embeddedness. This refers to the contextualization of economic exchange in patterns of ongoing interpersonal relations. This is important in the context of this study. The whole notion of a trust-based regime is based on this concept. Third is cultural embeddedness. This refers to how shared collective understandings shape economic behavior and finally, is political embeddedness. The later refers to the manner in which economic behavior is shaped by non market institutions such as the state and social classes.

The first three forms of embeddedness may be related to the social context and are of interest to the present research. Out of the first three, structural embeddedness is of the greatest relevance since it deals with behaviors and structures that promote and sustain trust in business settings.

With roots in the economic sociology paradigm, the concept of "structural embeddedness" (Granovetter, 1985) is often used to explain the conditions that give rise to trust between specific individuals or partners. In simple but general terms, the whole idea of embeddedness focuses on the significance of informal structures as a component and context for economic action. As Zukin & DiMaggio (1990) observe, the term "structure" refers to the manner in which dyadic relations are articulated with one another. Although other researchers have examined the concept of embeddedness (e.g. Shapiro, 1987; Uzzi, 1996) the articulation of the concept is generally credited to Granovetter (1985) and so his views are largely

used to frame this perspective.

Granovetter (1985: 490) argues that social relations and the obligations inherent in them are mainly responsible for the production of trust in business settings. In his own words, the embeddedness perspective “stresses the role of concrete personal relations and structures of such relations in generating trust and discouraging malfeasance.” Although the social context is important, there is reason to suggest that its salience to trust behavior is constrained by one crucial factor. This is the nature and quality of the relationships that undergird the social relations. These qualities, in essence, are the preconditions that are necessary for the salience of structural embeddedness for trust behavior. These are now reviewed.

A number of qualities have been identified with the sort of network structures that are most conducive to producing trust (Husted, 1989). These are: the content of ties, the density of ties and the strength of ties. First the content of ties are important. Content refers to the type of meaning people attribute to the relationship. The type of meaning people attribute to a tie is related to the source of a particular tie. Ties can be either formal or informal. Formal ties arise when the two partners have a contractual relationship. Informal ties refer to personal links that exist between key personnel between partnering firms. In the network literature, formal ties are known as primary ties, to distinguish them from informal or instrumental ties (Lincoln & Miller, 1979; Lincoln, 1982). A structure or network of ties can be built on the basis of formal or informal ties.

Network of relations built on informal ties have been called expressive

networks (Ibarra, 1993). There is reason to suggest that expressive networks are more conducive to trust building than networks built on formal ties. One reason for this is that comparatively, expressive networks are often characterized by higher levels of closeness and trust than networks built on formal ties (Krackhardt, 1992). Informal ties may be instrumental in trust building because people often choose their friends and so there is likely to be greater affect between people in such a network. so goes the argument. Indeed, such friendship ties may be used for more substantive things such as the transmission of important communication (Lincoln & Miller, 1979: 196). To the contrary, network structures built on formal ties are less useful. Like formal contracts, formal ties may actually impose a greater burden on actors than informal ties and network of relations built on such ties (Lipson, 1991). But formal and informal ties need not be mutually exclusive. Indeed, their presence may complement each other. At the very least, they may increase the linkages between the partners and hence lead ultimately to greater structural embeddedness between the partners.

Second is the density or multiplexity of ties between partners. This refers to the number of different ties existing between partners. Multiplexity refers to ties between individual actors, including links to other third parties. This is consistent with Granovetter's (1985) original usage of the term, multiplexity. In its original usage, it is suggested that trust and more specifically its non-violation arises partly because of the presence of third party links.

Granovetter (1992) writes:

"My mortification at cheating a friend of long standing may be substantial even when undiscovered. It may increase when the friend becomes aware of it. But it may become even more unbearable when our mutual friends uncover the deceit and tell one another. Whether they do so will depend on the structure of the network of relations-roughly speaking, on the extent to which the mutual friends of the dyad in question are connected to one another. When these connections are many, what is called "high network density" the news will spread quickly; when they are isolated from one another, much less so." (Granovetter, 1992: 44).

The suggestion is that even in the absence of self-regulation, partners with a minimum amount of rationality will remain trustworthy because of fear of losing their reputation or friendships with other parties. Partners may also remain trustworthy where the linkages between partners are so dense that one can assume some degree of group influence. This because cohesive groups are more efficient at generating normative, symbolic or cultural structures that affect behavior (Granovetter, 1985; Ouchi, 1981).

Although multiplexity in its original usage refers more to links to third parties, one can conceive of multiple links between representatives of each partnering firm. This way, the dense network of ties that emerge is restricted to the dyad, but such a network of ties may prove valuable. In fact, it may constitute one insurance against the disruption of ties that result from labor turnover and breakdown of friendships. As long as these ties are between key people from the dyad, their salience cannot be devalued. Incidentally, partners can apply specific strategies to increase these linkages. For example, partners can decide to have multi stranded relations at the same time. Such a strategy may serve to increase the number of links between the dyad as well as make it less likely that violations of trust will occur.

The third and final quality of a social structure is the strength of the ties between parties. Granovetter (1973: 1361) defines tie strength simply as a function of the "amount of time, the emotional intensity, the intimacy and reciprocal services that characterize a tie." The suggestion is strong ties will lead to trust, to a certain point.

In summary, this perspective suggests that trust emerges on the basis of shared ties, both formal and informal, between agents of partnering firms. The existence of prior ties and personal relationship between key people in both firms are important building blocks for creating trust in an on-going relationship. While this perspective is insightful, the critical task is to determine when and to what extent social relations aid trust building and prevent its violation. One need not look far for answers to this question.

Granovetter (1985: 491) makes an important qualification on this point. His position is trenchant and revealing. He observes that social relations may be necessary as a precondition for trust and trustworthy behavior, but they are *not sufficient* (emphasis added) to guarantee trust. More striking, he goes on to say that strong social relations may even provide the "occasion for malfeasance on a larger scale than in their absence." Thus, a curvilinear relationship is posited between tie strength and trust. Granovetter's view is noteworthy for two reasons. One, it constitutes a realistic assessment of the limits of the embeddedness perspective. Secondly, in strong terms, it points to the fact that strong ties, beyond some point, may be dysfunctional. In plain terms, familiarity can breed trust as Gulati (1995)

found, as well as contempt.

One real theoretical problem is to determine whether such curvilinear relationship will apply to trust building in business settings. As a prefatory remark, it is noted that strong ties are generally more conducive to trust building in business settings than weak ties. The present research subscribes to the view that social relations may indeed be a necessary, but not a sufficient condition for trust, especially trust that can be sustained for the duration of the exchange. In fact, a more rigorous approach is to examine the extent to which the implied self-regulation or social control associated with structural embeddedness holds.

Without as much as saying so explicitly, the preceding discussion suggests that trust is sustained because of the fear of loss of friendship, reputation and repeat business in the event one partner acts opportunistically and this becomes known. Williamson (1975) sums this presumption up. He writes:

"Repeated personal contacts across organizational boundaries support some minimum level of courtesy and consideration between parties.. In addition, expectations of repeat business discourage effort to seek a narrow advantage in any particular transaction... Individual aggressiveness is curbed by the prospect of ostracism among peers, in both trade and social circumstances. The reputation of a firm for fairness is also a business asset not to be dissipated" (Williamson, 1975: 106-8).

Other researchers have come to similar conclusions on some of the reasons why trust may be sustained in a relationship. Shapiro, Sheppard & Cheraskin (1992) are most expressive of this view when they use the term "deterrence-based trust." Simply put, it is suggested that trust is sustained in an exchange simply because of the consequences of untrustworthy behavior. Expressing similar sentiments, Ring & Van de Ven (1989: 178) suggest that trust is sustained "when the potential cost

of discontinuing the relationship or the likelihood of retributive action outweighs the short term advantage of acting in a distrustful way." These and similar views have been echoed by other researchers (Granovetter, 1985; Maitland, Bryson & Van de Ven, 1985). All these may be so, but for greater conceptual clarity additional theoretical work is required.

Indeed, the central theoretical and empirical question ought to be to determine when the prospects of fear of loss of reputation, repeat business and friendship are enough of a deterrence against untrustworthy behavior. In the same breath, it is important to determine when strong ties aid trust building. Both sets of issues are addressed momentarily, but first the term "deterrence" is briefly annotated.

Traditionally, the term deterrence, as used in this context, comes from political and game theory. Simply defined, deterrence involves manipulating someone's behavior by threatening him (Morgan, 1983). Political theory offers some insight on when deterrence is likely to work. The goal of deterrence is to dissuade another actor from carrying out an undesirable behavior. Schelling (1966: 374) notes that for deterrence to work, a deterrer must carefully define what is unacceptable behavior, communicate a commitment to punish the transgressor or at least deny them their objective. A deterrer must also possess the means to do this, and above all demonstrate the resolve to carrying out the threat. Within a socially embedded context of business relations, partners are not making threats. Instead, informal control and self-regulation are substituted for legal control. Thus, the use of the term here is more benign.

At least two additional conditions must exist for ties to be of value to trust building. First, it is imperative that key individuals with shared ties across the partnering firms have important positions in their respective firms. For example, when the link is between two CEOs it is assumed that affect between such people will translate into trust in the relationship. However, that alone may not be enough and such key people must support the alliance and preferably, engage in influencing activities. In general, top management support cannot be simply assumed because it is known that key people, including CEOs have withheld their support from alliances because they sense that the partnership may diminish their authority (Prahalad & Doz, 1988). In other cases, where the original individuals that share the ties leave the firm, we assume that trust building on the basis of shared ties may be considerably weakened.

Second, conditions must be such that the consequences for violating trust in a relationship are substantial. This will be the case when a violation is known, not only by the partner but most importantly by those in the network. If the fear of loss of friendship, reputation and repeat business remains the main deterrence for trustworthy behavior (Ben-Porath, 1980), then it is imperative that a social structure that facilitates the dissemination of information about each party exists. Thus, the more dense the nature of linkages (including ties with third parties) the greater the possibility that adverse information on a firm will have undesirable consequences. Indeed, Raub & Weesie (1990: 620) demonstrated that reputation effects are more salient in the presence of what they call perfectly "embedded systems" meaning the dense linkage to third parties. Kreps (1990) similarly suggests that trading hazards

are often mitigated by embedding trades in networks which reputation effects are known to work. Since the loss of reputation is such an important building block, its links to trust, self-regulation and social control are discussed in some greater detail.

What makes it possible for the type of self-monitoring being suggested here is reputation. Indeed, Chiles & McMackin (1996: 87) make a most direct link between reputation and trust when they note that “trust can lead to the constraining of opportunistic behavior *by way of reputation* (emphasis added). Beyond this recognition, there is a lack of systematic focus on the mechanisms through which reputation serves as a credible deterrence to opportunistic behavior. Previous discussions have generally assumed away the fact that reputation's ability to serve as a “hostage for performance” (Rubin, 1990: 147) cannot be taken for granted.

Reputation has been defined as a characteristics or attribute ascribed to one person by another (Wilson, 1985). A partner's reputation is an evaluative characteristic that one partner ascribes to the other. Firms can have a reputation for just about anything. Some firms have a reputation for reliability (Weigelt & Camerer, 1988) a reputation for honesty (Milgrom & Roberts, 1992) or trustworthiness (Ring & Van de Ven, 1992). In the context of alliances, a reputation for trustworthiness is important. Such a reputation becomes a form of social capital (Coleman, 1988) and ultimately, reputation has economic value (Hill, 1990). A partner with a good reputation can use it as a form of market signal to potential partners. Hence reputation building is an investment in collaborative relationships (Buckley & Casson, 1988; Hill, 1990). Since reputation is valuable, the argument goes, partners will monitor themselves for fear of losing a valuable asset.

For reputation to be effective as a deterrence mechanism, however, a number of conditions must exist. Examining these is important since there is a recognition that the loss of reputation per se, is not strong enough to ensure compliance (Lipson, 1991; Rubin, 1990; Ramseyer, 1991). Thus, the fear of loss of reputation may promote trustworthy behavior but does not guarantee it unless certain specific conditions exist.

First, the effectiveness of reputation as a deterrence is constrained by the fact that not all untrustworthy behavior will be known. Although a firm's past history can be easily researched by talking to existing or past partners (Larson, 1991) it may not always be possible to know a partner's record. Indeed, it is suggested that even for those that are known, not all violations of trust are going to be viewed with equivalent gravity (Ramseyer, 1991). For example, certain violations may be considered by third parties as excusable. As Lipson (1991) suggests, memory, inference, and the social construction of meaning by a party all matter. Factors such as shared similarities, either social or sectoral between partners may all be important for this social construction of what constitutes a "grievous" violation of trust and what does not. Thus, short social and physical distances may be more conducive to using reputation as a hostage since these promote communication and appreciation of what a violation means for a partner's reputation.

Second, to be effective, partners must care about their reputation. In other words, a minimum level of rationality on the part of actors is assumed. Drawing on political theory, specifically research on international relations, it has been suggested that in certain cases, actors are less concerned about their reputation.

For example, it is noted that sovereign debtors value their reputation least when they do not expect to borrow again (Lipson, 1991). Related to interfirm cooperation and trust specifically, this hints at the importance of a partner's long term intentions. Where a partner is only concerned with short term gains, it might discount the value of its reputation.

Finally, the time horizon of a particular relationship may affect the salience of reputation as a hostage. Lipson (1991) suggests that the hostage of reputation depends on (1) the immediate gains for untrustworthy behavior (2) the lost stream of future benefits, e.g repeat business, and the rate of discount applied to that stream, and (3) the expected costs to reputation from specific violations. The argument is that a partner's reputation for reliability has value overtime. Lipson (1991) suggests that when time horizons are long, even distant benefits are considered valuable now. Future benefits are worth little when time horizons are short. Although not illustrative of the core assertions made here, Tucker's (1991) findings from his study of collaboration among European aircraft manufacturers confirms the link between future intent and present behaviors. He reports that the French company, Dassault, tended to discount the future benefits from collaboration because it did not intend to establish long-term strategic alliances with its European partners. In summary, it is noted that the workings of trust through reputation may be dependent on factors that relate to the social, institutional, including the sectoral context of the exchange.

There is some evidence to support some of the key assertions from the structural embeddedness perspective. But without exception, and this is consistent

with Granovetter's (1985) position, social relations alone seem inadequate to sustain trust.

In fact, it was Macaulay's (1963) seminal study that drew attention to the fact that trust in business relations may be built on the basis of friendship and personal ties. At the same time, however, Macaulay noted that the American businesses he studied had access to a variety of what he calls "counterbalancing sanctions." These included down payments before delivery and the existence of "blacklists" that hurt a company's reputation in the case of trust violation. Palay (1985) also documented from his study of rail-freight carriers that personal relations play an important part in economic action. His findings that firms make use of informal arrangements that were intimately bound with individuals, gives partial support to the idea that trusting relations can be built on social relations.

In a study whose findings on this point are largely consistent with the anecdotal evidence, Gerlach's (1992) national-type context study documented the role of prior relations in promoting trust and cooperation among Japanese businesses. Larson (1992) similarly found that prior ties set the stage for the emergence of trust between partnering firms. In an ethnographic study of of seven pairs of what she describes as "highly cooperative" interfirm alliances, Larson (1992) concludes that the foundations of mutual trust were laid down long before the partners began their transactions. This she traces to the history of both formal and informal prior ties between key people from partnering firms. Two related studies that address the importance of past history as part of the social context follow.

Uzzi's (1996) more recent study arrives at similar conclusions about the role

of social relations in trust building. In an ethnographic study of 23 New York apparel firms, the author concludes that one consequence of embeddedness is the emergence of trust. Uzzi's (1996: 680) finding that "a lack of prior social relations leaves a new tie without initial resources and behavioral expectations that reduce uncertainty," is important. This finding touches on the importance of the history of the relationship and what it brings to an on-going relationship. The idea that the past provides a basis for forming initial expectations is important.

Linked to certain socio-psychological theories that link initial expectations to subsequent behaviors (e.g Darley & Fazio, 1980) there is reason to suggest that partner's initial expectations about each other's trustworthiness may affect how they behave and that in turn, may affect how trust emerges in the relationship and this type of issue has not gone completely unexamined in the literature. For example, Andaleeb (1989) examined the degree of attitude change when there was an initial reversal in one's initial perceptions of trust in another party. In general though, incisive focus on what role perceptions formed ex-ante play in the subsequent development of trust are missing. Uzzi (1996) also found that the possibility of losing one's reputation was tenuous as a deterrence in the absence of a social structure. This is important since it supports the notion that the salience of reputation is low unless certain specific conditions exist.

Gulati's (1995) study addresses larger governance issues. Consistent with findings from studies already mentioned, Gulati (1995) found that the existence of prior ties led to the choice of non-equity governance form. This form, it is assumed, reflects the presence of trust and the choice of governance mode was used as a

proxy for trust. The use of proxies to measure trust is acceptable. In fact, Zucker (1986) acknowledges that proxies can be used. But the point must be made that other factors often enter into the choice of governance mode, as Gulati (1995) himself acknowledges.

EVALUATION

Our understanding of conditions that give rise to trust has been improved by this theoretical perspective. By underscoring the importance of social relations in the form of prior formal and informal ties as well as the network structure in which they are embedded, the social embeddedness perspective makes an important contribution to our understanding of how trust may emerge between alliance partners.

By focusing on the relationship history as part of the social context, one avoids treating business relations as if they had no history. Attention to the prior history of the relationship also allows one to avoid making unnecessary stylized assumptions about the nature of interaction between partners as well as understanding one important basis for trust building. At the same time, one can say that a realization that the past is important to the present alerts businesses to the need for a certain amount of reflexive self-monitoring since yesterday's ties may become the building blocks for trust tomorrow. Indeed, the homily "honesty is the best policy" expresses the links between the past, present and future in business relations.

In summary, it is noted that social relations aid trust building by providing a context for forming initial expectations as well as become the basis for the

accumulation of social capital, all which in turn affect trust building. Through its links to reputation effects, social relations act as a check on opportunistic behavior. These important insights notwithstanding, the embeddedness perspective is not without its shortcomings and a number of key ones are discussed.

First the social structure which is the main building block of this perspective is often assumed as given and little attempt has been traditionally made to specify how it evolves. This important weakness has been noted by other researchers (e.g. Coleman, 1986; Kollock, 1994; Uzzi, 1996). In the absence of this specification, it is difficult to determine the precise link between trust and social relations. For example, while conceding that there is obviously a link between trust and social relations, Shapiro (1987) argues that the relationship may be tautological. As Shapiro (1987) argues, considering the emphasis placed on social structure in this perspective, effort ought to be placed on specifying how the social structure might emerge. Perhaps as a way around this issue, Granovetter (1985) assumes that a social structure exists between the partners *ex ante*. But absent this assumption and a crucial piece of the puzzle is missing. Other researchers have attempted to fill this theoretical gap.

Podolny's (1990) experimental study attempts to demonstrate how a social structure might emerge, but his findings are constrained by the limits of his experiment. Uzzi's (1996) field study on the other hand provides one of the first important preliminary insights into how a social structure emerges in business settings. He concluded that referral networks, and repeated exchanges are important sources for the emergence of social structure. Referrals can be made by

third parties. Conceivably, such third parties may be ex-employees, institutional actors and mutual friends of both partners.

Second, it is surprising that Granovetter (1985) and his intellectual fellow travelers stop short of advancing theory to complement the weaknesses of this perspective. What is more surprising is that Granovetter (1985) downplays the importance of institutional and cultural variables (what he calls generalized morality) as sources of trust. Following the position of other researchers (e.g. Zucker, 1986; Parkhe, 1993; Lane & Bachman, 1996) it is argued in this paper that institutional, social, psychological and strategic factors all affect how trust emerges in business settings.

Third, although the history of any relationship is important, it brings little to a present or on-going relationship unless what happened in the past is remembered. In other words, actors must keep mental accounts (Kahneman & Tversky, 1984). An actor's social inferences in certain social contexts may not always be accurate. In fact, the social-psychology literature suggests that individual renditions of interpersonal past are not always right (Kramer, 1996). At an interfirm level, these difficulties may be compounded. Where key people have left the organization, the importance of history may be partially diminished unless prior social ties have translated into concrete successful collaboration in the past. That way, at least, the social memory of the organization can be said to be more enduring. Although a matter of empirical study, one can conjecture that the history of a relationship between partners or its representatives should be at least long enough to be of value, but not too long as to make it more difficult for actors to

remember.

Fourth, the social embeddedness perspective, and for that matter the whole sociological approach to trust does not address how trust may emerge in the absence of shared structures of personal relations. Little effort is made to focus on situational factors. But these may be important to trust building (Deutsch, 1962).

Fifth, the definition of tie strength is rather weak and ambiguous. Granovetter (1973: 1361) defines the strength of a relationship as "a combination of the amount of time, emotional intensity, intimacy and the reciprocal services which characteristic a social relation." Using this general insight, the strength of ties has been measured by such diverse things as recency of contact (Lin, Dayton & Greenwald, 1978) and labels such as "friend". Building on previous definitions, Marsden (1990) defines the strength of a tie as some combination of frequency of contact, level of closeness, and degree of reciprocity.

As Krackhardt (1992) notes, however, these measures are unsatisfactory at the very least. Indeed, a certain amount of conceptual vagueness is apparent. Krackhardt (1992) notes that besides history, the indices of tie strength, emotional intensity, intimacy and "reciprocal services" are all subjective. Krackhardt (1992) certainly puts Granovetter(1973) and others on a surer theoretical footing. Using the Greek word *philos* to describe a particular form of strong tie, Krackhardt (1992) identifies three conditions that define the strength of a tie. These are: current interaction, affect between and for actors, and the history of prior relations. He argues that these conditions, as part of a strong tie, are necessary for trust.

Lastly, but not the least, research must be able to determine the extent to

which trust, based on social relations (and any perspective for that matter) is able to achieve a measure of social control in relations governed by trust. Social control has been defined in terms of “self-regulation with a moral dimension and as a feedback process that is jointly determined by and is diffused across multiple participants” (Leifer & White 1986, cited in Larson, 1992). Thus perceived, certain social structures linked to cooperating partners must be more effective than others in engendering social control.

Chapter Summary

This chapter reviewed sociological theories on trust in business settings. The review showed that the social context and history of a relationship are important for understanding how trust emerges and is sustained in dyads. One key empirical advance in this research tradition is an explanation of how the sources of social structure begin. This insight is used as one building block in developing the theoretical framework for this thesis.

CHAPTER 3

SHARED SOCIAL NORMS AS EXTRA-RELATIONSHIP INFRASTRUCTURE AND TRUST

Chapter Summary

This chapter reviews the normative stream of research that suggests that the presence of shared values between partners in an alliance will affect how trust emerges and is sustained in business settings.

There is a fairly established line of research that suggests that trust in business settings may be dependent on shared similarities between partners. Specifically, the presence of shared social norms is a basis for trust building. Norms are expectations about behavior that are at least partially shared by a group (Thibaut & Kelly, 1959; Gibbs, 1981). This type of trust has been referred to as global trust in generalized others (Butler, 1991) or depersonalized trust (Rabbie, 1990) to differentiate this from "situational trust" that is built on the basis of knowledge from a specific relationship. In general, this normative perspective touches on the factors that may make an individual or group to confer trust on another individual or group, even in the absence of specific knowledge about the other party.

The key contention in this perspective is that people confer trust on each other because they share social norms and expectations that may arise out of a shared national or regional culture. For example, ethnicity, history and religion can be sources of shared norms (Macneil, 1974; Zucker, 1986). In business settings, shared values become one consideration for trusting, so goes the argument. Within

this normative perspective, social control is achieved by the honoring of moral obligations that are embedded in the social norms that generate trust. This reasoning suggests then that the stronger the shared norms between prospective partners, the more likely it is that a relationship between them will be characterized by trust.

This conceptualization of trust behavior is consistent with the view that the primary function of trust is to reduce the complexity of everyday life (Luhmann, 1979). For Luhmann (1979: 73) then, "trust is a question of generalized attitudes, with considerable indifference toward numerous details and slight shadings of experience." Expressing a related sentiment, Lewis & Weigert (1985: 969) observe that such global trust becomes a "property of collectives, not individuals and people choose who they trust on the basis of specific reasons as well as on the basis of emotion and behave accordingly toward the people they trust until they do something to abuse such trust."

The idea that shared norms can be a basis of trust has been challenged by Granovetter (1985). He argues, contra this perspective, that a "generalized morality" is not a source of trust. At the surface, both perspectives may seem diametrically opposed to each other. The fact is they may actually complement each other. Although the link has not been made, there is a link between factors that give rise to trust in "generalized others" and "situational trust in specific others" (Butler & Cantrell, 1984; Butler, 1991). The link between these two perspectives can be made with additional insight from Zucker (1986).

Zucker's (1986) distinction between two types of expectations in exchange

relations and trust building is insightful. The author distinguishes between two types of expectations: constitutive and background expectations. Constitutive expectations are defined as rules that define the context of a relationship. Thus, such expectations are more specific to a particular exchange or interaction. For example, norms of equity and fairness in an exchange may develop between partners within a relationship context. These, in turn, can enhance the process of trust building. Background expectations on the other hand are not "specific to any situation, but serve as a general framework for behavior" (Zucker, 1986: 58). This relates more to shared social values that are at the heart of global trust.

According to Zucker (1986), shared symbols and interpretive frames are vital components of background expectations. Without explicitly saying so, the normative perspective seems to be referring more to background than constitutive expectations when it suggests that trust emerges largely out of shared social norms. Indeed, Zucker (1986) goes on to suggest that distrust is more likely in the face of violations of fundamental shared norms. The fact is, viewed within the framework of the present study, shared norms or background expectations may be nothing more than "extra-relationship infrastructure", except in a few restricted cases where main effects can be posited for shared ties and trust while their absence means that partners have to work harder at building constitutive norms, their presence, on the other hand, means that partners have yet another asset on which to build.

Indeed, in certain specific situations, one can expect that shared norms alone will be enough to generate trust in business relations. For example, where the basis of generalized trust is strong enough as in kinship groups (Hart, 1988) trust in

specific persons may result not so much from situational determinants but from generalized determinants such as shared norms. The presumption is that the presence of strong social norms between actors increases their predisposition to confer trust on similar others as well as less likely that they will act opportunistically. In the same breath, the existence of strong shared norms, language, symbols, vocabulary can reduce the costs of trust building. Simply put, abundant background expectations diminishes the need for strong constitutive expectations.

EVALUATION

There are a number of both empirical and anecdotal accounts that support the idea that trust may indeed, be built on shared social norms. Zucker (1986) provides one of the most exhaustive accounts of trust building in a national context to date. In a sociological treatise on the institutional sources of economic action in America, Zucker (1986), in part, sees trust as "closely related to the basic norms of behavior and social customs." This is what the author calls "characteristics-based trust." In this case, trust is tied to persons, depending on background or ethnicity.

Dore (1983: 463) similarly notes that businesses in Japan regard exchange as "moralized trading relationships in which mutual goodwill exists." The author argues that in Japan, norm-based trust is engendered by the social norm which insists that business relations are personal relations. Similar arguments have been used to explain trust in parts of Italy. Local and regional cultures are said to promote norm-based trust in business relations in North-Central Italy (Piore & Sabel, 1984). Hart (1988) also found that shared social norms among a kinship group aided cooperation and trust building among tribesmen in an urban slum in Ghana.

Bengtsson (1993) notes that certain sectors of Swedish industry, notably electric utilities, enjoy norms of cooperation that may be built on shared norms that cuts across industry and government.

The normative perspective makes an important contribution to our understanding of some of the conditions that might generate trust in an alliance. The empirical accounts of trust building on the basis of shared social norms is evidence that social similarity can be an important building block for a theory of interfirm trust. The suggestion that partners with shared social norms may have a greater amount of goodwill stock with which to build trust is important since there is a cost to trust production (Gambetta, 1988; Sako, 1992).

As a basis on self-regulation, there is reason to suggest that internalized societal or system values can become effective tools for self-control which is important for trust to work as a governance mechanism. Indeed, cultural norms can be self-enforcing rather than be enforced by members of a community. As Crasswell (1993) puts it, if people feel remorse when they break their promises, breaking a promise carries an extra burden they will rather do without.

What comes clear, however, is the fact that as a basis for trust building, shared background norms will apply only in a few specific settings. Considering the restrictive nature of this view, one needs add that the validity of most of these claims require closer scrutiny for a number of reasons.

First it is quite difficult to determine direct causality between the existence of social norms and trustworthy behavior. Competing explanations cannot be ruled out when something as general as social norm is used as the main building block for

explaining trust in business settings. For example, in the case of Japan, competing explanations have been advanced for the existence of trust and cooperation. Factors such as the high cost of litigation and the slow process of seeking legal remedy, all unconnected to shared norms, have been advanced as explanations for the atmosphere of trust and cooperation that exists in business exchange (Haley, 1978).

Second the notion of norm-based trust suggests that trust must be treated both as a fixed commodity, or at the very least, a scarce commodity. More important, there is the suggestion that unless there exists shared background expectations, it is impossible to have trust (Lewis & Weigert, 1985). Such a line of reasoning suggests that one either finds trust or not. Pushed to its logical conclusion, the idea is that historical conditions become the most important factor for finding trust. The question then becomes whether it is at all feasible to create trust in the absence of widely shared norms.

Although those who subscribe to the view that the existence of shared social norms is a *sine qua non* for trust would tend to be less sanguine about the possibility of creating trust in the absence of shared norms, there is reason to suggest that this question ought to be answered in the affirmative. In fact, as Sabel (1991: 1136) quite appropriately observes, accepting that trust can only be found as a result of shared background will amount to a "paralyzing acceptance of history as destiny." Indeed, such a view is inconsistent with the empirical evidence (e.g. Dodgson, 1993; Zucker, 1986; Sabel, 1991). The present study, much like other research, suggests that trust may be routinely produced in business settings (see

also, Anderson & Narus, 1990; Sako, 1992).

In general, norm-based views of trust miss the situational, active, partner-specific dimension of trust building. As Powell (1996: 63) notes, "social norm-based conceptions of trust miss the extent to which cooperation is buttressed by sustained contact, regular dialogue, and constant monitoring." Hence, a bi-directional view of norm-based trust misses the strategic component of trust behavior.

Finally there is the implicit assumption that norms remain static. At least at present, theory development is yet to include a discussion of what happens as norms change overtime. Prior to reaching that level of theoretical progression, the next logical thing is to assume that norms remain static. But that assumption would not only be unrealistic, it may be stifling as well. In fact, there is evidence to suggest that culture and norms are dynamic. For example, Sako (1992) observes that norms of exchange have changed in Japan overtime. Hart's (1988) example of trust building among a kinship group in an urban city in Africa is one with which this writer is familiar. Cross-kinship links resulting from intermarriages may, in part, have broken the social homogeneity that undergird trust in the kinship group the author studied. In summary, it is noted that the presence of shared norms between partners may be nothing more than yet another "extra-role infrastructure" that partners can draw upon to create trust. Whether shared background norms alone is enough to build trust in business relations may depend on specific circumstances.

Chapter Summary

The evaluation of this literature suggests that although plausible and useful, the perspective linking shared norms to trust may be rather restrictive. Perhaps the key

insight is that where partners enjoy shared norms and values, there initial perceptions about each other's trustworthiness may be higher ex-ante. If so, then perhaps trust can emerge more easily in such settings than in others. The next chapter reviews the relevant literature on a related topic, similarities on the basis of sectors.

CHAPTER 4

THE ROLE OF INSTITUTIONAL & SECTOR LEVEL FACTORS IN DYADIC RELATIONS

Chapter Summary

This chapter focuses on the impact of sector-level and institutional factors on trust in interfirm relations. The fairly sparse, but potentially useful, research on the role of industry-level variables on dyadic exchange is reviewed. First, the links between national level institutional factors such as the judiciary and trust at a dyadic level are reviewed. Then sector or industry level factors and their link to trust are examined. The objective here is to bring in the context within which partners are situated.

Institutions, as third-image factors can have effect on firm level behavior. In this case, interest is on how a system of laws including a competent judicial system affects trust building in dyadic settings. At a national level, the system of laws, a competent judiciary and clear property rights regimes are all factors that may aid trust building. Institutional structures such as the system of laws, social and political institutions have been defined in terms of how these structures, both formal and informal, shape human interaction (North, 1990). While formal constraints include formal political, economic and judicial rules, informal constraints include the norms and value systems of a society, its culture (Hill, 1995).

North (1990) suggests that institutions can curb opportunistic behavior by setting the rules of the game on what is acceptable and what is not. Thus, the existence of clear property regimes, and a competent judiciary will provide institutional protection. As long as people know that others will follow the known

rules, trust will emerge not on the basis of particularistic knowledge about others (Zucker, 1986; Coleman, 1993) but out of respect for those rules. The suggestion here is that partners in an alliance will be trustworthy if they see that there are effective rules that will punish trust violators for opportunism. Thus, an instrumental explanation for trustworthiness is implied even though it is sometimes suggested that institutional behavior is often adopted simply because people accept their existence as a social fact which individuals must obey (Tolbert & Zucker, 1983). One of the most explicit links to date between trust in economic exchange as a factor of national institutions is made by Dunn (1988). He writes "human beings need, as far as they can, to economize on trust in persons and confide instead in well-designed political, social and economic institutions."

There is some empirical evidence to support the idea that the existence of stable institutional structures will promote trust in business settings. In a comparative ethnographic study of supplier relations in Britain and Germany, Lane & Bachman (1996) found that trust-based relations rarely evolve spontaneously on the level of individual interaction but are highly dependent on the existence of stable legal, political and social institutions. Their analysis considered both higher level institutional structures (national level) and other lower level structures and intermediary mechanisms such as the Chamber of Commerce, trade associations and the quality certification systems in both countries. In addition, they considered general societal norms in both Britain and Germany and show how these bear on trust relations. The findings of this study may find indirect support in other studies that document the fact that the absence of clear political and judicial institutions lead

businesses to resort to building trusting relations through other social mechanisms. For example, Xin & Pearce, (1996) report that businesses use informal connections as a substitute for a lack of effective formal institutional mechanisms in China.

Bengtsson (1993) reports that the so-called "Swedish system" (Åberg, 1962) is a trust-based institutional interpretation of economic governance. According to Bengtsson (1993) there is a general sense of cooperation between industry and government. This general sense of trust translates into cooperative relations within industry. Specifically, it makes the social context conducive to trust building. The implication is that the presence of a general atmosphere of generalized or "depersonalized" trust which may be largely institutionally determined becomes a form of social capital for collaborating firms.

Bengtsson's (1993) account is analogous to Ouchi's (1980) concept of clan control. Clan governance is essentially a normative process in which the members of a system come to adopt the norms of the larger system through socialization efforts. Members exercise self-control based on internalized values. Developed primarily in intra-firm settings, the clan concept has since been applied to interfirm relations (Barney & Ouchi, 1986).

In spite of the positive findings on the relationship between national level or third-image factors and trust, it is important to note that trust cannot be mandated. Thus, the fact that cooperation between organizations can and may be mandated by political fiat hardly ensures that trust will emerge in such relationships. Indeed, the evidence points to the fact that any formal attempt to intervene in dyadic relations may be counter productive to the development of relational norms and

trust for at least three main reasons.

First the existence of formal mechanisms for intervention in dyadic relations may be counter productive. As Taylor (1987: 168) observes "[T]he more the state intervenes...the more necessary it becomes, because positive altruism and voluntary cooperative behavior atrophy in the presence of the state and grows in its absence." In a related finding, Kollock (1994) concludes from an experimental study that in some situations, the existence of a formal regulatory system might work against the emergence of trust or worse still, it might result in the destruction of already existing trust in a group.

Second there may be limits to the effectiveness of legal remedies even if the canons of law are invoked as explanations for why people will not be opportunistic. Sitkin and Roth (1993) in fact, suggest that the very effectiveness of legal remedies may depend on the nature of a specific violation. The authors suggest that legal remedies can restore trust expectations when violations relate to a specific context, but where the violation involves expectations that are considered more fundamental, legalistic remedies may be inadequate. Of course, recourse to legal remedies may effectively signal the end of trust between the actors.

Finally the idea that formal constraints are generally more expensive to activate than informal constraints (Shapiro, 1987) suggests that coordination in exchange will be more efficient when formal institutional structures perform informal roles. As well, this will be the case when the presence of third parties is restricted to informal roles. In fact, informal constraints involve self-regulation by actors and the presence of self-monitoring reduces the need for third party monitoring (Hill,

1995).

In general, while institutional factors can potentially affect trust building, it may be more insightful for the present purposes to evaluate second-image or industry level factors in explaining dyadic or firm behavior. At a general level, organizational research has studied the influence of industry on firm behavior (e.g Porter, 1980). Specific effects of industry characteristics on internal firm behavior have also been studied. For example, Gordon (1991) argues that organizational cultures are influenced by the characteristics of the industry in which they operate.

Although the importance of industry factors have not been a subject of systematic theorizing on interfirm trust, there is reason to believe that sectoral differences may play an important role on how trust emerges and is sustained between partners in an alliance. In fact this realization has not been completely lost on research. For example, Ring & Van De Ven (1992) suggest that the nature of a specific industry context may determine the extent to which lower or higher levels of risk and trust are present.

Current insight may be largely conceptual, but it points consistently to the possibility that sector differences may be important in the way trust develops in an alliance. Indeed, the characteristics of a particular situation, including the nature of an industry may affect how trust emerges and is sustained in alliances. As Deutsch (1958: 279) observes:

"Mutual trust can occur even under circumstances where people involved are not overly concerned with each others welfare, provided that the characteristics of the situation are such as lead one to expect one's trust to be fulfilled."

The preceding discussion suggests that industry characteristics may facilitate or hinder trust building between partners in a strategic alliance. A number of relevant industry characteristics are examined next. These are: the degree of clustering or the geographic boundedness, age and industry homogeneity in terms of what sort of dominant values prevail in the industry.

The geographic boundedness or industry clustering may affect how trust develops. Where alliances are between partner in close proximity to each other, trust building may be comparatively easier than if they are widely dispersed. This for a number of reasons. First boundedness makes the salience of reputation effects greater. Thus, a partner who behaves opportunistically will be more likely to suffer the consequences. Indeed, Powell (1996) found that trust-based governance seems easy to sustain when firms are spatially clustered.

Second, it is more likely that partners will interact more frequently when they are in close proximity. That by itself should facilitate frequency of interaction. This could help trust building since there is a greater chance that attachment between people will be made when they interact frequently (Homans, 1950). Third in terms of communication, trust may be created by behavior that is often signaled symbolically. Since the power of signals fade with time and distance (Spence, 1984), proximity will increase the possibilities for trust building.

Finally proximity and frequency of interaction may be related to the amount of gift giving between partners. Theory suggests that the willingness to be in someone's debt helps the process of trust building (Ouchi, 1981). A person will be more willing to be indebted to his partner where chances of frequent interaction are

greater (Homans, 1950). This is because chances are that an opportunity will present itself for the debt to be repaid because partners interact frequently. Indeed, Lorenz (1988) found in his study of subcontracting in the French industry that firms cited geographic proximity as one factor that made it possible to develop personal contacts that are important for trust building.

The age of an industry may also affect how industry norms develop. Theories of product life cycles as well as industry life cycles (Stinchcombe, 1965) suggest that the emergence of trust may be dependent on certain industry factors including age. For example, it is suggested that the age of an industry may be an important factor in the sort of values that develop in that industry. Stinchcombe (1965) suggests that how interfirm disputes are resolved may depend on the specific values that an industry develops and these values may be directly related to the age of the industry. The age of an industry may affect trust building for other reasons.

An industry at an early age is often dominated by new or young firms that may be preoccupied with building legitimacy (Aldrich & Fiol, 1994), and the very staying power of young firms are unknown. For such an industry in general, there is hardly any shared history. As a result, perceptions of risk in entrepreneurial (young) industries are often highly subjective (Aldrich & Fiol, 1994). Since new ventures have no history, it is difficult to make accurate predictions about the future (Brophy, 1992). Thus, partners in new ventures may perceive the risks associated with partnering to be higher than in the case of more established industries. The presumption here is that under such circumstances, partners may be inclined to use more formal governance mechanisms or engage in counterproductive behaviors

such as closely monitoring each other.

In the end, young industries may have fewer shared norms than older more established ones. In new industries, "new vocabulary must be coined, new labels manufactured, and beliefs engendered in an industry with no natural history" (Aldrich & Fiol, 1994: 657). To the contrary, alliances between partners from older, more established industries may enjoy a measure of shared metaphors and world views (Huff, 1982). In sum, there may be some inherent factors associated with young industries that mitigate against trust building. But whether an industry is young or old, a crucial leveling factor may be the sort of structural links that prevails within the industry as well as the types of norms that are widely shared. Where collaboration is accepted as a legitimate strategy in an industry, one should expect greater trust than in those industries in which such a practice has less legitimacy.

Abrahamson & Fombrun's (1994) work on what they call interorganizational macro cultures can illuminate our understanding of how industry characteristics may aid trust building in alliances. The term interorganizational macro cultures is defined "as the relative idiosyncratic, organizational-related beliefs that are shared among top managers across organizations." (Abrahamson & Fombrun, 1994: 730). The authors use the concept to explain adaptive failures in industries.

Their argument is that industries develop homogeneity through the different kinds of value-added networks that link them together. Such homogeneity may be in terms of how firms process information about what are important issues facing them and the industry; how they evaluate the reputation of other firms who they think their competitors are, or who they think they get mutual benefits from.

Abrahamson & Fombrun (1994) stop short of discussing the performance implications of their theory for firms linked in homogeneous interfirm macro cultures, but they certainly recognize that possibility. The existence of interfirm homogeneity in industries has also been confirmed in other studies. For example, Spender (1989) identified such macro cultures in the foundry and liquid milk industry in Britain. Macro cultures have also been associated with US airlines (Marcus & Goodman, 1986).

Spender's (1989) work in particular throws additional light on how organizational level rationalities make their way into industry level rationalities, which in turn, affects organizations, both as individual entities and as collectives. One of his main conclusions is that firms in certain industries share what he calls similar "industry recipes." He defines a recipe as a set of shared ideas. According to Spender, a recipe reflects what managers think about their company rather than the industry, but firms in the same industry may share similar recipes. Spender (1989: 194) suggests that such shared recipes may become institutionalized if they find their way into "the language, dress, customs and rituals of an industry."

Related to trust building, language is especially important. The use of a common language and ritual may increase the extent to which partners identify with each other. We know from signal theory (Jervis, 1970; Spence, 1974) that partners who already share common language and similar ways of interpreting ambiguous information will understand each other better than those who do not. Since trust building depends on the creation of shared meanings (Zucker, 1986), similarity in rituals and language will help trust building.

A theory of interfirm trust can build on the interorganizational macro culture literature in several ways. First it can show how macro culture homogeneity affect coordination and boundary spanning activity between boundary role persons in an intra industry strategic alliance. For example, the use of similar information processing heuristics can help the process of building mutual understanding between key people. Theory suggests that when information is ambiguous, top managers will process such information in a sequence that involves attention, interpretation and action (Hambrick & Mason, 1984). Thus, the use of similar language and vocabulary, as well as similar ways of interpreting signals may all affect the process of trust building.

Second it can be demonstrated that the existence of shared similarities between firms is related to the presence of certain shared institutional ties that bind firms. For example, in a related work, Abrahamson & Fombrun (1992) point to the coordinating influence of industry-specific newspapers, magazines and newsletters. It is more likely for a homogenous industry to have strong industry associations than an industry that is less so. These and similar institutional ties may open up additional avenues for creating social and informational ties.

Finally the use of similar world views will help how firms deal with the tacit and implicit components of trust. Since trust is a social construct, it necessarily has tacit and psychological components (Robinson, 1996). The fulfilling of the psychological and tacit components of trust hinges, to some extent on subjective interpretations of another social entity's behavior. Such a process can be likened to bargaining in the absence of communication between the partners. This is

because partners may not always be certain about what its counterpart expects it to do beyond what may seem "obvious." The problem in this type of situation is what Schelling (1963: 71) refers to as "coordinating expectations."

According to Schelling, coordination of expectations is "analogous to the coordination of behavior when there is no communication." Schelling (1963) shows that the stable solution to the problem of co-ordinating expectations depends on finding or creating "saliencies" in the situation. A saliency is a unique or special element that is objective enough, and noticeable enough that both sides will notice it and can use it as a focus for their expectations. Certainly, the existence of shared language, rituals and above all interpretive schemes should help partners manage this aspect of trust building more than if partners have to develop these from the scratch.

Relatedly, some aspects of neo-institutional theory capture the role of sector-level factors in trust production. Indeed, this theory will suggest that besides providing routines, scripts, and schema, sector level factors affect trust building in dyads. The concept of "normative isomorphism" (DiMaggio & Powell, 1983) is relevant here. Normative isomorphism is defined by the authors as a process of homogenization among members in an industry. For example, conformity may be associated with professionalization. DiMaggio & Powell (1983) note that institutional processes often link third parties, governments and businesses together. Better yet, the process creates a professional network of people who may share similar values, dispositions and orientations. Thus where an industry is populated with employees of similar academic and disciplinary training, the probability of homogeneity in

outlook is likely to be higher. The biotechnology industry is one example that comes to mind. There is reason to believe that a substantial proportion of their employees and owners are either former university professors or researchers. For example, it has been noted that a large percentage of employees in new biotechnology firms (NBFs) are either scientists with Ph.D.s or other specialized training (Shan, Singh & Amburgey, 1991).

In summary, it is noted that unique industry characteristics may affect how trust emerges. But again, shared similarities by themselves are of no value unless partners actively perceive these similarities and act on the basis of these similarities in their interaction with their alliance counterparts. Incidentally, there is reason to believe that the determination of whether an industry is homogenous or not depends more on the subjective perceptions of managers than on some strictly determined objective criteria (Porac & Thomas, 1994).

EVALUATION

In one of the few empirical studies on the role of sectoral differences, Bengtsson (1993) concludes from his study of Swedish electric companies that trust is maintained in the industry through cultural norms of cooperation as well as through the industry's high entry barriers, which make it impossible for outsiders to exploit trust. In general terms, his study reveals that where members of an industry share norms of trustworthy behavior, trust prevails.

Bengtsson's (1993) findings touch not only on similarity between firms within an industry but also on some of the institution building mechanisms, specific to an industry that may indirectly affect trust building. He observes that managers and

technicians within specific firms tend to meet regularly at conferences. This is made possible by the existence of trade and professional associations. One can conjecture that such meetings become arenas for building personal ties between individuals from different firms as well as sources of third party referrals. Such forums also become indirect avenues for knowing about the reputation of other firms. All these may aid trust building (Zucker, 1986).

Browning, Bayer, & Shelter's (1995) study of cooperation in the semiconductor industry in the United States bears out some of the key contentions made here. The study of cooperation on a Texas-based research consortia, SEMATECH, demonstrated that a common perception of similar threats, use of common industry standards and similar ways of doing things were some of the coalescing factors in cooperation in the industry. These and similar factors are directly related to trust building.

So far, incisive focus on what the institutional context means for interfirm collaboration has not been critically explored. The review does suggest, however, that looking at the industry context will yield a greater understanding of both the incidence and coordination processes in alliances.

Chapter Summary

This chapter examined the role of institutional and sector level rationalities on dyadic relations and trust building. Although institutional level factors at a national level can affect dyadic relations, the real insight may be derived by focusing on the industry context effects.

CHAPTER 5

RELATIONSHIP-SPECIFIC BEHAVIORS (MICRO CONTEXT) AND TRUST

Chapter Summary

The chapter reviews the stream of research on the role of relationship context behaviors and their impact on trust building. The focus here is on those key behavioral contingencies upon which trust in economic exchange is built and sustained.

There is little doubt that relationship-specific behaviors are important for trust building and it has been suggested that trust is predicated on the existence of a relationship-specific skill or asset (Asanuna, 1989). In this sense, trust can be seen as an intangible asset jointly owned by two parties to a relationship. Thus, one can suggest that two partners may create trusting relations in the absence of a social structure if they engage in transactions over a period of time. As long as certain norms such as reciprocity and reliability develops between them overtime, trust can develop between such partners. Indeed, continuous exchange between the partners may lead to the emergence of a social structure subsequently and future trust building efforts may be tied to such an emergent structure.

There is a substantial amount of both conceptual and empirical literature that suggests that the presence of specific relationship context behaviors leads to trust. Generally categorized as "conditions of trust," (Butler, 1991) this literature has mainly focused on behavioral contingencies within the context of transactions. For example, openness in a relationship, loyalty, fairness, discreetness, consistency

have all been identified as conditions that lead to interpersonal trust (see Butler, 1990 for a review). Although much of the literature on conditions of trust has been in organizational settings as opposed to interorganizational relations, some findings have relevance to interfirm trust. Better yet, findings in the small, but emerging literature that focuses on interfirm trust tends to come to similar conclusions. A number of behavioral contingencies have been mentioned as crucial for trust building within the context of transactions.

First, for trust to develop, it is argued, partners must actively demonstrate interest in what is happening to each other. This has been called mutual orientation (Johanson & Mattson, 1987). This concept is similar to, but goes beyond, benevolence (Larzelere & Houston, 1980; Mayer, Davis & Schoorman, 1995). Benevolence is defined as the extent to which one partner is believed to want to do good to the other partner. It is the perception of a "positive orientation of one party for the other" (Mayer, Davis & Schoorman, 1995: 719). When one partner is perceived as "wanting to do good," it is likely that such a partner will enjoy the goodwill of its counterpart. Goodwill, in itself, has been determined as one factor that aids trust building (Ring & Van de Ven, 1992). Mutual orientation includes behaviors that allow each partner to learn about its counterpart as well as demonstrate good faith dealings. Mutual orientation can only be accomplished when partners are prepared to interact with each other so that they become aware of each other's interests. Partners also have to pay attention to these interests.

This whole process of familiarity with the relevant other is crucial because it demonstrates that partners are committed to each other, and reinforces the belief

that each partner will fulfil any commitments they might have made (Van de Ven & Walker, 1984). How partners handle misunderstandings can also be part of mutuality. The use of constructive responses such as "voice" can further improve the atmosphere for building trust in a relationship. Building this sort of orientation is not without costs and partners must devote resources to it (Larson, 1992).

Second, and relatedly, is the concept of behavioral transparency (Axelrod & Keohane, 1986). This relates to the frequency and reliability with which partners communicate. Where both partners develop a "transparency of executive processes" (Doz & Prahalad, 1988), the process of trust building will be enhanced. The use of structured mechanisms to facilitate communication between the partners will help this process (Parkhe, 1993). Frequent communication will help partners to learn about each other. Where the information exchanged is judged as reliable, partners will come to believe in each other's integrity and this is important for trust building (Ring & Van de Ven, 1992).

There is some empirical evidence to support some of these key assertions. For example, Currall & Judge (1995) found that open communication between managers led to trust between partners in an alliance. Similarly, Larson (1992) found that trust emerged when partners demonstrated interest in each other. However, there may be factors that constrain this openness. For example, it is known that some firms are more disposed to sharing information than others. Firms that maintain secrecy and restrict information flow internally may find it difficult to demonstrate behavioral transparency. Although the pathologies of secrecy have often been associated with large bureaucratic organizations (Stevenson, 1980)

there is reason to believe that businesses differ to the extent to which they are likely to engage in open behavior that is so crucial to trust building in an alliance. For example, Hamel (1991) showed that some firms in alliances are less willing to share information than others.

The preceding discussion suggests that communication is important for trust building and that warrants a more direct focus on the topic. Communication has been broadly defined in the interorganizational literature as the formal and informal sharing of meaningful and timely information between firms (Anderson & Narus, 1984). The informal dimension of communication is important in the context of trust building. It relates to such non-specific, peculiar and subjective indicators such as signals (Jervis, 1970; Spencer, 1974). A signal is defined as a statement or action that is designated to influence the receiver's image of the sender (Jervis, 1970). An accurate interpretation of signals may be vital and yet difficult to accomplish. Incidentally some cultures depend substantially on informal modes of communication. Tung (1991) observes that a failure to appreciate the importance of such non-verbal modes of communication may be a problem in American joint ventures in Asia.

Direct links have been made between trust and communication. But to date, the findings linking communication and trust remain mixed and inconclusive. Two general directions have been predicted. One, that trust leads to communication, specifically the quality of information shared. For example, Dwyer, Schurr & Oh (1987) suggest that trust causes communication. Similarly, Mohr & Nevi (1990) model trust as a determinant of communication between parties. These findings are

largely consistent with those of some other researchers (e.g. Zand, 1972). Then there are those who argue that communication leads to trust (e.g. Anderson, Lodish & Weitz, 1987; Currall & Judge, 1995).

Anderson & Narus, (1990) put both perspectives on a better footing when they predict reciprocal causation between communication and trust. In fact, there may be a feedback mechanism through which the emergence of trust (made possible by communication) enhances the nature and quality of information shared between the partners. Indeed, Uzzi (1996) found that the presence of trust facilitated the exchange of information that led to high performance in exchange relations. What is less clear is which mode of communication is preferable. In this electronic age, the tendency may be to rely on such media to co-ordinate a relationship. However, theory suggests that some communication forms are superior when the goal is to build understanding (Nohria & Eccles, 1993).

EVALUATION

Overall, there seems to be little disagreement about the importance of relationship-specific behaviors. It appears that what may be in doubt is their relative importance. There are those perspectives that suggest trust may be largely learned and re-enforced and so is largely a product of on-going interaction and discussion (e.g Butler, 1991; Powell, 1996; Anderson & Narus, 1990). In fact Powell (1996: 63) argues that "social conceptions of trust miss the extent to which cooperation (trust?) is buttressed by sustained contact, regular dialogue and constant monitoring." To the contrary, other researchers suggest that structural factors, social as well as institutional, are more important to explaining trust creation (e.g.

Granovetter, 1985; Zucker, 1986; Lane & Bachman, 1996).

In general, the "conditions of trust " literature (e.g. Deutsch, 1958; Butler, 1991; Currall & Judge, 1995) tends to focus on specific situational factors that lead to trust. What they all tap, is ultimately the degree to which partners are satisfied with an-ongoing relationship. By focusing on crucial relation-ship specific behaviors, this perspective brings greater realism to our understanding of how trust emerges, but more importantly how it is sustained. This perspective is not without its shortcomings.

Perhaps the most significant one is that situational theories of trust tend to be rather acontextual and that limits their theoretical usefulness. For one, this perspective tends to under-emphasize the history of the relationship. Structural factors are generally assumed away or downplayed. But that may be a serious omission especially where interest in on trust as a governance mechanism. For example, the history of the relationship including the structure of social relations, may affect the development of those conditions that some researchers argue, lead to trust. Understanding the symbolic actions that serve to signal trust (Collins, 1981; Hardy, Phillips & Lawrence, 1996) may be aided by existing shared meanings and similarities in language and social norms.

In discussing how trust arises and is sustained, it is important to include structural and relationship-specific factors. In fact, the importance of structural factors assumes greater importance once it is realized that the process of building trust can sometimes be a slow, painstaking and costly process (Lorenz, 1988; Sako, 1992; Shapiro, Cheraskin & Sheppard, 1992). Besides, it is accepted that trust is

fragile (Slovic, 1993; Hirschman, 1984). In their comparative study of trust building in Germany and Britain, Lane & Bachman (1996) documented the fact that interfirm trust rarely emerged solely on the basis of individual interaction between partners in an alliance.

The present research, much like others, assumes that situational, relationship specific behaviors are important to trust building. The point of departure here is the contention that a focus on relationship-specific behaviors to explain how interfirm trust is created and sustained is weak and inadequate for two main reasons. First because of the assumption that most of what happens here is rather subjective. For example, a partner's interpretation of behaviors may be constrained by its own prior assumptions about the trustworthiness of that partner. The line of social psychological literature on expectations and behaviors, specifically the self-fulfilling prophecy literature (Merton, 1957) suggests that one's initial expectations may distort their perceptions. Indeed, Deutsch (1958) found that an actor's initial perceptions of an opponent's trustworthiness exerted a reciprocal influence on his subsequent behavior.

Second and more important, it is argued that in view of the fragile nature of trust, the real deterrence mechanisms to opportunistic behavior may be socially and institutionally determined. In this case, it is suggested that on-going interactions help trust building but incorporating socially and institutionally based factors may be required to get a deeper understanding of why trust is sustained. In other words, it is suggested that to understand the main reason firms do not systematically violate trust one needs to go beyond the partnership context behaviors.

Chapter Summary

The preceding chapters reviewed the literature on interfirm trust. The review focused both on the structural and situational determinants of interfirm trust. The review included an evaluation of the literature. A number of additional general conceptual and methodological limitations can be identified. The following chapter focuses on these issues.

CHAPTER 6

GENERAL EVALUATION OF EXISTING PERSPECTIVES: SUMMARY OF CONCEPTUAL AND METHODOLOGICAL ISSUES

Chapter Summary

This chapter focuses on key conceptual and methodological limitations in the extant literature. The methodological limitations are generally viewed as pitfalls that needs to be avoided in research on interfirm trust. Ultimately, they serve as guideposts for the design of the present study.

CONCEPTUAL ISSUES

Thus far, a number of theoretical perspectives have been reviewed. The review touched on what various perspectives suggest are the sources of trust in business settings. Some shortcomings of the individual perspectives were discussed. Individually, the various perspectives offer us insight on the determinants of interfirm trust. Each essentially offers us bits of insight to construct what may be fragments of a theory of interfirm trust. Collectively, some inconsistent and mixed explanations emerge in some key areas.

For example, while the social norms perspective accepts the fact that institutional factors play a vital role in creating trust (Zucker, 1986; Shapiro, 1987), the structural embeddedness perspective argues that social context is an important determinant of trust at a dyadic level. Although game theoretic-models emphasize the importance of situational factors, reliance on stylized assumptions limits their

usefulness. There are a number of other shortcomings associated with existing research that needs to be reviewed. These include both conceptual and methodological issues. Since measurement issues are important, they are discussed in a separate section. A number of conceptual gaps in existing research are reviewed.

First in view of the fragmentary nature of existing theory, it is important that researchers create links between these perspectives. This is because while useful, fragmented views limit the scholarly usefulness of individual perspectives. There is the need for theory to integrate different perspectives and two general approaches can be used. One is to juxtapose competing explanations. This will be consistent with Durkheim's (1982) rules for social explanation. The rule suggests that ways of seeing should be juxtaposed so that they illuminate each other. The second strategy is to attempt to reconcile opposing views. It appears most of the existing research on interfirm trust has tended to adopt an "either or" approach to theory building on trust in business settings. This lack of integrative, multi-theoretic approach to theory building may be partly responsible for the lack of well-developed theoretical explanations of how trust-based regimes work. This is in spite of the fact that the imperatives for integrative theory building are evident. For example, Bradach & Eccles (1989: 110) express this sentiment when they write:

"Identifying the existence of trust and specifying how it is produced is a complicated task. Multiple subtle, mutually reinforcing mechanisms provide the basis for trust, norms of obligation, recurrent transactions and personal relations often overlap."

Second, there is a surprising failure to address the possibility that trust may

serve as nothing more than a façade for influence and control in business relations. This is important since power may be a structurally determined issue in the relationship. On the whole, the relationship between trust and power remains largely unexplored (for a notable exception, see Hardy et al, 1996 for a case-based study and Fox, 1974 for conceptual insight).

This omission is surprising given the fact that social exchange theories remain one of the most popular theories adopted to explain exchange in a variety of business settings. Social exchange theory as originally formulated (Thibaut & Kelly, 1959; Emerson, 1962; Blau, 1964, Cook & Emerson, 1978) emphasizes interdependence and certainly hints at the importance of structural power and how it affects behavior in exchange relationships. Classical exchange theories suggest that interdependent actors may use their power in exchange relations (Molm, 1990) and the centrality of interdependence for trust has been emphasized (Zand, 1972). In fact, there is reason to believe that trust and power may be obverse, that is "different sides of the same coin," so to say.

A direct link has been made between power symmetry and trust building. Ring & Van de Ven (1989) suggest that when partners to a deal stand in relative equal terms of the power that they can exercise, trust is likely to emerge. They suggest that power symmetry is important for trust development since that makes it likely that opportunistic behavior will be repaid, if not in kind then certainly in degree.

Relatedly, there has been some recognition of the role of power in exchange relationships. For example, Frazier (1983) notes that power reflects one firm's

potential for influence on another firm's beliefs, attitudes, and behavior. This definition of power is interesting for one particular reason. Trust has been conceptualized in terms of beliefs, attitudes and behaviors (Hosmer, 1995; Currall & Judge, 1995) and this partly reflects the definition in use in the present research. The fact that power can be used to influence these dimensions suggests that the link between the two warrants greater attention than it has gotten so far. Anderson & Narus (1990) found that firms use influence (power) in channel relationships. Specifically, they suggest that power is often used to induce and influence the other partner. Indeed, their study and those of other researchers (e.g. Kelly & Thibaut, 1978; Frazier, 1983) confirm the notion that power, in the form of behavioral control is often present in interfirm relations.

Although insightful, what these perspectives miss in relation to trust and power is the concurrent consideration of trust and power. The fact that trust can be a front for power has been recognized (Granovetter, 1985). Granovetter (1985: 501) notes that a "balanced and symmetrical argument requires attention be paid to power in "market" relations and social connections within firms." The most explicit statement on the possibility of trust being a front for power comes from Fox (1974). He writes: "We've got to trust them" means in fact: "We don't trust them but feel constrained to submit to their discretion." This simply describes, of course, a power relationship." (Fox, 1974 cited in Hardy, Phillips & Lawrence, 1996: 5). Ultimately, the concern in the context of a theory of interfirm trust is to tap when power is a "front for trust." The present study explicitly addresses this issue and in so doing fills an important gap.

Third, there is a lack of focus on fundamental issues such as what the nature of a particular exchange means for trust building. Specifically, the degree of risk or uncertainty inherent in the relationship may affect how trust emerges although it is generally recognized that some risk must be present for trust to be tested (Dasgupta, 1988. See Inkpen & Currall, 1997 for an exception). The present research addresses this issue. Besides filling a gap in existing research, a focus on the structure of an exchange and how it relates to trust amounts to tapping at trust from yet another angle. Given the fuzziness of the construct, tapping at multiple sources to explain the concept of trust is important and desirable.

Fourth, the continued use of systemic theories such as social exchange theories and game theory to explain trust means that partner perceptions, preferences and resources are simply assumed away. That, however, may be at the expense of building realistic theories of interfirm trust. Incidentally, it has been noted that management theories tend to lack realism and balance (Ghoshal & Moran, 1996). Partners to an exchange come to the relationship with some perceptions about the trustworthiness of their counterpart. Previous reviews also touched on the implication of this for trust building. It is therefore important to recognize the individual perceptions, preferences and resources that partners bring to the dyad.

Fifth, the lack of direct measurement of trust in several studies makes it rather difficult to advance knowledge on the antecedents of trust in business settings. The result is that accounts of the presence of trust in business settings continues to be grounded more in anecdotes than in sound empirical conclusions. Most of the studies in this category are without a doubt, well-grounded conceptually

and methodologically. In most cases, determining either association, causality and temporal precedence of key constructs is virtually impossible when trust is not directly measured.

There is yet another danger of omitting direct measurement of trust. This is the danger of conflating the process with the outcome. More directly, the distinction between trust and cooperation will remain blurred or confused. While proxies for trust can be used, a preferred thing is to measure the construct directly. An increasing number of studies are beginning to do just that and the present effort falls in the later category. Finally, are a number of methodological shortcomings associated with current research on trust in business settings. Since these are important, they are addressed in a separate section below.

METHODOLOGICAL ISSUES/PITFALLS TO AVOID

There are a number of methodological issues that needs to be addressed in research on interfirm trust. The present research reviews key shortcomings with current research and uses these as a guide in designing the present study.

(1) Experimental Studies/Rational, Analytical Models and Trust

A number of important contributions have been made to our understanding of the concept of trust through the use of experimental studies. For example Deutsch's (1958) experimental study has made important contributions to our understanding of the importance of situational factors. He found that cooperation (which he equates with trust) tended to be low when the situation made it difficult for parties to learn about each other.

A related methodological approach has been the use of game-theoretic or rational models to study trust. Indeed, theoretical advances have been made to our understanding of trust with this analytical tool by a number of researchers. For example, Kreps (1990) demonstrated how reputation is most effective when it is embedded in a network of trading partners. Milgrom & Roberts (1992) note that a failure to honor trust between two self-interested parties will yield a lower benefit for both parties. Axelrod (1984) demonstrates from his description of "live and let live" system that prevailed during the trench warfare between allied armies and the Germans during World War I what role trust can play even between avowed enemies. Dasgupta (1988) notes that incentives may be important for sustaining trust.

However, most rational perspectives have been criticized for dwelling on what Williamson (1993) calls the "relentless logic of calculativeness." In other words, it is a utility maximizing assumption that drives trustworthy behavior. The most important shortcoming associated with rational models of trust may be the excessive reliance on stylized assumptions. The result is that the approach treats transactions as if they had no history. Like experimental studies, the use of modeling techniques restrict the range of action and so the tendency will be for actors to act strategically. Indeed as Husted (1989) observed, this realization may be why some researchers speak of "trust-like behavior" instead of trust when they look at trust through the rational lens.

The above discussion can be linked to the broader issue of what is the most appropriate method for studying trust. Although mixed approaches can and have

been used and seem preferable, two distinct possibilities exist and these are briefly discussed.

First are experimental studies. These often take place in laboratories. For example, Andaleeb's, (1989) doctoral dissertation was an experimental study of trust in marketing channels. Deutsch (1958) much referenced piece was also a laboratory experiment. Game-theoretic models of trust often employ mixed-motive laboratory games (e.g. Axelrod, 1984; Schelling, 1978). Findings from laboratory studies have contributed to our understanding of trust. Generally, these studies tap at situational issues and this is important. Kramer (1996: 239) observes that since experimental studies of trust allow "few degrees of freedom for individuals to express more nuance and social modes of trust behavior, the fit between trust theory and data in experiments is quite good." But this method's greatest strength may be its Achilles heel.

Laboratory studies of trust sacrifice external validity for internal validity. More important, the decision structure of such simple games make for greater calculative and strategic behavior by actors. Although such studies attempt to create a context, such situations are very restricted. To relax these restrictive conditions, rational methods tend to rely on a set of stylized assumptions to build theory, but squaring such theory with reality is another matter. In addition, the tendency to ignore the prior history of the relationship in experimental situations is a serious handicap. As Krackhardt (1992: 219) suggests, "while one can induce short-term affective states and study "liking" in a laboratory situation, the study of *philos*, must be relegated to the field."

Second, survey based methods can be used (following e.g. Zaheer & Venkatraman, 1995; Anderson & Narus, 1990). Survey based research overcomes some of the key weaknesses of laboratory experiments, but it has its own limitations. For example, placed within the broader context of ontology, the researcher already defines the universe of responses. This is a general limitation of most deductive research.

The third method is to rely on inductive approaches such as case-based qualitative methods. Such a method will have greater external validity especially where data is generated in comparatively unstructured fashion. A rich and detailed picture can be portrayed. But this method is not without its limitations. The most specific weakness is that there exists several threats to internal validity. Kramer (1996) notes three key threats to internal validity. First, interpretations of accounts may be biased in line with a priori assumptions and expectations. Second, results may be biased by the way the researcher frames his or her questions. Finally, recalls and reconstruction may be biased by cognitive process and these are hard to decipher in a particular study. Kramer (1996: 239) recommends a combination of survey and narrative approaches so that "qualitative impressions and quantitative results can be triangulated." These insights are used to guide the design of the present study.

3) Measuring Instruments

There are a number of existing instruments for measuring trust in business settings and so only the more popular and common ones are discussed. As well, only those instruments whose questionnaire items are available are reviewed since

attention is directed, in part, on the wordings of these questionnaires. The review reveals that a substantial amount of research on interfirm trust has focused on marketing channel members (instruments for measuring intra organizational trust is largely ignored. See Butler, 1991 for a review of these instruments).

A number of studies have tended to draw on the original instrument developed and used by Anderson & Narus (1986). Trust was measured by a three item, 7-point Likert scale. This instrument has been used in other studies (e.g. Anderson & Narus, 1990; Heide & John, 1990; Zaheer & Venkatraman 1995). Reliability scores for this instrument have been good. For example, Zaheer & Venkatraman (1995) report an alpha of 0.81. The problem with this and similar instrumentation is not their reliability but their validity. Specifically, the item wordings do little to address social desirability issues. For example, a key item in the original measure and its adapted versions use the word "trust." In Anderson & Narus (1990) the first item reads: "Based upon your past and present experience, how would you characterize the level of trust your company has in its working relationship with Firm X."

One general criticism that can be leveled against all instruments using the word "trust" in the questionnaire is that they do little to control for the social desirability or negative affectivity of respondents. But negative affectivity has been mentioned as a possible confound in other evaluation (Clark & Tellegen, 1988). At the very least, instruments using the word trust should have endeavored to ascertain or control for methodological nuisances. For example, the insertion of at least one mistrust item to break up acquiescence response sets would be helpful.

Beyond that, research has documented that individuals may have the propensity to respond negatively irrespective of the situation. Watson, Pennebaker & Folger (1987) suggest that research tries to assess the negative affectivity of respondents whenever possible. This because in measuring attitudinal variables, negative affectivity may pollute the pure relationship between independent and dependent variables. Since trust is an attitudinal variable, this may be important. Kim & Mauborge's (1991) study address this problem. The researchers use the word trust, but proceeded to control for negative affectivity levels.

Cummings & Bromiley's (1996) trust measure is an improvement on measures of interorganizational trust. First, they avoid the use of the word "trust" preferring instead to tap the construct through several latent variables. Second, and more important, their questionnaire items tap at both affective, cognitive and intended states of respondents. Affect deals with how people feel, cognition with how they think and intent refers to how they think they will behave in the future. This is consistent with calls for researchers to measure these three states when tapping constructs that reflect attitudes (Creeds, Fabriger & Petty, 1994).

Currall & Judge's (1995) measure of trust between venture managers, is consistent with those of Cummings & Bromiley (1996). Using Ajzen & Fishbein's (1980) theory of reasoned action, Currall & Judge (1995) develop an instrument to measure trust between boundary role persons. Used appropriately, this instrument, along with Cummings & Bromiley (1996) are improvements on existing instruments.

(4)Level of Analysis Issues

The present research focuses on interorganizational trust. Specifically, trust

between two partners in an alliance. Thus, this research categorizes interfirm trust as a phenomenon, *sui generis*. This must be differentiated from interpersonal trust, in which case two individuals are in a relationship for themselves. In interfirm trust, it is important to remember that trust is conceptualized at the firm level. Thus the unit of analysis is not the individual, but the relationship between two firms. Unless both theory and research respects this distinction, one risks developing mis-specified models.

Researchers have at least two options in deciding how to measure trust. First, and perhaps preferable, multiple respondents should be used. In terms of analysis, data aggregation issues arise. In that case, the appropriate thing to do is to aggregate the scores of a number of managers of each firm to get at an organizational level score. This will not only be consistent with recent calls for the use of multiple informants (Bagozzi & Phillips, 1990) in organizational research where large firms make up the sample, it will help reduce model mis-specification.

The second and popular approach is to use single, key informants to measure interfirm trust. In principle, this is acceptable, especially when the sample is drawn from small firms. It has been argued that considering the critical role of key individuals, trust between such individuals may be taken as representative of interfirm trust. Indeed research suggests that trust between joint venture managers substantially affects what happens at an interfirm level (Ring & Van de Ven, 1994; Bodaracco, 1991).

Chapter summary

The main conceptual and methodological shortcomings identified in the chapter are

used as guide posts in the design of the present research.

PART THREE

RESEARCH DESIGN & METHODOLOGY

CHAPTER 7

THEORY AND CONCEPTUAL FRAMEWORK

Chapter Summary

This chapter presents the theory and conceptual framework that guides this study. Preceding chapters reviewed key theoretical and empirical studies on the factors that may give rise to and sustain trust in interorganizational relations. The chapter expands on the theoretical background in preceding chapters by re-examining key constructs and their relationships within the context of the present study. Key variables and the interrelationships between them are made. The framework will identify how key variables, both individually and collectively, explain the conditions that give rise to and sustain trust in interfirm relations. The hypotheses of the study are presented as the chapter unfolds. After a brief overview, the chapter devotes separate sections to specific elements of the framework.

OVERVIEW & RECAPITULATION

The general domain of the present research is the governance of exchange. Specifically, the research focuses on the dynamics of trust in business settings. To recap some of the key points made earlier, trust as a governance mechanism works through the partner's reflexive self-monitoring as well as social control. As noted elsewhere in this research, a similar logic is expressed at an interpersonal level in Triandis's (1980) theory of interpersonal behavior. A major statement of Triandis's

model is that social norms, affect and perceived consequences influence behavioral intentions which in turn influence behavior. The factors and structures that ensure that partners engage in self-monitoring or that social control becomes effective should ensure that trust once created is sustained.

The framework that guides the present research looks at both structural and behavioral variables associated with alliances. The review of the relevant literature presented in earlier chapters revealed a number of existing gaps in our understanding of the dynamics of trust in strategic alliances. Indeed, despite the large literature on trust in several disciplines, very few tested theories exist on the conditions that promote and sustain trust in economic exchange. A number of neglected and unresolved issues are addressed in this research.

(1) Although the need for combining structural and behavioral issues to explain interorganizational relations has been recognized (e.g. Heide & Miner, 1992) there is presently a dearth of such studies. By combining both structural and behavioral variables, the present study avoids a premature elevation of one set of explanatory variables to the top of the theoretical pyramid.

(2) The effects of contextual factors on alliances generally and trust in particular has gotten scant research attention. This in spite of the fact that institutional theories will suggest that context has an effect on partner behavior. In the present study, the extent to which partners perceive collaboration as important within their industries is included as one predictor of partner behavior. The presumption is that there is likely to be greater self-monitoring and social control in situations where people

think that a particular practice, collaboration in this case, is important and legitimate than when collaboration is less important.

(3) The specific nature of a relationship has important implications for the choice of mode of governance and partner behavior. Specifically, the degree of uncertainty that partners perceive may affect how they behave. Besides, partner perceptions of what the relationship means in terms of how long the partners will stay together may affect behaviors. Game-theoretic models have examined this issue but there is presently a dearth of studies that apply empirical field tests of these and similar issues.

(4) Although trust has social and psychological components, there is as yet no systematic consideration of the psychological component of trust. Again, this recognition has not been completely lost on research. If trust, and its perception, depends to some extent on the subjective interpretation of another social actor's behavior, (Luhmann, 1979) then it is important to incorporate micro behavioral explanations into trust between partners.

(5) The reliance on systemic level theories such as social exchange and game theory in alliance research means that actor preferences, perceptions and individual characteristics have largely been assumed away. The present study incorporates some of these dimensions.

(6) Although trust may be nothing more than a front for power (Fox, 1974) few studies have examined this despite the recognition. At least one call has been made to take this factor into consideration in trust research (Butler, 1990).

(7) The effect of time on trust development is crucial but how researchers deal with this issue have not always been explicitly stated. But since relational phenomena are often process-based and temporarily ordered, it is important to account for this even in cross-sectional studies.

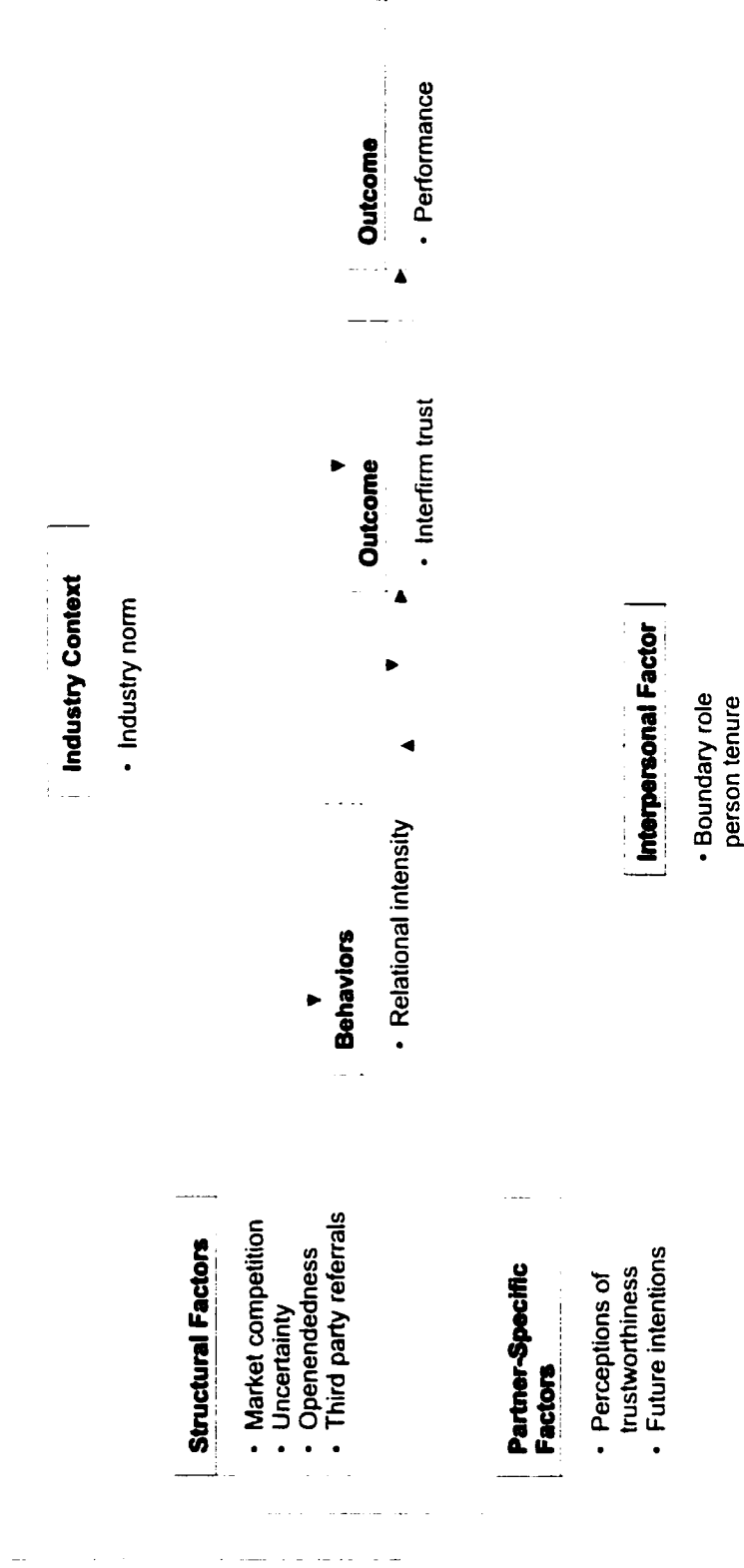
ORGANIZATION OF SECTION

The rest of this section is organized as follows. The first section taps at structural sources of trust in alliances. These are the nature of uncertainty associated with the relationship, the extent to which the relationship can be regarded as open-ended, the partner's future intentions and the role of third party referrals on trust in the relationship.

The second set of variables focus on the micro-context. These include the role of partner expectations on subsequent behavior as well as the intensity of the relationship and its effect on trust. The third set of variables relate to the effect of exogenous, industry related factors on trust in the dyad. The relationship between trust and performance is explored in the concluding section.

Figure 2 presents a model of interfirm trust incorporating the dimensions mentioned above in schematic form. It includes (1) the exchange structure (2) the interactional sequence between partners (3) partner-specific factors and (4) a specification of factors exogenous to the dyad but deemed relevant for explaining how trust may emerge in an alliance and (5) the relationship between trust and performance.

Figure 2
A Model of Structural and Behavioral Determinants of Interfirm Trust



STRUCTURAL FACTORS & TRUST

Third Parties as intermediaries to trust

A key path through which trust is sustained is the self-monitoring that its presence engenders. In other cases, social control deters actors from engaging in opportunistic behavior thereby preserving trust in dyadic relations (Ring & Van de Ven, 1992; Kreps, 1990). This thinking is generally in line with the core ideas in economic sociology which suggest that the embeddedness of transactions in social structures promotes trust (Granovetter, 1985; Zukin & DiMaggio, 1990). The logic is that the fear of loss of reputation and future business will make actors behave in a trustworthy manner since a failure to do so will have adverse repercussions. As Macaulay (1963: 64) puts it, self-monitoring occurs because "not only do particular business units in a given exchange want to deal with each other again, they also want to deal with other business units in the future." Thus, the fear of loss of friendship, reputation, future business all ensure that the homily "honesty is the best policy" is respected, so goes the argument.

However, people must know of opportunistic behavior so it is punished and the presence of a social structure ensures that the links between the fear of consequences of opportunistic behavior and present behavior hold. Most importantly, it is assumed that violations are viewed by third parties, as impartial arbiters, with equal gravity. Of course, social control presumes a minimum level of rationality on the part of actors. That is, actors value the loss of reputation, future

business and possible ostracism that bad faith behavior will bring to them in future. Using third parties as intermediaries to trust is one such way to build a social structure (Uzzi, 1994).

There is substantial evidence in the literature on the important role of third parties on trust building between dyadic partners in a relationship (Granovetter, 1985; 1992; Ring & Van de Ven, 1992; Coleman, 1993; Uzzi, 1994). In general, it is suggested that where partners place reliance on referrals from third parties at the time of formation of the alliance, such knowledge will affect behavior in the relationship. The proposition is that third party referrals will positively affect how trust evolves in a dyadic relationship. Coleman (1990) suggests that where dyadic actors rely on the integrity of third parties to choose and deal with a counterpart, such third parties effectively become "intermediaries to trust." In the later case, the presumption is that such intermediaries are respected by those in the dyadic relationship. Although such situations are possible, the influence of third parties on trust between dyadic partners is largely based on the assumption that these third parties may become future business partners or are very well respected by the actors.

Building on recent theoretical and empirical advances (e.g. Podolny, 1990, Uzzi, 1994) we now understand how the social structure that undergirds the embeddedness perspective emerges. The key insight is that third party referrals are an important source for the emergence of some form of social structure. Admittedly, referrals can be from different sources. For example, mutual friends of the partners

can be a source of information and such third parties may not be in the same business. In other cases, governments or their agents may be a source of referral especially in cross border situations. For example, the Canadian government is known to actively promote alliances between US and Canadian firms and in that respect may serve as a source of referral. The idea is that knowing the referral source may give clues to the effectiveness of third party presence on dyadic relations, including how trust emerges. Thus, recent work on this issue can be extended by specifying types of third parties and demonstrating how social control and trust varies across such settings. In general, any class of third parties and the network structures they produce must be of a certain type for social control and self regulation to be invoked.

Although implied in most conceptualizations of what makes up a social structure, third parties need not be mutual friends of the actors for them to engender some form of social control. Of course, when strong friendship ties link dyads, one should expect greater trust. For example, the study on diamond merchants in New York City demonstrates the value of dense linkages for trust building at an interorganizational level. With religious and cross-marital ties, the salience of reputation effects in general tended to be very high among the diamond merchants (Ben-Porath, 1980). In most economic exchange however, such close ties that engender high degrees of self-monitoring and social control may not be present. In general settings where partnerships are between firms that may not be geographically clustered or share short social distances, there is reason to suggest

that links to industry related third parties will positively relate to trust. Such third parties include, but are not limited to common customers, industry executives, consultants and ex-employees. Referral networks built on such industry-related third parties should positively influence trust for a number of reasons.

First, one should expect that actors place greater weight on referrals from industry sources than from other sources. Since firms in the same industry tend to share common frames of reference (Breyer & Shelter, 1995), the existence of short social distances mean that people accept the recommendations of others as valid and reflective of the sort of evaluations they would have made when presented with the opportunity. Thus, one should see greater initial goodwill toward a counterpart on the basis of such referrals and initial goodwill encourages partners to take that crucial initial leap of faith that is so crucial for trust building (Ring & Van de Ven, 1994).

Second, the flow of information among industry actors is likely to be great. The fact is, it is important for any adverse information on a parties's untrustworthy behavior to be known. However, as Raub & Weesie (1990) suggest, not all people have the incentive to report untrustworthy behavior on the part of their partners. In the case of industry related actors, there is a compelling reason to inform others in the industry of bad faith behavior on the part of an actor. Otherwise, one may get stuck with another person's "scoundrel" at another time, so to say.

Finally, since an industry is often characterized by shared metaphors (Huff, 1982) other firms in the industry are likely to have a fairly common understanding

of violations. The logic of social control is that potential future partners in the industry accept that a particular actor has shown bad faith in business dealings and so deserves ostracism. This is important because the evidence suggests that violations or demonstrations of bad faith are often interpreted differently by third parties. For example, Ramseyer (1991) notes that not all violations of trust between actors are viewed with equal gravity and that certain violations may, in fact, be excusable by third parties. Thus, it becomes important that a certain amount of shared construction of meaning exist not only between the dyadic partners but among all future potential partners. In general, the presence of industry-associated intermediaries ensures that violations are known, viewed with equal gravity and punished. Thus, as long as a partner does not engage in flagrant abuse of its counterpart's trust during the course of the exchange, the presence of important intermediaries to trust can have a positive effect on alliance relations. The evidence and discussion suggests that,

Hypothesis 1 [H1]. Industry-related third party referrals will be positively associated with trust between partners, *ceteris paribus*.

Uncertainty and Trust

The relationship between the risk and trust associated with a particular exchange and trust is well known (Dasgupta, 1988; Zand, 1972; Deutsch, 1962). So much that trust has been equated with a readiness to take risk (Zand, 1972).

Indeed, the point that some level of risk must be present so that there is a test of trust has been revealingly made (Dasgupta, 1988; Kelly & Thibaut, 1978).

There is risk when a decision maker is able to estimate the likelihood of certain outcomes and there is uncertainty when actors are neither able to assess reasonable probabilities nor have certainty in decision making. In general, uncertainty is more problematic than risk and the present focus is on uncertainty although both risk and uncertainty are often present in economic exchange. Uncertainty arises primarily because actors have neither certainty nor the ability to assign reasonable probabilities to events. There is also uncertainty in strategic alliances because actors cannot always predict both the behavior of their counterparts and the outcomes of the collaboration. In scientific research in particular, uncertainty will tend to be quite high.

Beyond these initial insights, there is reason to suggest that the link between uncertainty and trust warrants a more critical look. Thus far, findings on this issue remain mixed and inconclusive. For example, Inkpen & Currall (1997), found in a related study that risk relates negatively to trust, suggesting that the higher the risk, the less likely that a dyadic relationship will have trust. To the contrary, Kollock (1994) found some evidence to suggest that trust in an exchange situation was greater in the presence of high uncertainty and other researchers have made similar propositions (e.g. Siamwalla, 1978).

These conflicting conclusions are not surprising when one considers the fact that the trust-uncertainty relationship actually presents a paradox. Uncertainty

makes trust necessary and yet intuitively, actors should be less trusting in situations of high uncertainty. This paradox may be resolved by more closely examining the different conceptualizations of uncertainty and examining the pathways through which uncertainty relates to trust. Relatedly, one interesting proposition is exploring the possibility of a non-linear relationships between trust and uncertainty. These issues are discussed in turn.

First, it is necessary to clearly specify the type of uncertainty and to some extent the risk that we are discussing. The type uncertainty as much as risk associated with the main theoretical contributions (e.g. Zand, Dasgupta, 1988), seem to be largely coterminous with those that arise because of information asymmetry between the partners and the fact that such information asymmetry can leave room for opportunism and moral hazard (Williamson, 1975; Akerlof, 1970).

In strategic alliances, the information asymmetries arise because partners are unable to tell conclusively how trustworthy their counterparts are. Most importantly, partners are less certain of the quality of cooperation that will be forthcoming in relational exchanges. This type of uncertainty can be termed *normative* to differentiate this from another type of uncertainty that is largely unrelated to the intentions and motives of the transacting parties. There are a variety of institutional arrangements that are often used to reduce normative uncertainty and risk. The use of legal contracts is one of them.

Indeed, one should expect that in the face of high normative uncertainty and risk, partners would take actions ex-ante to protect themselves. Such actions will

be largely consistent with the recommendations from a transaction cost theory perspective (Williamson, 1985). In other cases, partners can deal only with people they know well as the economic sociology paradigm suggests (Granovetter, 1985). In the end, it is impossible to completely protect oneself from any type of uncertainty and risk or deal only with people with whom we have complete knowledge and familiarity. One needs to add, parenthetically, that knowing someone very well hardly guarantees their trustworthiness over time. Thus, one can suggest that in the absence of extensive countervailing measures or ex-ante orderings that reduce this type of risk and uncertainty, the potential for opportunism exists in all exchange situations.

There is yet another source of uncertainty that is relevant to how trust emerges. This is uncertainty that relates specifically to the relationship, but unrelated to the intentions and motives of the partners. Such uncertainty and risk may be termed *venture related*. This categorization is largely consistent with the definition of risk advanced by Mayer, Davis & Schoorman's (1995: 726). They define risk as the "perception of risk that involves the trustor's belief about the likelihoods of gains or losses outside of the consideration that involve the relationship with the particular trustee." In a sense, Mayer et al. (1995) made an important conceptual advance and clarification in distinguishing this type of risk from earlier conceptualizations and that same thinking may be applied to uncertainty. Although uncertainty and risk can be conceptualized as a combination of normative and venture-related factors (e.g. Sitkin & Pablo, 1992), the more relevant risk and

uncertainty in an alliance, it would seem, is venture related. Such uncertainty may be ascertained by the partner's assessment of the predictability of the future investments and payoffs from the relationship.

No matter what type of uncertainty partners face, there is reason to suggest that greater uncertainty should lead to greater trust in an exchange relationship. The fact is higher levels of uncertainty and risk mean the *the need for trust* is greater. Barney & Hansen (1993) in fact suggest that under high uncertain conditions only high trust is appropriate as a governance mechanism. They write evocatively: "[T]he level of vulnerability in some economic exchanges may be greater than the ability of any standard governance devices to protect against the threat of opportunism. The only way to pursue these exchanges is through strong form trustworthiness." Madhok (1995) suggests that trust is particularly important in uncertain situations. These insights find empirical support in a study by Kollock (1994) in which the author found that compared to low uncertain conditions, trust for a counterpart was higher under high uncertain conditions. The fact is under high uncertainty, partners may feel constrained to trust, even if reluctantly because the alternative is to distrust. The presumption is that partners with a minimum amount of rationality will realize that distrust is a more costly alternative under high uncertainty conditions. In a sense, a perception of uncertainty calls forth trust inducing behaviors.

An important pathway through which uncertainty produces trust may be primarily through the type of behaviors that uncertainty elicits, even if reluctantly. Thus, while uncertainty may not automatically produce trust, the types of actions

that it engenders may generate trust. For example, in uncertain situations, the need to stay close to one another is greater. That means partners will interact and exchange information more frequently and such behaviors are important for the development of trust (Johnson & Matteson, 1987; Larson, 1992). The alternative, it would seem, is to govern the relationship with distrust which is more costly. Indeed, in such instances, Luhmann's (1979) observation that distrust is more costly than trust apply. The discussion generally suggests that it is possible for both a direct and indirect relationship to exist between uncertainty and trust and some research evidence seems to confirm this. For example, Noordewier, John & Nevin (1990) found that greater involvement between partners under high normative risk situations improved relationships.

In summary, one would expect some direct relationship between uncertainty and trust. At the same time, the presence of frequent interaction should lead to greater trust. Of course, other explanations can be advanced for the link between uncertainty and trust. One plausible one is that under high uncertain situations, people are likely to be more concerned about the known reputations of their counterparts (Kollock, 1994). In a sense, they may self-select trustworthy partners. Thus, the emergence of trust may be ascribed more to who is selected rather than to the systemic behaviors traceable to the partners during the exchange process. The caveat notwithstanding, the discussion and evidence suggests that:

Hypothesis 2a [H2a]. Venture related uncertainty will be positively associated with trust in a strategic alliance.

Hypothesis 2b [H2b]. Relational intensity partially mediates the positive relationship between uncertainty and trust such that some of the effects of uncertainty on trust will be due to the presence of frequent interaction between the partners.

The preceding discussion points to yet another interesting, but yet unexplored possibility. Specifically, insight from existing research points to the possibility of a non-linear relationship between trust and uncertainty. Three specific conceptual and empirical findings provide the warrant for this proposition. First it is suggested that some level of uncertainty and risk is necessary for trust (Dasgupta, 1988; Kollock, 1994). At the same time, and consistent with the first insight, the presence of very low risk and uncertainty makes it less likely that trust will be needed. For example, where partners believe that the risks associated with the relationship are pretty low, there is less incentive to get involved and invest in relational assets. Popkin (1981) offers the classical example of the market for rice. The quality of rice is very easily ascertained and hence there is very little uncertainty and risk and so the need for trust is low. There are after all, costs to trust building (Sako, 1992), and so unless it is needed, there may be no incentive to produce it. In other cases, partners may feel a lesser need to monitor their counterparts when

they think the risk and uncertainty associated with the relationship are low while in other cases actors may be less motivated to interact frequently.

The third and related finding is that while high trust is required in highly uncertain situations (Barney & Hansen, 1994) trust may simply not emerge where uncertainty is too high and the risk too large (Kollock, 1994). In such cases, speculation suggests that actors preoccupation with possible losses will make them less willing to take those leaps of faith required for trust building. In other cases, partners in exchange situations of very high risk and uncertainty may resort to monitoring the relationship excessively. While some monitoring is good for any exchange relationship, too much monitoring will destroy goodwill between the partners.

In summary, it is noted that low uncertain conditions may bring forth low levels of trust and the need for trust rises as uncertainty rises, up to a certain point beyond which trust may simply be impossible to achieve, or where it exists, may begin to reduce overtime. The research and discussion suggests that an inverted U-shaped relationship may, if fact, exist between uncertainty and trust. More formally, it is proposed that,

Hypothesis 2c [H2c]. There is an inverted U-shaped curvilinear relationship between uncertainty and trust such that the relationship between trust and uncertainty is positive up to a point beyond which greater uncertainty will lead to reduced trust in the relationship.

Open-endedness & Trust

The effectiveness of trust as a governance mechanism may depend to some extent on how partners perceive the relationship. Specifically, it is suggested that where partners believe that a current relationship signals a long term commitment to an exchange partner, one should see a positive effect of such thinking on behavior in a current relationship. More specifically, it is proposed that an open-ended relationship between alliance partners will be positively associated with trust in the alliance. An open-ended relationship exists where partners indicate their intent and belief that the relationship is for the long haul. Thus, open-endedness has more to do with the partner's perceptions than the mere time-dependent structure of the exchange.

Although a perception, open-endedness has the same effect as a time-dependent structural relationship since it extends the time horizon of the relationship. In game theoretic terms, the time horizon of an open-ended relationship is considered long. The time horizon of a relationship is the length of time across which partners are expected to interact together (Axelrod, 1984). This conceptualization is fairly specific and does not necessarily imply that the relationship has an indeterminate point (Heide & Miner, 1992; Tesler, 1980).

Deciding that an alliance is a one time affair does not preclude future relations, but the idea is that with an open-ended relationship, the behavior of partners would tend to be different. The logic here is that the possibilities for future

deals, expressed as part of a current deal, influences partner behavior in an on-going alliance. For example, an expression of intent to engage in future relations with the same partner has the effect of making an agreement open-ended because a commitment for future relations is regarded as an integral part of the agreement that governs a current relationship. What this does is to extend the time horizon or time across which partners are going to stay together. Research suggests that a long time horizon is beneficial for cooperation in general (Axelrod, 1984; Milgrom & Roberts, 1990). This may happen for two main reasons.

First, an open-ended relationship by definition makes the future equally important. The possibility of partners remaining together for long periods, including the possibility of repeat relations makes the future valued and reduces the incentive to discount future payoffs. In fact, a long time horizon is useless if partners do not value future payoffs from the relationship. Since actors in similar situations discount future benefits (Axelrod, 1984; Tucker, 1991), any thing that makes future benefits important now should promote trustworthy behavior on the part of partners.

Assuming a minimum amount of rationality on the part of partners, trust emerges in a situation where partners perceive the relationship to last over a long period of time because no partner will want to jeopardize both present exchange and future possibilities. The presumption is that opportunistic behavior at one time will be repaid, if not in kind, at least by way of retaliation when opportunities exist for future relations. As Schelling (1963: 134) observes, "trust is often achieved simply by the continuity of the relationship between parties and the recognition by

each that what he might gain by cheating in a given instance is outweighed by the value of the tradition of trust that makes possible a long sequence of future agreements."

Indeed, open relations should affect trust because the immediate gains from opportunistic behavior are less valuable. Firms are less likely to discount the future heavily when they perceive that their relationship with another firm is going to extend beyond the current one. When time horizons are long, even distant benefits are considered valued but future benefits are worth little when the time horizon is short (Lipson, 1991).

Second, and relatedly, an open-ended relationship should affect trust in a current relationship because the possibility of staying together for a long period emboldens partners to engage in behavioral strategies that promote trust building in a current relationship. For example, partners are more likely to make side-bets when they realize that they are going to stay together for a long, as opposed to a short time. It has been suggested that the use of side-bets promote cooperation in general (Axelrod & Keohane, 1986), and alliances in particular (Kanter, 1994). That same logic can be extended to trust. It is also much easier to engage in such behavioral strategies as issue linkage or multifaceted relations under long term relations. Issue linkage involves attempts to gain leverage by making one's behavior on a given issue contingent on another's actions toward other issues (Haas, 1980). Multifaceted relations involve having several relations with the same partner concurrently. Again, the presence of multifaceted relations extends the

shadow of the future and that should affect trust building (Shapiro, Sheppard & Cheraskin, 1992). In summary, it is noted that when relations are perceived as long term, partner behavior in a current relationship will be positively affected including trust in the relationship. The research and discussion suggests that,

Hypothesis 3 [H3]: Open-endedness of a relationship between partners will be positively associated with trust .

Future Intent, Current Behavior and Trust

Interorganizational relationships often arise because partners see a strategic need or opportunity. When such relationships are governed to some degree by trust, how partner's think about their own future in relation to their counterpart as well as their general belief on using alliances again should affect their behavior in a current situation. A partner's future intentions can be expressed in two ways. First whether or not it believes it will collaborate again with the same firm. Second whether or not it believes it will use alliances again in the foreseeable future. The later is the central concern in the present study. It is suggested that both are important determinants of that firm's behavior in a current relationship. The qualifier, foreseeable future, is important because violations of trust must be remembered, but memory fails even in remembering violations (Lipson, 1991). There are at least two specific effects of future intentions on current behavior.

First, partners who do not intend to collaborate with a particular partner in the future or use alliances in general will tend to discount future payoffs from the

relationship heavily. Such a partner will most likely be motivated by the amount of absolute gains it can derive from a current relationship and be less concerned about long term positional payoffs (Tucker, 1991). Positional payoffs consists of the net gains or losses in the relative capabilities of partners.

Second, such a partner will tend to be less concerned about the consequences of violations. In other words, a partner who believes it will not use alliances again in the near future will tend to engage in less reflexive self-monitoring than one who sees partnering as a future possibility. For example, where partners do not intend to use alliances again in the future, they are likely to be less concerned with their reputation, but the loss of reputation is an essential mechanism for self-monitoring and for the effectiveness of social control (Ben-Porath, 1980), thus making social control less effective. After all, a minimum amount of rationality is assumed on the part of actors for social control to work.

In an interesting finding illustrative of the point being made here, Lipson (1991) reported that sovereign debtors valued their reputation least when they did not expect to borrow again. For such borrowers, it mattered little whether they lost their reputation or not by defaulting on their payments. The probability that such actors will engage in building social capital in the form of trustworthy reputations are less in this case than when they think they will borrow again. This same logic can be extended to partners in an alliance. Where partners do not intend to use alliances again, the shadow of the future is not as salient. Tucker (1991), in fact arrives at a similar conclusion. He reports from his study of collaboration among

European aircraft manufacturers that the French company Dassault, tended to discount the future benefits from collaboration because it did not intend to establish long-term strategic alliances with its European partners. There can be several reasons why a firm will choose not to use alliances again. Although the sort of explanations often advanced for why firms use alliances imply long-term motivations such as resource acquisition, and foreign market entry, there is reason to suggest that in some cases, alliances may be purely pre-emptive strategies to take out a potential competitor. In such cases, firms may consider a partnership as a one time affair.

In summary, it is noted that the future intentions of partners may affect their present behavior such that present behaviors relate to future intentions. Comparatively, firms that intend to use alliances again in the future will tend to behave differently than those who do not intend to use alliance again in the future. The evidence and discussion suggests:

Hypothesis 4 [H4]. Partner future intentions on alliance use will be positively associated with trust in a current relationship.

Market Relations and Trust

The type of market relations that exist between the partners is yet another dimension of the exogenous context worthy of attention. Specifically, whether partners compete directly in the same product market or not is important and has

implications for trust building. A focus on market related factors taps at one strategic component of trust.

Trust between partners who are invariably competing for the same product or geographic market should be considerably more difficult to build and sustain than in a situation where partners are not direct competitors. The idea is that when partners compete for the same product or geographic market, the hazards of opportunism are considerably greater than when they do not and opportunism is counterproductive to trust building (Larson, 1992; Bradach & Eccles, 1988).

Indeed, the alliance literature suggests that most intra-industry alliances are defined by direct competition between the partners in the same product class either in the same market or geographic segments (Varadarajan & Cunningham, 1995) . The evidence is that alliances in such cases have a strong strategic, almost predatory component. There is some evidence to suggest that alliance partners themselves are aware of the hazards of partnering with direct market competitors. For example, there is a pre-competitive resource sharing agreement between General Motors and Toyota. In this particular case, the contractual arrangement that governs the deal seems to have taken cognizance of the difficulties of collaboration between firms that are competing for the same geographic and product market. In their much publicized alliance that created the US based joint venture New United Motor Manufacturing Inc. (NUMMI), GM and Toyota not only marketed the output of the venture, a passenger car through their independent automotive dealers but most importantly, the products are marketed under different brand names.

Speculation suggests that such an arrangement may have been meant to partially blunt the direct competition that is occurring in the same product market between the partners.

In case of direct competition, there is reason to believe that partners will opt instead for comprehensive and legal arrangements to protect themselves because the chances for opportunism and moral hazard are far greater. Thus, despite all the good intentions, one should see less trust building behavior and greater suspicion in alliances between partners competing directly in the same product market than if partners do not compete directly.

It is important to note that even if same product market competitors serve different geographic markets, the potential always exists that they could enter each other's product market. After all, the classical definition of competitors includes potential entrants (Porter, 1985). In general, the possibility of conflict arising in alliances between partners who compete in the same product market is also much greater. Thus, present friends can become future enemies much faster in such situations (Harrigan, 1988). In a related finding, Bucklin & Sengupta (1993) suggest that the potential for opportunism and conflict is greater in alliances in which partners cooperate to serve the same product market but compete in others.

Some other related research evidence provides support for this idea. For example, Harrigan & Newman (1990) found that joint ventures between firms from similar businesses were more likely to be unstable and ended prematurely than relations between firms from dissimilar industries. Balakrishna & Koza (1993)

similarly suggest that joint ventures between similar firms have a higher probability of being dissolved than alliances between firms from dissimilar industries. Park & Ungson (1997) also document that joint ventures between direct competitors are less stable. These same conditions are more likely to pervert, and not promote trust building.

A caveat is, however, in order. There may be in fact a positive aspect to competing in the same product market. Generally, that may be an indication that both partners have the competence and familiarity with the market and that may be desirable for success. In general, the discussion and research findings suggest that in the presence of direct competition in the same product market, partners are more likely to engage in behaviors that pervert trust building. More specifically, it is suggested that:

Hypothesis 5 [H5]. Direct market competition between partners in an alliance will be negatively associated with trust.

ALLIANCE CONTEXT FACTORS & TRUST

Trust as Belief-Driven Sense making: Initial Categorizations & Trust

There is a long line of social-psychological research that touches on the importance of peoples's initial impressions and expectations on their behavior (e.g. Deutsch, 1958), and this same thinking has been applied to explain dyadic relations (Lord & Maher, 1991). The general theme is that in dyadic relations, actors may be

employing categorizations built on impressions and expectations to both understand and react to their dyadic partners. It is proposed that this line of social psychology research may be fruitfully employed to explain trust building between partners in an alliance. The conceptual link here is to consider the partner's initial expectations about each other as an estimation of the counterparts' *trustworthiness*, *ex ante*. Trustworthiness draws attention to the characteristics of the partner or firm.

The conceptual and empirical line of research that suggests trust has psychological components (e.g. Deustch 1958; Parkhe, 1993; Robinson, 1996) may provide yet another conceptual warrant for the application of micro-behavioral theories to trust building. It has been determined that trust has tacit and psychological components (Robinson, 1996) and trust is often signaled by subtle, symbolic behaviors (Luhmann, 1979). Thus, the fulfilling of the tacit and psychological component of trust hinges, to some extent, on the subjective interpretations of another social entity's behavior. The tacit component comprises of the partner's expectations about the unwritten, often unspoken reciprocal obligations inherent in an exchange.

At a general level, some form of prior relations furnishes partners with a base for forming initial expectations about a prospective partner's trustworthiness (Uzzi, 1996). It is, however, still possible for actors to form expectations about each other in the absence of extensive prior ties. For example, people can use some functional equivalent such as the known reputation of the prospective partner in the absence of prior relations. Reliance may also be placed on intermediaries (Coleman, 1990).

No matter the source, there is reason to suggest that expectations affect behavior.

Deustch (1958) probably provided one of the first empirical evidence on the importance of actor's initial expectations for the emergence of trust in dyadic interaction. The power of expectations on individual behavior has also been studied extensively in the social-psychological literature (e.g. Merton, 1948; Eden, 1990), where the logic of self-fulfilling prophecies is well known. A self-fulfilling prophecy occurs when an expectation affects both a perceiver and target's perceptions and behaviors which, in turn, affect outcomes. Merton (1948, 1957) originally classified self-fulfilling prophecies into two general categories: *interaction* and *coaction* effects. An interaction effect of a self-fulfilling prophecy occurs when partner A's expectancy that partner B is trustworthy makes partner A to interact with partner B in a way that leads partner B to behave in a trustworthy manner, thereby confirming the initial expectation of partner A and vice versa. The second type of self-fulfilling prophecy, coaction, occurs when both partners expect each other to be trustworthy and this belief leads to independent coaction that collectively fulfils their expectations.

It is proposed that just as in the case of interpersonal relations, trust building in alliances will be affected by the expectations of partners. Partners who perceive ex-ante that their counterpart is trustworthy are more likely to engage in behaviors that promote trust than those who perceive low levels of trustworthiness ex-ante. More specifically, it is proposed that expectations will affect trust through two main paths: how partners behave toward each other and how they interpret each other's behavior. Indeed, these insights are largely consistent with implicit theories (Lord

& Maher, 1991; Hanges, Braverman & Rentsch, 1991).

First, positive expectations mean partners will tend to interpret the behaviors of their counterparts in a positive light. Subjective behaviors may be especially susceptible to this sort of belief-driven interpretation. Take behavior that is signaled for example. There are all sorts of possibilities for perceptual distortions in signals. Partners may see and draw conclusions (by way of interpretation) on what they expect to see and hear and not what is actually signaled by a particular behavior. The hypothesis that expectations affect perceptions of social behavior has received considerable support in the social psychological literature (Darley & Gross, 1983; Duncan, 1976; Zadny & Gerard, 1974). The fact is a partner may "see" what it expects to see regardless of the evidence because it already has a favorable image of its counterpart (Darley & Fazio, 1980; Snyder, 1984).

Secondly, the way partners react to each other's actions may be affected by their expectations. The related psychological prediction model of assimilation (Sherif, Sherif & Nebergall, 1965) leads one to predict that the initial attitude of a partner will predispose it to react toward its counterpart in ways that are generally consistent with prior expectations about a counterpart. For example, a partner who has prior favorable expectations about its counterpart will tend to be more lenient in evaluating the counterpart's relationship related behavior. The fact is people tend to give idiosyncratic credit to those they have positive expectations of (Hollander, 1958). Work in dissonance theory also points to the tendency of people to selectively seek information that supports their beliefs and selectively avoid contrary

information (Festinger, 1957; Kassarian & Cohen, 1965; Hanges, Braverman & Rentsch, 1991). These predispositions are possible in trust building in interfirm alliances since there is reason to suggest that trust building is not necessarily a logical, rational process (Luhmann, 1979).

Additional support for this proposition may be found in work on implicit theories (Lord & Maher, 1991; Engle & Lord, 1997). For example, Lord & Maher's (1991) implicit model confirms that people use implicit theories both a basis for interpreting the behavior of their dyad partner as well as a foundation for generating their own behavior because the use of implicit theories may be one way of providing a degree of stability and predictability in dyadic relations.

Conceptualizing trust building as a form of sense making can further illuminate this discussion. Weick (1993) suggests sense making is about the enlargement of small cues. Although the classical definition of self-fulfilling prophecies touch on ways in which erroneous impressions influence outcomes in interpersonal relations, Weick (1993) enlarges Merton's insight by conceptualizing self-fulfilling prophecies as an essential aspect of sense making. In its enlarged form, the perverted logic implied in self-fulfilling prophecies is replaced by an active, almost pro-active logic. In other words, self-fulfilling prophecies become a necessary feature in Sense making situations.

Partners in an alliance, even those with a history of past ties are essentially engaged in a period of sense making or trying to get to know each other. Larson (1992) quotes a CEO as saying " [W]hen we started, I did not know I could trust

them.”⁴ Since such managers have little to go on, their expectations cannot but help them. As Weick (1993: 148) suggests, “when people have little to start with and their goal is to get to know each other, their expectations becomes a force that shapes the world they try to size up.” Similarly, Wilson (1988) suggests that greater uncertainty in an exchange relationship makes the strategies of exchange partners acutely sensitive to their beliefs and expectations. Indeed, such expectations or beliefs need not be accurate as long as they are plausible (Isenberg, 1986, cited in Weick, 1995). According to Isenberg, plausible reasoning occurs when reasons for believing are not necessarily correct, are based on incomplete information but fits the facts, even if imperfectly.

In fact, considering that trust has psychological components, much of what constitutes trust is likely to be under specified by partners. Thus until some extreme violation occurs, the process of trust building is likely to continue as a process where small cues are enlarged and behaviors confirmed or disconfirmed. Theory suggests that where people are either less concerned about accuracy or better yet are unable to always determine the accuracy of what they hear or see, they are likely to use a relatively automatic categorization process as a key basis for interaction and initial expectations are the basis for building those initial categorizations (Lord & Maher, 1991).

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This quote provides some proof that firms may engage in alliances with just some minimum amount of trust at the start. Thus, the core arguments presented on the key role of initial perceptions may indeed be observable in practice.

Although expectations should generally have a positive relationship to trust building, there are at least two important caveats that need to be kept in perspective. First is the fact that subsequent interactions in a relationship will provide opportunities to either confirm or disconfirm initial expectations although the guess is that expectations stand a greater chance of being confirmed than disconfirmed. Theory suggests that although people often revise their initial categorizations, the tendency to attribute category-inconsistent behavior to situational factors (Hanges, Braverman, & Rentsch, 1991) makes such revisions rare. Second, it is assumed that where one partner takes unilateral action to elicit trust on the basis of positive expectations about its counterpart, such behavior is reciprocated. Although this cannot always be predicted, there is reason to suggest that elicitive behaviors will be reciprocated. Heider's (1958) theory of balance makes predictions about the symmetry of affect in a dyad. An assumption that positive behaviors will be reciprocated in kind is consistent with that prediction.

One particular limiting condition on the proposed relationship between partner perceptions of their counterpart's trustworthiness and trust is worth exploring. This is the possibility of a non-linear relationship between trust and perceptions. Organizational research suggests that higher levels of commitment, although good, may actually sow the seeds of reduced commitment. "The higher they are, the harder they fall" hypothesis in organizational theory (Brockner, Tyler & Cooper-Schneider, 1992) is expressive of this position.

This same logic can be extended to understand the benefits and limits of

partner's initial perceptions of their counterpart's trustworthiness. Partners who have high initial expectations about a counterpart and therefore were more willing to trust initially but later feel disappointed with the relationship will tend to have much lower trust than those partners who had lower expectations and therefore were less ready to trust initially. Andaleeb's (1989) findings support this sort of reversal of attitudes when partners who had initial high trust are disappointed. Beyond this and more important in the context of the present discussion is the possibility that positive perceptions may have some optimal limit beyond which they can become dysfunctional. In other words, the relationship between trust and initial expectation may be curvilinear. Indeed, since the hypothesis on initial perceptions suggests some kind of self-fulfilling prophecy, it is of interest to explore this relationship. In general, self-fulfilling prophecies have both a positive and negative side.

In the presence of very low positive initial perceptions, trust is unlikely to emerge. Of course, the relationship may still be consummated in spite of such low initial unfavorable opinion. For example, where partners see both a strategic need and some degree of compatibility with each other, they may enter an alliance irrespective of low initial perceptions of trustworthiness. At the same time, having too high an expectation of a counterpart's trustworthiness can lead to a tendency to be more severe in evaluating the performance of a counterpart, but excessive monitoring will be counterproductive to trust building. In summary, it is noted that partner expectations, as beliefs, will affect trust in the relationship. While

expectations will tend to positively relate to trust, there may be a threshold beyond which higher expectations sow the seeds of reduced trust, thus suggesting an inverted U-shaped curvilinear relationship between trust and perceptions. The research and the preceding discussion is the basis for the following hypotheses:

Hypothesis 6 [H6a]. Partner initial perceptions of their counterpart's trustworthiness will be positively associated with trust.

Hypothesis 6b [6b]. There is a curvilinear relationship between initial perceptions of a counterpart's trustworthiness and trust in an alliance.

Relationship Intensity

It has been suggested that trust between partners requires sustained, intense contact (Powell, 1994). The presence of strong relations defined by frequent interaction and the extent to which partners maintain a close relationship should positively affect trust building in the relationship. Thus, it is proposed that strong relations between the partners determines to a large extent how trust emerges and is sustained. Specifically, strong ties should positively affect trust in the relationship.

Following Krackhardt (1992), strong ties can be defined in terms of three indicators. These are (1) time or relationship history (2) the presence of affect

between partners and (3) frequency of interaction. Frequency of interaction refers to how often partners engage in face-to-face meetings. Affect refers to "liking" for whatever reason, and time or history refers to how long partners have interacted. Krackhardt (1992) argues that these three indicators of tie strength combine to predict trust or *philos*.

Although a curvilinear relationship has been posited between the strength of ties and trust (Granovetter, 1985), trust in business settings may rest on strong, as opposed to weak ties between actors in partnering firms. Primarily, the existence of strong ties between partners provides the best context in which influence and persuasion are most easily exercised in social relations (Granovetter, 1992). Since uncertainty is a perennial feature of reciprocal exchange, strong ties will tend to facilitate trust building behavior because a close relationship is more valuable than a weak one when uncertainty is great (Krackhardt, 1992).

The frequency of interaction and affect are most expressive of relationship intensity. Since relationship history becomes more salient when partners interact frequently, history as the third indicator of relationship intensity can be measured by a proxy: frequency of interaction. The basic premise is that although frequency of interaction will not guarantee the presence of trust, it provides by far the best opportunity for partners to engage in trust building behaviors. Again, although affect may be viewed as a separate indicator of relationship strength, it must be remembered that frequency of interaction provides, by far, the greatest opportunity there is to develop affect. Together, both indicators affect the development of trust

for several reasons.

First, frequent interaction makes the relationship history more salient by magnifying its importance. This is because when partners interact frequently, little time elapses between each meeting. This way, partners are able to remember what happened the previous time as well as what is at stake since information exchange is more regular with frequent meetings. Since people have limited memory capacity and process information according to how often it is available (Tversky & Kahneman, 1973), frequent interaction will make it easier for partners to link each other's behaviors and seek clarifications on areas of ambiguity. Since memory and inference are important for the interpretation of both objective and subjective behaviors that lead to trust, behaviors that extend the social memory of partners will be conducive to trust building and frequent interaction makes this possible. Frequent interaction also produces predictability and research suggests that predictability is an antecedent to trust (Luhmann, 1979; Barber, 1983).

Second, frequent interaction makes it possible for partners to develop affective bases for trusting. Since affect-based trust depends on an actor's attributions about the other's motives (Lewis & Weigert, 1985), frequent interaction is necessary so that an actor can accumulate sufficient social data to allow the making of confident attributions. More directly, social exchange theory suggests that frequent interaction in a dyad will produce social effects such as trust, mutual social approval and feelings of attachment (Emerson, 1981). In the final analysis personal interaction, especially on a face-to-face basis, enforces some degree of confidence

and therefore the accumulation of trust capital (Casson, 1990). How that interaction occurs is key and it is suggested that face-to-face meetings are preferable to other modes of communication.

Frequent face-to-face interaction means that the chances for developing affect are greater (Homans, 1950). Face-to-face meetings are especially important for developing affect and trust because compared to electronic and irregular meetings, this mode of meeting enhances the value of communication. As Nohria & Eccles (1992: 293) observe, "no other communication medium has such a total bandwidth." Although the presence of electronic modes of communication will tend to increase information flow and exchange, there is reason to believe that face-to-face contact is preferable in trust building. For example, while convenient and perhaps less costly, electronic or impersonal modes have lower utility for trust building behavior since it is more difficult to form mental images of people in their absence. Besides, the integrity of electronic communication cannot always be guaranteed (Stone, 1991; Nohria & Eccles, 1992).

Person-to-person interaction allows partners the opportunity to interpret social cues and capture psycho-emotional reactions, and this is crucial for resolving uncertainty and ambiguity when the need arises. In a related study at an intra organizational level, McAllister (1995) found that frequent interaction between a manager and the peer led to the development of affect-based trust. Similar relationships are predicted in the case of interfirm relations.

No matter its origin, affect can be an important factor in trust. The presence

of affect between partners or their representatives means that people are believed and there is less need to monitor each other. This helps trust building because close monitoring is counterproductive to trust building (Williamson, 1993). Affect may also skew partner attitudes toward those behaviors that promote trust. For example, such partners may have a higher threshold of tolerance for minor violations or shortcomings of each other. Chances are that people will tend to give idiosyncratic credit to those they like. Of course, too much "liking" can become dysfunctional such as when one becomes too lenient in their evaluations of recipients of his or her affect. In general, until a liked partner does something to violate its counterpart's trust, the existence of affect makes it more likely that trust will prevail in the relationship.

Although frequent interaction also affects the development of cognitive-based trust, there is reason to suggest that affect will undergird and sustain trust more than cognition. This is because since alliances involve reciprocal exchange there is always an inherent disequilibrium. The existence of affect means that partners are more lenient and forgiving of temporary lapses (Madhok, 1995). It must be noted, however, that affect may not always be reciprocated (Krackhardt, 1992). In such instances, misplaced affect and trust can be costly (Granovetter, 1985; Ring & Van de Ven, 1994). The homily "familiarity breeds contempt" therefore expresses the possibility of negative relations between frequency of interaction and trust.

It is unlikely, however, that unreciprocated affect and the corresponding "blind trust" that comes with it will last for long in alliances. In interfirm relations, the

strategic component of firm behavior and self-interest makes it unlikely that unreciprocated trust will prevail for any length of time. In summary, it is noted that frequent interaction helps the development of affect, encourages the building of relational norms and in general produces a strong relationship and strong relations produce trust. In general, one would expect that affect will be reciprocated. In one related finding, Kollock (1994) found that the trustworthiness rating for one's most frequent exchange partner was greater than the ratings for one's least frequent exchange partner. The discussion and research evidence suggests that,

Hypothesis 7 [H7]. Relational intensity between the partners will be positively associated with trust.

THE MODERATING ROLE OF INDUSTRY NORMS AND ROLE PERSON TENURE

There are a number of limiting conditions associated with some of the proposed relations presented here. Two important ones are discussed. They are (1) a consideration of the extent to which collaboration is perceived as an industry norm and (2) the tenure of venture managers or people who play the boundary spanning role in their respective firms. Although the former is exogenous to the relationship, it is nonetheless viewed as important since trust works through social control. In the later case, the focus is important because trust even at a firm level remains an interpersonal phenomenon. The fact is that trust at a firm level is ultimately relations

between individuals. Both issues are discussed in turn.

Industry Norm & Dyadic Behavior

The importance of industry context on trust creation has received sporadic research attention. Nonetheless, there are important reasons to suggest that the type of mind set that prevails in an industry may affect how trust emerges between actors from those industries. Theories of industry life cycles (Stinchcombe, 1965) and theories of macro cultures (Spender, 1989; Abrahamson & Fombrun, 1994), in fact suggest that industry-level rationalities can affect dyadic relations.

In this research, insight from these and similar theories is built upon to propose that where collaboration is accepted as a legitimate industry phenomenon, greater trust would be present in relations involving partners from those industries. In other words, actors that see strategic partnering as an "industry recipe" (Spender, 1989) are more likely to engage in reflexive self-monitoring in dyadic relations as well as engage in behaviors that promote and sustain trust. The rationale is that such firms will recognize that violations of trust in one specific instance will amount to a violation of a collective industry norm. The difference is that in this particular case, the consequences for untrustworthy behavior is likely to be severe since chances are that the firm will engage in collaboration again because collaboration has become a vital tool in the industry. Like the literature on shared social norms (Zucker, 1986) shared industry norms will confer some measure of social infrastructure on partners.

When collaboration or any industry-level phenomenon becomes widely accepted, it is fair to suggest that such an industry has certain specific mechanisms that aided the institutionalization of the phenomenon in question. For example, there is likely to be some degree of normative isomorphism (DiMaggio & Powell, 1983), built on shared links in such an industry. For example, the biotechnology industry is said to be populated largely by scientists with doctoral degrees (Shan, Singh & Amburgey, 1991). In such cases, most industry personnel are likely to have some shared similarities and that should aid the process of trust building. As Burt (1986), suggests, similarities help trust building since people reason that someone like them are less likely to betray them.

The coordinating influence of other industry level mechanisms in building shared industry recipes have also been noted. For example, Abraham & Fombrun (1992) point to the coordinating influences of industry-specific newspapers, magazines and newsletters. Speculation suggests that industries in which identifiable recipes are shared will have strong industry links such as industry associations. This means opportunities exist to make personal contacts and that by itself can be the basis for building a social structure which can help trust building in dyadic relations (Begtsson, 1993). Besides, dense networks among firms generally promote cooperation and trust building (Richardson, 1972).

Another important additional benefit in this type of context is the relative ease with which people can communicate and understand each other. In other words, the impact of relational intensity should be greater in the presence of these social

infrastructural conditions. For example, the presence of shared views on collaboration will aid coordination processes in dyadic situations. Partner communications, including the interpretation of signals between partner representatives will all be aided in the presence of shared constructions of meaning.

The research evidence suggests, indeed, that sectoral conditions affect dyadic relations. Begtsson's (1993) findings from his study of cooperation among Swedish electric companies demonstrates that the presence of a shared norm on cooperation was important for performance at dyadic levels. In a related study whose conclusions are largely consistent with the key points here, Browning, Bayer & Shelter (1995) found that a common perception of similar challenges in an industry was an important factor that pushed partners to cooperate. Thus, when collaboration becomes an industry norm, one should see its effect at a dyadic level. More formally, it is proposed that,

Hypothesis 8 [H8]. The collaborative norm in an industry will moderate the hypothesized relationship between relational intensity and trust such that the higher the acceptance of collaboration as an industry norm, the higher the trust at a dyadic level.

BRP tenure and trust

The fact that trust remains an interpersonal thing is well made in the literature (Larson, 1992; Bradach & Eccles, 1988). If personal relations undergird trust in interfirm relations, then consistency in contact persons should positively affect trust building in the relationship. Thus, where individual boundary role persons with whom key links are made leave their posts, it is expected that the relationship will be affected (Dodgson, 1993). In joint ventures, turnover means changing partner representatives on the joint venture team. Trust building takes time and a new individual means that new acquaintances have to be made, new language and understanding have to be built between the new key people since prior relations are disrupted. Like couples, partner representatives may develop maintenance strategies overtime as well as build social bonds (Wilson, 1978; Baxter & Wilmot, 1985)).

Viewed as a type of role or work transition (Louis, 1988; Nicholson, 1984) partner representatives may go through a period of adjustment in which formal role relations become embedded in an incremental progression of socialization (McGrath, 1984) and formal contracts increasingly give way to psychological contracts that are largely interpersonal based (Ring & Van de Ven, 1994). Overtime, the blend of personal friendships and repeated interactions lead to the development of norm formation (Shull, Delbecq, & Cummings, 1970). Theory suggests that as relationships progress, people will become more effective in fulfilling their role obligations than in the beginning (Baxter & Wilmot, 1985; Miell & Duck, 1986). The

loss or change in such key contacts however reverts this progression.

The key consequence of turnover among BRPs as Ring & Van de Ven (1994) note is that their replacement may not have the same type of personal or organizational roles. New sense making processes have to be commenced and in cases where the original BRPs had unfulfilled plans, the process of commitment building will be derailed when new people take over the management of the relationship (Ring & Van de Ven, 1994). Thus, the presence of the same individual BRPs means that partner representatives will have built some relational norms and understanding. Indeed, one should see greater trust when there is no turnover in role persons than when new people are involved assuming that all other things such as the extent to which expectations continue to be met are going well. The preceding discussion is the basis for the following hypothesis:

Hypothesis 9 [H9]. The tenure of boundary role persons will moderate the hypothesized relationship between relational intensity and trust such that alliances with higher turnover will have lower trust than those with lower turnover.

TRUST OUTCOMES

Trust and Performance

The relationship between trust and performance is a necessary, but somewhat controversial claim to make. In strategic terms, the ultimate criterion is to assess the extent to which any mode of governance affects performance in the

relationship. To date, findings linking trust and performance remain mixed and inconclusive. The difficulty, in part, is as a result of the problems associated with measuring performance in alliances generally. Perhaps the greatest reason for the inconsistency is the often disparate and idiosyncratic criteria that have often been applied to measure performance (Yan & Gray, 1994).

Despite the mixed and inconclusive findings on the link between trust and performance, (e.g. Yan & Gray, 1994; Killing, 1983), a strong case can be made for a positive relationship between trust and performance when trust is viewed as a determinant of relationship quality (Moorman, Zaltman & Deshpande, 1992; Anderson & Narus, 1990). By increasing the quality of the relationship, it is assumed, trust enables partners to engage in other activities that increase the performance of the alliance (Buckley & Casson, 1988).

There are costs associated with trust building (Sako, 1992), but once it exists, trust is beneficial to the relationship for several reasons. First, by "relying on a man's word" (Macaulay, 1963) so to say, trust allow partners to focus on the substantive goals of the venture. Second, although a certain amount of monitoring is desirable, reliance on trust makes continuous monitoring unnecessary. This is because trust reduces opportunism (Larson, 1992; Bradach & Eccles, 1988). Third trust reduces transaction costs. In the presence of trust there is no need to specify in advance what the other partner is supposed to do in the case of unforeseeable consequences (Thorelli, 1988). Trust also allows partners to more easily transfer valuable, fine-grained information between each other. This is because when

partners trust each other, they are less inclined to worry about the fact that valuable information will be used opportunistically. There is research evidence on the benefits of quality information for relationship quality and performance (Larson, 1992; Helper, 1990; Uzzi, 1996). The value of quality information is especially important in dynamic and uncertain environments. Finally, when partners trust each other, there will be no need for costly renegotiations midstream.

The relationship between trust and performance may, however, be more than linear. For example, Yan & Gray (1994) suggest that performance may also have a feedback mechanism on trust. Such a thinking is generally consistent with a dynamic view of trust. In fact, a feedback mechanism may exist between antecedents such as relational intensity and trust, in the sense that the presence of trust will in turn lead to greater satisfaction on the part of partners. As Mayer, Davis & Schoorman (1995: 728) observe: "When a trustor takes a risk in a trustee that leads to a positive outcome, the trustor's perceptions of the trustee are enhanced. Likewise, perceptions of the trustee will decline when trust leads to unfavorable conclusions."

Also, alliance performance is a multidimensional construct (Geringer & Hebert, 1991) and the possibility that factors unrelated to trust explain performance are recognized. For example, partner learning may be important in explaining performance (Hamel, 1991). However, since trust seems so fundamental to relationship quality (Jarillo, 1988; Buckley & Casson, 1988; Parkhe, 1993a; Madhok, 1995) it is fair to argue that its presence substantially affects alliance performance.

The research and preceding discussion is the basis for the following hypothesis:

Hypothesis 10 [H10]. Trust between partners in an alliance will be positively associated with performance.

Table 1:
Summary of Main Variables, Predicted Relation to Trust and Previous Research

Variable	Predicted Direction	Related Research
Interfirm Trust	Dependent Variable	Zucker, 1986; Anderson & Narus, 1990, Currall & Judge, 1995; Buckley & Casson, 1988; Sako, 1992.
Relationship Intensity	+	Granovetter, 1992; Krackhardt, 1992; Husted, 1989; Homans, 1950.
Future Intentions	+	Lipson, 1991; Axelrod, 1984.
Open-endedness	+	Shapiro, Sheppard & Cheraskin, 1992; Heide & Miner, 1992; Axelrod, 1984; Tesler, 1980, Milgrom & Robert, 1990; Schilling, 1963.
Expectation	+	Deutsch, 1958; Weick, 1995; Eden, 1990.
BRP Turnover	-	Ring & Van de Ven, 1994; McGrath, 1984.
Uncertainty	+	Ring & Van de Ven, 1993; Kollock, 1994; Barney & Hansen, 1993
Collaborative Norm	+	Abrahamson & Fombrun, 1994; Spender, 1989
Market Competition	-	Harrigan, 1988; Bucklin & Sengupta, 1993; Park & Ungson, 1997
Referral	+	Uzzi, 1993, Granovetter, 1992
Interdependence	No Prediction (Control Variable)	Fox, 1974; Butler, 1990; Anderson & Narus, 1990.
Prior Experience	No Prediction (Control Variable)	Cohen & Levinthal, 1990.

VARIABLES OMITTED FROM THE MODEL-CONTROL VARIABLES

The present research omitted a number of salient variables that are deemed relevant to a theory of interfirm trust. The main reason for this omission is methodological rather than substantive. Specifically, the reason is to reduce model complexity and theoretical anarchy especially since theory building on interfirm trust may be considered to be in its infancy. The presumption is that it will be easier to build on a much simpler model once substantive findings are made. The omitted variables are deemed important enough that they are used as control variables in tests of the hypotheses.

First is the previous experience of partners. At a time when alliances have become an important part of the strategic repertoire of firm strategies (Kanter, 1988, Powell, 1990), most firms are likely to use some form of partnership at one time or the other. Speculation suggests that not all firms will have a positive experience from the relationship. Indeed, the research suggesting that alliances tend to be inherently unstable (O'Brien & Tullis, 1989), suggests that a substantial number of partnering firms will have some negative experience at one time or the other.

There is reason to suggest that in cases where partners have some experience, the past will play an important role in their future behavior. This includes how they relate in a new alliance. In general, partners with prior experiences with alliances, may have a certain amount of competence with the process. This has been called collaborative know how (Simonin, 1997). Such previous experience

may serve as a learning experience for partnering firms. Insight from learning theory suggests that any learning in the past helps new learning (Cohen & Levinthal, 1990). Granting that this is the case, then one would expect some relationship between prior experience and trust. Indeed, speculation suggests that whether a prior experience was negative or positive, lessons would still be learnt from it. In the final analysis however, partners with bad experiences in previous alliances are likely to be more wary in any new relationship.

Second is the interdependence between the partners. This relates to the use of power and influence in the relationship. Power relates to using influence and control to accomplish a partner's objectives in the relationship. In fact, behind an appearance of trust may be a power relationship (Fox, 1974). Although there is a difference between having and using power (Emerson, 1972) there is reason to suggest that the greater the capability asymmetry, the more likely it is that trust can become a façade for power and so the interdependence between the partners may be used as an indicator of power capability. This assertion is supported by the perspective that suggests that trust is more likely to emerge in the presence of equal capabilities (Ring & Van de Ven, 1989), and perspectives that suggest that inequality in exchange are most likely to occur in the context of structural inequality (Cohen & Greenberg, 1982).

It is rather difficult to determine when power is a front for trust, except in the extreme case of a stronger partner acquiring the weaker partner. Although mergers and acquisitions can and are often mutually negotiated, the stream of research that

documents high levels of distrust between merged firms (e.g. Larsson, 1993; Marks & Mirvis, 1986; Blake & Mouton, 1985) presents a prima facie case to suggest the presence of influence and control, as opposed to trust in such relationships. The present research stops short of testing this hypothesis directly. Instead, effort is made to control for power imbalances between the partners.

Chapter Summary

This chapter presented the theory and hypotheses of the study. The model presented focused on four main things: (1) partner perceptions and intentions (2) interactional sequence behaviors (3) the structure of the relationship and (4) a specification of factors exogenous to the model but deemed important to affect the relationship. The next chapter presents the research design and methodology of the thesis.

CHAPTER 8

RESEARCH DESIGN AND METHODOLOGY

Chapter Summary

The preceding chapter presented the theory and conceptual framework that guides the present research. This chapter presents the research design and methodology for testing the hypotheses. It is organized into two sections. Section one presents the research methodology that was used to test the hypotheses presented in the previous chapter. In addition, the chapter presents a description of the sample used in the study. It also discusses how the data for the study were collected. In addition, it will discuss how key constructs of the research model were measured. Section two of the chapter presents the instrumentation and measurement of variables.

SECTION ONE

Overview of Method

The overall goal of the present research is to examine the dynamics of trust between partners in a strategic alliance. As Kerlinger (1986) observes, research designs are chosen to enable researchers to answer research questions as validly, objectively, accurately and as economically as possible. Achieving all these objectives is hardly feasible given the constraints under which researchers often operate and this project is no exception. Karl Weick (1979) also notes that inevitable tradeoffs are made in our choice of methods in research. In the choice of method, the present research made inevitable tradeoffs in terms of making a number of

judgement calls.

The present research combined quantitative and qualitative approaches in the form of mail survey and case studies (interviews). Cross-sectional data were collected through a mail survey and ten in-depth interviews were conducted with nine CEOs and one Vice-President. All interviews were in-person. The quantitative data for the study is primary, cross-sectional data. The qualitative data is comprised of transcribed, coded, taped-interview data that was thematically content analyzed.

Rationale for a Multi Method

The choice of a multi method was motivated by a number of specific reasons. Considering the nature of the main construct, trust, a combination of both methods seems more acceptable than reliance on either one alone (Kramer, 1996). Individually, there is something to say for the use of either a survey or reliance on interviews. But as the discussion will show, a combination of both may allow us to overcome the limitations of each.

It is known that interviews offer greater possibilities for building confidence between researcher and respondent (Kidder & Judd, 1986). Thus the qualitative aspect of the method allows us to get a richer insight into the mainly perceptual-based constructs. Previous alliance related research has also used interviews (Killing, 1982). However, sole reliance on interviews would have meant a focus on a limited sample, but considering the questions posed in this research a wider sampling frame made possible by the use of a survey was deemed preferable. Although this may be contrary to some recent calls for using “soft” methods to tap

constructs such as interfirm trust (Parkhe, 1993), in terms of economy and validity, the present study deemed it necessary to include quantitative measures.

Surveys in the form of self-reports may be the most plausible alternative for measuring unobservable constructs such as trust. Trust is a component of intentions, values, attitudes and perceptions and it has been determined that the use of unobtrusive methods may be preferable for tapping constructs with such latent indicators (Ganster, Hennessey & Luthans, 1983). Besides, well constructed, valid, self-administered questionnaires are convenient for gathering relatively large samples economically. Self-administered questionnaires are also fairly easy to use, less expensive and faster than other field methodologies available (Podaskoff & Dalton, 1987).

A combination of self-administered questionnaires and interviews to the same subject is also said to elicit a higher participation rate (Judd, Smith & Kidder, 1991). Such a hybrid approach combining coarse and fine grained approaches has been generally recommended as suitable for strategic management research (Harrigan, 1988).

SOURCES FOR DATA

The present research focuses on several structural and behavioral antecedents of interfirm trust. These include sector level factors. Accordingly, a decision was made to include several industries as data sources. The tradeoff here is that the internal validity of the study may be reduced (Campbell & Stanley, 1979).

However, the choice of several industries will increase the external validity of the study. Both the research objectives and types of questions asked suggest that the preference for external validity is not a disadvantage.

Three industries constitute the primary population from which the samples were drawn. These are: (1) pharmaceuticals (2) biotechnology (3) medical equipment manufacturers. Multiple industries have constituted sources of data in at least one study that focused on trust (Gulati, 1995). In the end, some firms included were outside these primary industries. The criterion for their inclusion is that at least one of the partners comes from one of these three industries.

These industries were selected because biotechnology, pharmaceutical and medical technology firms are known to engage in several alliances. In fact the suggestion is alliances are redefining these industries (Ernst & Young Report, 1995). Also, although a number of studies have examined partnering in the biotechnology industry (e.g. Powell, Koput & Smith-Doerr, 1996) trust related issues have not been examined although it is realized trust is important in these settings (e.g. Powell, Koput & Smith-Doerr, 1996).

There are other reasons for the choice of these industries. First although trust seems important in these industries, there are serious mitigating circumstances against its development. There is a high degree of risk and uncertainty associated with scientific discovery. Besides the output, scientific discovery, is rather sensitive and so there is a great need to protect highly valuable and sensitive information. Second the presence of well-developed industry associations and third party links

provide both the opportunity to start relations and the means of social control through which trust is supposed to work. Such a setting provides for a rigorous test of trust-related hypotheses.

Sample Selection & Criteria

The present research focused on specific types of interfirm alliances. The sample was drawn from both American and Canadian-based firms. The focus is on dyads of firms so only firms on which information was available for both partners were included in the sample pool. Foreign-based alliances were generally excluded because of the difficulties of collecting such types of data. Besides, there is reason to suggest that cross-border alliances can benefit from the outcome of the present study.

Certain types of interorganizational relations sometimes classified as alliances were excluded. One time contractual arrangements as well as strict licensing agreements were excluded. Franchising agreements as well as arms length buying and selling relations were also excluded. The exclusion of one-time contractual arrangements is consistent with past research (Harrigan, 1985; Parkhe, 1993; Gulati, 1995). Mergers, acquisitions and takeovers are also excluded since at least one of the actors seizes to enjoy autonomy but that is one criteria for identifying firms for the study. Finally, state sponsored R & D research consortia such as the Texas based semi-conductor initiative, SEMATECH, were also excluded because such collaborative forms often resemble networks but this

analysis is restricted to dyadic relations. Both private and public for profit enterprises were included in the sample, although there was some over-representation of publicly traded firms considering the data sources that were used.

Alliances formed between January 1, 1990 to December 31, 1996 were included in the survey. Since this survey was administered in December 1997, at least a year had elapsed since every alliance came into being. This was a procedural control applied to ensure that enough time existed for the development of relational norms such as trust. The decision to use a one year cut off since the alliance was announced was guided by evidence from at least one study. Lorenz (1988) reported that it took about one year for trust to develop between alliance partners. The choice of a 5 years range was motivated by the desire to increase the sample base and hopefully the response rate. Following theoretical insight, it was assumed that recall of salient events such as trustworthiness would be fairly easily recalled in five years (Nisbeth & Ross, 1977).

Informant Strategy: Single vs Multiple

This research had to make a judgement call on whether to use multiple or single respondents. After considering the key advantages and disadvantages of each, the decision was made to use single informants. There are advantages and disadvantages associated with single and multiple respondents respectively and these are now discussed.

A primary advantage of using multiple respondents is the validity of the reports. In the context of the present study, such multiple reports will then be

aggregated and discrepancies between the respondents reconciled (see e.g. Van de Ven & Walker, 1984; Anderson & Narus, 1990), but the use of multiple respondents is not without its disadvantages. Glick, Huber, Miller Doty & Sutcliffe (1990:304) summarize some of the key ones: (1) Since firms will incur greater costs, firms may tend to decline participation. This is because managers will be volunteering their time and effort to complete the questionnaires; (2) informants tend to decline to participate or to put forth substandard effort as one of the several informants rather than as a special key informant; (3) informants decline to participate or where they do, tend to withhold information for fear of breaches of confidentiality in the subsequent discussions with other informants. (4) effort and resources will be conserved with single informants and (5) the larger the number of informants, the less well-qualified is the average informant. (6) It may not always be easy to identify several qualified people and determining perceptual agreement with multiple respondents may not always be easy (Anderson & Narus, 1990). A primary disadvantage of using single informants relates mainly to the contamination effects of personal biases, and other idiosyncratic sources of error such as impression management tactics (Huber & Power, 1985).

The choice of a single informant was motivated by a number of considerations. First single informants have been used in previous research to assess interfirm phenomenon (e.g. Geringer, 1988). Campbell (1955) suggested that key informants could be used to collect quantitative data. His suggestions that key informants should (1) occupy roles that make them knowledgeable about the

issues being researched and (2) be able to and willing to communicate with the researcher were closely followed. In the case of dyadic research, there is evidence on the validity of using single informants to collect dyadic data (John & Reve, 1982).

Second, the use of a case study as a hold-out procedure will serve as an additional method for corroborating, expanding on and increasing the validity of the reports. Third, in most of the industries selected, there was reason to believe that with the exception of large pharmaceutical firms, most are dominated by relatively small firms. For example, the 1995 Canadian Biotechnology Association Report estimates the average number of employees at 35 employees per firm. It is noted that calls for using multiple respondents was specifically directed to research dealing with large organizations (Bagozzi & Phillips, 1982). Fourth, there is research evidence to suggest similarity within settings (Schneider, 1983; Schneider & Bowen, 1985). Specifically, Scheneider (1983) indicated that people in work settings tend to agree rather than disagree and so single informants may just be as representative as multiple informants.

Key Informant

The individual most directly involved with the alliance was chosen. In almost all cases, top management personnel, predominantly CEOs were chosen as key informants in the responding firms. In the case of joint ventures, the venture managers were chosen as the key informants. The key informants were identified from recent published sources. The Bioscan, and Canadian Biotechnology Directory

as well as information from Recombinant Capital page were the sources used.

Since reliance on a key informant is not without its limitations, effort was made to reduce individual biases on the part of such respondents. To this end, the recommendations of Huber & Power (1985) were followed. The goal was to identify the person most knowledgeable about the relationship. An attempt was made to motivate the informants to cooperate. This was in the form of the cover letter with a detailed explanation of the overall usefulness of the study and a promise to furnish respondents with the results of the study.

Since the methodological nuisance of common methods variance cannot be completely eliminated with the administration of both an interview and questionnaire to the same respondents in at least 10 cases, two procedural controls were used to minimize this. First, while the questionnaire was a structured, pretested instrument requiring forced-choice or numeric responses, the interviews were conducted with semi-structured, open-ended protocols. Second, a time lapse of about 2 weeks was maintained between the administration of self-reports and interviews to allow enough time to elapse between the filling out of the questionnaires and the interview so that respondent did not remember everything on the questionnaire.

In summary, the choice of a single key informant seemed reasonable for the present study. Previous conclusions that single key informants do not add any systematic biases or greater perceptual errors in interfirm research makes the

choice more acceptable than it might seem (Cullen & Johnson, 1995). The use of these procedures and the fact that the multi-items used in the survey exhibit strong internal consistency means that the data from these single informants are reliable (John & Reve, 1982).

DATA COLLECTION

The present research collected primary data. Although some fairly large relational data base on alliances exists at the University of Limburg (Netherlands) and this has been used to study trust by at least one researcher (cf. Gulati, 1995), it was deemed inadequate to answer the research questions posed here. Several sources were checked to get access to alliances in the three industries. The sampling frame, which included North American based firms were drawn from a preliminary list compiled by researching secondary sources. The following industry publications were used:

Bioscan, Directory of Canadian Biotechnology Firms, Genetic Engineering and Biotechnology Related Firms Worldwide, The Yearbook on Corporate Mergers, Joint Ventures and Corporate Policy, Inter-Corporate Ownership and a large data base on over 5000 alliances maintained by *Recombinant Capital*, a California-based firm.

A preliminary list of alliances was generated from this initial search and further screening pruned out a few alliances that were no longer existing. The ten

interviews conducted involved firms in the Montreal metropolitan area. These firms were identified from the 1997 Canadian Biotechnology Directory. A list of 650 firms (representing 325 pairs of alliances) formed the population to which questionnaires were mailed.

STEPS IN DATA COLLECTION

Survey

There were three phases in the data collection. The data collection, from the first mailing to the cutoff, including the interviewing took seven months (November 1997- April, 1998). The first stage of the data collection started in October 1997. In the first phase, each informant was sent by first class mail, a packet containing a questionnaire, a solicitation letter and a self-addressed, stamped envelope (see appendix for copy of letter). There were no pre notification notes sent ahead of schedule. This was to cut down on the cost of mailing. Instead, in at least 46 cases where e-mail addresses of companies or informants were available, e-mail messages soliciting help and announcing the arrival of the questionnaires were sent 2 days prior to the mailing.

The accompanying letter addressed the objectives of the study. It reiterated the fact that no financial data was being sought. In addition, respondents were promised confidentiality and anonymity. At the end of the first full week, 8 questionnaires were received. Responses continued to trickle in after that.

The second step was the mailing of reminder notes to non-responding firms

(see appendix for copy). This was timed to arrive in the first week of January after the Christmas holidays. After this reminder, almost 35 percent of all the responses came in.

The third and final phase involved sending new questionnaires and reminder notes exclusively to firms for which only one pair responded but not the other. The reminder note stressed the fact that the researchers had received a response from one partner and that a response was needed to proceed with data analysis (see appendix for copy of letter). All correspondence was on university stationery.

Interviews

Nine of the interviews were conducted on the firms premises and one conducted in the Faculty Lounge of the Management Department, Concordia University, Montreal, Canada. The general framework of the study guided the development of the protocol used for the interviews. Questions were semi-structured to economize on time and revolve round already defined variables. However, since the objective here was to get qualitative impressions, the researcher made sure that the interviews were not unduly constrained by a priori categories. (See appendix for copy of interview questions).

RESEARCH INSTRUMENTS

(1) Questionnaire

Since the questionnaire was the primary tool for gathering the quantitative data, care was taken in its construction. As far as possible, and this is in most

cases, pre-existing instruments were used. In a few cases, some modifications were made and these are reported in the section on instrumentation. The final questionnaire sent out was carefully patterned on existing recommendations.

Following the lead of other researchers, a 7-point Likert type scale was used for all items to ensure higher statistical variability among survey responses (Saraph, Benson & Schroeder, 1989; Schonberger, 1983) and ensure higher response rates since Likert type scales are said to be simpler and easier to answer (Kidder & Judd, 1986).

The questionnaire was simple, relatively short and as self-explanatory as possible. Instructions were brief, with clear answer categories and the line of questioning avoided complicated skip patterns. The questionnaire was pretested on doctoral students in the Joint program, faculty, students in an executive MBA program and practicing managers. The Joint doctoral program comprises business faculty and doctoral students at McGill University, University of Montreal, University of Quebec and Concordia University, all in Montreal.

A cover letter soliciting informant cooperation identified the researcher as the Project Director. This cover letter identified the primary aim of the research, interfirm collaboration. The letter also mentioned the relevance of the study for practitioners. As well, it indicated the researcher's preparedness to share key findings with respondents. To reduce disincentives to participation, complete anonymity and confidentiality was assured as well as the fact that only aggregated, final findings will be compiled. The questionnaire itself was printed on quality paper with the

University logo on the front-page. A self-addressed and stamped envelope was included with each questionnaire to facilitate returns.

(2) Interview Protocol

A semi-structured interview guide was used to collect the qualitative data. See appendix 6 for a copy of the questionnaire)

Response Rates

Response rates to mail questionnaires are typically low and in case of dyadic research especially, the problems of low response are compounded and this has been noted by other researchers (Weitz & Jap, 1995). Of the 605 questionnaires mailed, 35 of them were returned as undeliverable because either the respondent had moved or changed addresses and their forwarding orders had expired. At first this seemed surprising given that the mailing addresses came from 1997 sources, but anecdotal insight from industry participants during the interview offered an explanation. In the case of small biotechnology firms in particular, there are very few fixed assets that tie firms to particular locations and rapid relocation the industry norm.

Of the remainder, 12 were returned unanswered with letters stating it was against company policy to take part in surveys while others invoked confidentiality clauses as the reason for not participating in the study. Two (2) of the returned questionnaires were only partially completed and deemed unusable. One (1) fully

completed questionnaire was rejected because the control identification on the questionnaire was wiped out by the respondent and so it was deemed unusable.

Thus, after taking out the undeliverable questionnaires, (650-35) we have an overall response rate of 39. 8%. Of these, 30% were pairs. The breakdown of the data is as follows: 128 responses of 64 pairs of alliances (dyads). Seventy one (71) responses were without the pair with a total of 191 usable responses.

Table 2
Sample Demographic Data

Average age	47
Average level of education	Graduate degree
Average Number of employees (range)	50 -100
Average annual revenue (range)	Between \$1-5 million
Male (%)	93%
Female (0%)	7%
Industry types	
Biotechnology	47%
Chemical/pharmaceutical	24%
Medical equipment	20%
Industrial & Commercial	
machinery	7%
Transportation and logistics	2%

Respondent characteristics

The characteristics of respondents are presented in table 2. Most of the respondents came from the ranks of top management, 48% of them indicated their titles as President/CEO; 39% were Senior management; 9% as other top management and 9% from middle management. The average age of respondents

was 47. Of these, ninety three percent, (93%) were male and the remaining 7% female. The average respondent had graduate education: 90.4% with graduate degrees, 8.5% with bachelor degree; 1% with post secondary education.

The sample base is made up of small and medium size firms. The average number of employees was between 50-100. Of these 48% had less than 50 employees and 28% had between 50 and 100 employees. The distribution across industries were less dramatic. Out of the total sample, 24% (n =46) were engaged in chemical, including pharmaceutical manufacturing. Forty-seven (47%, n =90) were engaged in biotechnology research and development. Twenty-percent (20%, n =36) were engaged in medical diagnostic and equipment manufacturing. Seven-percent (7% n =5) were engaged in industrial and commercial machinery manufacturing and two-percent (2% n = 7) in transportation and logistics.

The response rate of 39.8 percent may seem low, but this compares very favorably with the response rates in this type of research. It must be mentioned that several methods were used to increase the response rate. Besides the reminder notes, phone calls and e-mails were used to solicit greater participation.

The qualitative data comprised of ten interviews out of the 15 firms initially contacted (A response rate of 66%). Nine of these were conducted at the company premises. The other one was conducted in the part-time faculty lounge of the Department of Management, Concordia University. Nine of the interviewees were CEOs. On the average, each interview lasted for about one and a half hours. The

tapes were transcribed soon after the interviews. Mental and field notes made were all written down as soon as possible. In at least two cases, follow-up phone calls were made to seek additional clarification. All the interviews were conducted in the Montreal-Laval area in close proximity to the university to cut down on cost of travel.

Tests of Sample Representativeness

A non response analysis was conducted to determine the reasons for non-responses and sample representativeness. Two separate and related tests were conducted. First, a direct telephone contact of 50 randomly selected non responding firms from the original list was conducted. The main reason given for non response by firms was that they were simply too busy at that time, (60%). Another 28% indicated it was against company policy generally to complete any surveys. Others mentioned that they were simply unable to honor the many requests they get annually to complete surveys (11.5%). A small percentage invoked confidentiality (.05%). On the whole, since the overwhelming majority of non-responses were due to factors other than subject matter of the research, we can assume that the sample received constitutes the valid responses of the original total sample. Randomization of non-respondent direct contact treatments ensures a distribution of their responses over the total sample (Deshpande & Zaltman, 1982).

A second test for sample representativeness was conducted to determine if there was any systematic non response bias. Following Armstrong & Overton (1977) two groups of respondents were pooled. A sample of 20 early respondents

(these firms responded before reminder letters were sent and within three weeks of initial mailing) and 20 late respondents (these responded after 2 reminder letters). The two groups were compared with *t*-tests on the key variables of trust ($t = -1.04$, $p < .30$), relationship extendedness ($t = -.152$, $p < .11$) and previous experience ($t = 1.42$, $p < .16$). The results indicate that no significant differences were found. When further compared on demographic variables and no significant differences were found between the responding and non-responding firms, thus confirming that there was no significant non response bias in the sample. Kazanjian & Drazin (1989) in fact confirm that the profile of non respondents is likely to be more similar to that of late respondents than that of early respondents.

LIMITATIONS OF THE RESEARCH DESIGN

Common Method Variance

Since all the quantitative data were collected with the same survey instrument, the methodological nuisance of common method variance may occur. It has been determined that when two or more variables collected from the same source are correlated, the interpretation of the correlation may be called into question because of method variance (Campbell & Fiske, 1959; Podsakoff & Organ, 1986). The concern is that observed relationships between the variables may be a result of the measurement rather than hypothesized relationships between the constructs (George & Bettenhausen, 1990).

Some researchers have downplayed the ubiquity of this methodological nuisance (see e.g. Spector, 1987, 1994; Spector, Dwyer & Jex, 1988). Nevertheless, the present study attempted to ascertain if systematic errors that can introduce spurious correlations were present. Following the lead of other researchers (Blum, Fields & Goodman, 1994; Konrad & Linnehan, 1995) common method variance was tested using Harmon's one factor test. Factor analysis should indicate the existence of several as opposed to a single factor to rule out serious cases of method variance. The existence of multiple factors accounting for a sizable percentage of the variance among all the variables of the study will indicate that method variance will not appear to be a serious concern.

Using a principal components method, all the independent variables were factor analyzed. Six factors were extracted, explaining 72.82% of the variance. This suggests that method variance is not a major concern in this research.

With regard to the qualitative aspect of the study, it is noted that replicating the qualitative findings may not be easy but this is the general limitation of all qualitative studies (Todd, 1979). This section presented key aspects of the study design including descriptions of data sources and data collection methods. The next section focuses on how specific variables were measured.

SECTION 2

INSTRUMENTATION AND MEASUREMENT OF VARIABLES

This section focuses on the instrumentation and measurement of key variables in the study. These include the dependent, independent and control variables. The section also summarizes the treatment of the qualitative data.

Content Analysis of Qualitative data

The transcripts of the 10 interviews conducted were content analyzed. The primary method used was based on the thematic approach recommended by Miles & Huberman (1994). This form of content analysis is much akin to factor analysis. In the absence of a priori categories of constructs, a qualitative factoring procedure is used to reduce any initial data to smaller categories. The relevant literature is then used as a guide to derive the construct categories. Following this method, the transcripts were content analyzed for the presence of themes related to the antecedents of trust in economic exchange. In the present study conceptual categories were already identified in the form of variables.

The literature on trust reviewed in earlier chapters was then used as a guide to confirm whether the categories are consistent with prior theory and research. The propositions generated at the theory development stage also guided the derivation of the themes. Table 30 presents the results of the content analysis. Representative quotes as well as a summary of the themes related to each variable are presented.

DEPENDENT VARIABLES

Interfirm Trust

Interfirm trust is a criterion variable in the present study. Consistent with the theoretical and conceptual thrust of the present research, previous research has confirmed the validity of conceptualizing trust as an outcome variable (Anderson & Narus, 1990). Interfirm trust was measured by a 12-item, Likert-type scale, the Organizational Trust Inventory (OTI-Short Form) instrument developed by Bromiley & Cummings (1995).⁵ The instrument measures the affect, cognitive and intention to behave components of trust. A confirmatory factor analysis was used by the authors to validate the OTI-Short form. Since the OTI is a fairly new scale, the psychometric properties reported by the authors are stated here. From a LISREL analysis, the GFI=0.94, Bentler & Bonnet's (1980) Nonnormed Index= 0.97 and the item to factor correlations range from 0.75 to 0.94. This scale was chosen over other ones because it was deemed the most appropriate. Specifically, the word "trust" does not appear anywhere in the scale and that substantially reduces social desirability. In the case of measuring such an attitudinal variable, using such latent approaches is desirable (Creeds, Fabriger & Petty, 1994).

A comparable instrument is the one developed by Currall & Judge (1995) measuring trust between BRPs. Like the OTI, this instrument measures attitudes, intentions and behaviors, but item-to factor loadings are higher on the OTI.

⁵

The OTI is a copyrighted scale and written permission was granted by the authors for its use in this research.

Respondents were asked to indicate their agreement or disagreement on the following 12 items. (1= *Strongly Disagree*, 4= *Neither Disagree nor Agree*, 7= *Strongly Agree*. The items are as follows:

- PTRUST1: We think our partner tells the truth in negotiations
- PTRUST2: We think that our partner meets its negotiated obligations to our firm
- PTRUST3: In our opinion, our partner is reliable
- PTRUST4: We think our partner succeeds by stepping on other people (-)
- PTRUST5: We feel that our partner tries to get the upper hand (-)
- PTRUST6: We think that our partner takes advantage of our problems (-)
- PTRUST7: We feel that our partner will keep his word
- PTRUST8: We feel that our partner negotiates with us honestly
- PTRUST9: We think that our partner does not mislead us
- PTRUST10: We feel that our partner tries to get out of its commitments (-)
- PTRUST11: We feel that our partner negotiates joint expectations fairly
- PTRUST 12: We feel that our partner takes advantage of people who are vulnerable (-)

Items with negative signs besides them indicate these are reverse statements that were re-coded for data analysis. This variable, like the rest, was measured as the mean of all the trust item scores.

Performance

Performance of the alliance was measured by a 3-item scale. The items reflect subjective measures of performance. Although objective measures of performance (e.g. financial payoff from the relationship) seem preferable, there are several reasons for the use of subjective measures in the present research. First, there seems to be no epistemological imperative to base performance solely on objective criteria. Second, preliminary interviews during the questionnaire pretest

confirmed what is largely known that firm participation tends to be low when objective financial data is sought. Besides, disentangling financial performance in alliances is often a messy thing (Yan & Gray, 1994). Dess & Robinson (1984) recommend the use of subjective assessment where they are appropriate and when hard data are difficult to obtain. Finally, previous research has demonstrated the validity of using subjective measures in measuring joint venture performance (Geringer & Hébert, 1991; Killing, 1983).

Respondents were asked to indicate their agreement or disagreement on the following items (1= *Strongly Disagree*, 4= *Neither Disagree Nor Agree*, 7= *Strongly Agree*). The reversed item (-) was re-coded for data analysis.

- | | |
|-----------|--|
| PERFORM1: | Overall, we are very satisfied with the performance of this alliance |
| PERFORM2: | Our company's working relationship with this partner has been an unhappy one (-) |
| PERFORM3: | Overall, our expectations about this relationship have been met |

PREDICTOR VARIABLES

Open-endedness

The open-endedness of the relationship measures the partner's perception of the nature of the relationship. This variable was measured by a slightly modified version of a 5-item scale developed by Heide & Miner (1992). One item was dropped from the scale after the pretest of the questionnaire. The item reads: "Both

parties see this relationship as essentially evergreen." Respondents generally felt the item was ambiguous. This and similar opinions were expressed by a substantial number of respondents used in the pretest and it was deemed prudent to eliminate that item. Thus, open endedness was measured by a 4-item scale that measures a respondents' assessment of the open-endedness of the relationship. Respondents were asked to indicate the inaccuracy or accuracy of the following statements (1= *Completely Inaccurate*, 4= *Neither Accurate Nor Inaccurate*, 7= *Completely Accurate*.)

- EXTEND1: Both parties expect the relationship to last a long time
- EXTEND2: It is assumed that renewal of agreements in this relationship will generally occur
- EXTEND3: Our firm and its partner make plans not only for the current alliance, but also for the continuance of the relationship
- EXTEND4: We can describe the relationship with this partner as a long term relationship

Ex-ante Perceptions of Counterpart's Trustworthiness

This variable measures the partner's assessment of their counterpart's trustworthiness at the start of the alliance. It is a measure of belief. The nomological base of this construct is implicit and categorization theories and their effect on dyadic interaction (Lord & Maher, 1991; Smith, 1994), the notion of belief-driven sense making (Weick, 1995), as well as social psychological theories of self-fulfilling prophecies (Darley & Gross, 1983). A carefully worded instruction preceded the items. Respondents were reminded that the items related to opinion at the start of the relationship, and not at the time of the treatment (see appendix for copy of

questionnaire for full instructions on question 4, Initial Perceptions Section). Respondents were asked to indicate their agreement or disagreement on the following items (1= *Strongly Disagree*, 4= *Neither Disagree Nor Agree*, 7= *Strongly Agree*). The reversed item was re-coded for data analysis.

- EXPECT1: Our firm was fully committed to this alliance even before we got to know our partner very well
- EXPECT2: We often verified information our partner gave us at the start of this relationship (-)
- EXPECT3: We knew we could count on our partner from the start of the relationship
- EXPECT4: We had complete confidence in our partner from the very beginning of the alliance

Uncertainty

This construct was measured by a 3-item (Likert-type scale) measure developed for this study. The items are derived from existing conceptual and empirical work (e.g. Mayer et al. 1995; Pollock, 1994). Respondents were asked to indicate the predictability of three alliance related items (1= *Completely Unpredictable*, 4= *Somewhat Predictable*, 7= *Completely Predictable*).

- UNCERT1: Future financial investments required in this relationship
- UNCERT2: The future total costs associated with the alliance (including the costs of all projects related to the alliance)
- UNCERT3: The financial payoff (profitability) of the relationship

Industry Collaborative Norm

The nomological base for the items are based on institutional theories (DiMaggio & Powell, 1991) as well as theories of macro cultures (Marcus & Goodman, 1986; Abrahamson & Fombrun, 1994) and the related dominant logic concept (Prahalad & Bettis, 1986) as well as the concept of "industry recipes" (Spender, 1989). This proxy seems appropriate because trust rests on reflexive self monitoring and social control. Opportunistic behavior will be punished (Granovetter, 1985; Ben-Porath, 1980) but only when violations are known. Industry counterparts are more likely to be in touch with industry news. Hence where partners perceive that cooperation is legitimate, they are less likely to engage in behaviors that are capable of damaging their reputation.

The scale measures the respondent's estimation of how vital and legitimate collaboration has become in their industry and the extent to which they perceive collaboration has become a critical strategy for success in their own industry domains. Where this is the case, one can reasonably assume that such firms will most likely use the "recipe." It is preferable to ask CEOs their subjective evaluation of industry practice instead of using some objective measure because self-categorization theory (Porac & Thomas, 1994) suggests that the subjective perceptions of CEOs may be preferable to some objective measure when it comes to categorizing competitors and what they do. The variable was measured by a 5-item, Likert-type scale. Respondents were asked to indicate their agreement or disagreement (1= *Strongly Agree*, 4= *Neither Agree or Disagree*, 7= *Strongly Agree*)

with the following statements:

- CNORM1: Most managers in this industry tend to think alike on most industry-related issues
- CNORM2: Working in partnership with other firms is widely accepted in this industry
- CNORM3: Working in partnership with other firms has become a critical factor for success in our industry
- CNORM4: It is difficult for new firms to enter this industry
- CNORM5: Operating expenditures or fixed costs are high in this industry

Relationship Intensity

Relational intensity was measured by the frequency of meeting between representatives of the partners. Marsden (1990) suggests that frequency of interaction is one distinct aspect as relationship strength. At the same time, theory suggests that frequency of interaction can lead to affect (Krackhart, 1992). Respondents were asked to indicate the frequency of formal and informal alliance-related interaction. The assumption is that informal meetings will serve to undergird the formal relationship. The construct was measured by the following items on a 4-item, Likert-type scale(*7 Daily*, to *1 Rarely*).

- FREQ1: How frequently do you initiate alliance-related interaction with your partner?
- FREQ2: How frequently does your partner initiate alliance-related interaction with you?
- FREQ3: How frequently do you interact with your counterpart manager informally or socially
- FREQ4: How often do you interact formally with your counterpart?

CONTROL VARIABLES

Power (Interdependence)

This research attempts to control for the possibility that trust may be used as a façade for power. At least one call has been made for researchers to control for this possibility in studies on trust (Butler, 1991). A 4-item, Likert-type scale was used to measure this variable. Items were combined from Heide (1994) and Anderson & Narus (1990). Respondents were asked to indicate their agreement or disagreement on the following items with (1 = *Strongly disagree*, 4 = *Neither Disagree or Agree*, 7 = *Strongly Agree*)

- | | |
|-----------|--|
| MDEPEND1: | If the relationship with our counterpart was terminated, it would be relatively easy to find a similar partner |
| MDEPEND2: | If the relationship with our counterpart was terminated, it would not hurt our operations |
| MDEPEND3: | There are many firms providing the same services as our partner |
| MDEPEND4: | Finding a new partner will only require limited effort on our part |

Prior Experience

Experience teaches. Research suggests that partners actually learn how to manage interorganizational relations (Lane & Beamish, 1990). Firms that have experiences in alliances are more likely to know the factors that promote trust than those without any experience. Prior experience was measured by a single item: GPEXP1: How would you describe your firm's previous use of partnerships alliances in general? (1= *not substantial*, 7= *very substantial*).

Chapter Summary

This chapter presented the research design and methodology of the research. The steps in data collection as well as the instrumentation and measurement of the variables were presented.

CHAPTER 9

MEASURE PURIFICATION AND CONSTRUCT VALIDITY ISSUES

Chapter Summary

An exploratory factor analysis and an examination of item correlations (both within item and between item), means, standard deviations were used to purify the scales. After purifying the scales, uni-dimensionality was assessed by the presence of one factor in a principal component analysis that accounted for a substantial amount of the variance. All items retained also had a loading greater than 0.40 on the first factor with the theoretically correct sign. Internal consistency of the scales were assessed by calculating the Cronbach alpha. Prior to combining the data from both sides of the dyad, the degree of perceptual agreement between the pairs on key variables were assessed.

DATA SCREENING

Before proceeding with the data analysis, the data were carefully screened following the recommendations outlined in Tabachnick & Fidell (1989). The first step in the process was a visual inspection of the data for any obvious problems. The univariate statistics were inspected for accuracy of input and out of range values. Some data were re-entered. The means and standard deviations were also checked for plausibility. Variables were also checked for normality, linearity and heteroscedascity.

Prior to the analysis proper, tests were done to ensure that the assumptions

of multiple regression were not violated. The homogeneity of variance was also examined for the constructs. In a cross-sectional study, there is reason to suggest that tests of multi-collinearity, heteroscedasticity, linearity and normality of data are the more important assumptions among the Guss-Markov assumptions associated with regression.

Up-front, one should not expect multi-collinearity to be a serious problem in research using cross-sectional data. Mason & Perreault's (1991) analysis suggest that in most typical cross-sectional research, fears about the harmful effects of multi-collinearity are exaggerated. Cohen (1975) also suggests that moderated regression analysis allows for testing regression equations with cross-product terms even when there is serious multi-collinearity problems. Collinearity is generally agreed to be present if there are shared variances between the predictor variables. Since serious collinearity between the predictor variables can inflate the variances of the regression coefficients (Stewart, 1987), tests were conducted to determine if collinearity is a serious problem and if this was the case, appropriate remedies applied to the data before the analysis.

The preliminary test was an observation of the pattern of correlations between the predictor variables. The presence of one or more large bivariate correlations (0.8 and 0.9 is commonly used as cutoffs), would indicate strong associations suggesting multi-collinearity will be a problem (Mason & Perreault, 1991). An examination of the bivariate correlations did not suggest that strong collinearity is a problem, but since the correlation matrix will not reveal collinearity

involving more than two variables, some additional tests were done.

Two separate statistical tests were conducted to see if this problem applies to this research. First a variance inflation factor (VIF) was computed for all the predictor variables ($VIF = 1 - R^2$)-1. A VIF of individual predictors greater than 10 is thought to signal harmful collinearity (Neter, Wasserman & Kutner, 1990). According to Neter et al. (1990) the largest VIF among all the predictor variables is often used as an indicator of the severity of multi-collinearity. The largest VIF was 2.01 for the construct "Relationship Intensity." The mean VIF for all the predictors were also not considerably larger than 1.

Second following Mason & Perreault, (1991) each predictor variable was regressed on the other predictor variables to detect linear relations among the variables. Since none of the R^2 s for the relationships among the prediction variables exceeded the R^2 for the overall model, multi-collinearity was not considered a serious problem.

Next, tests were conducted to test the normality of the data. Plots of predicted values of the dependent variables against residuals were got via the SPSS regression plot function. An examination of the residuals scatter plots provided the tests of the assumptions of normality, linearity and homoscedasticity between the predicted dependent variable scores and errors of prediction. In addition, Cooks Distance, studentized deleted residuals were examined to see whether there are any influential outliers that should be deleted. Cases with Cooks Distance greater than one are suspected to be outliers (Tabachnick & Fidell, 1989).

Upon examination of the output, no outliers were considered influential enough to warrant deletion. The criteria applied to determine influential outliers was whether the studentized deleted residual exceeded 1 since the sample size is fairly small.⁶

MISSING DATA

It must be stated that missing data was not a serious problem with the data. One questionnaire that was less than half completed was rejected outright. Of the rest, 6 of the 13 constructs had some missing data. The variable name and missing data were as follows (initial perception had one =1 missing; performance=1 missing; trust= 4 missing; referrals= 2 missing; relational intensity=3 missing). Cohen & Cohen (1983) make several suggestions for dealing with missing data. In this research, the means of the responses was used as the method for replacing missing data. It is accepted that this is a conservative procedure (Tabachnick & Fidell, 1989).

Using alternative methods such as case-wise or pair-wise deletion would have resulted in loss of data. An alternative such as a substitution method could have been used but with data from two pairs with single respondents per firm and the research interest in studying the differences and agreements on relational issues, the mean method seemed acceptable.

To cross check the desirability of using the means, descriptive statistics were

⁶

Neter et al. (1990) recommend this criteria for small to medium sized sample and for large data sets the formula $2\sqrt{p/n}$ to detect influential outliers.

calculated for the data with and without the missing values following the recommendations of Tabachnick & Fidell (1989). As expected, there was some reduction in the variance scores of constructs when missing values were replaced, but the means with or without missing values varied in negligible proportions. The construct TRUST was used as a test case to gauge the appropriateness of using the mean because it had the highest number of missing values. The results presented in Table 3 show no marked differences. The means with the missing values replaced and without the missing values replaced are the same (58.57) while the standard deviation is 12.51 when $n = 187$ and 12.38 when $n = 191$. The variance is 156.74 when $n = 187$ and when missing values were replaced, the variance is 153.44. The results show that the choice of the mean method to replace missing values is appropriate.

Table 3
Means, standard deviations and variance of variables with
and without missing values

VARIABLE (TRUST)	MEAN	STANDARD DEVIATION	VARIANCE
WITH MISSING VALUES(N =187)	58.57	12.51	156.74
MISSING VALUES REPLACED (N =191)	58.57	12.38	153.44

PURIFYING THE MEASURES

It is imperative that an assessment of the reliability and validity of the measuring instruments precede any data analysis (Churchill, 1979). Thus, this research examined the values of the measuring instruments before data analysis. The rest of the chapter presents a discussion of tests of both the reliability and validity of the constructs.

RELIABILITY

Selltiz, Wrightman & Cook (1976) suggest that the reliability of any measurement procedure consists of estimating how much of the variation in scores of different variables is due to transitory influences. Thus, reliability addresses how much of the variation is attributable to chance or random errors. Measures are therefore reliable to the extent that independent but comparable measures of the same construct of a given object agree. A reliable measure also exhibits internal consistency (Churchill, 1979).

The internal consistency reliability of all measures used in this research relied on the estimation of Cronbach alpha, α (Cronbach, 1951; Nunnally, 1967). As Churchill (1979) indicates, the coefficient alpha is the basic statistic for determining the reliability of a measure based on internal consistency. It is noted that the main limitation of the coefficient alpha is that it cannot adequately estimate errors caused by factors external to the instrument such as differences in testing situations and

respondents overtime (Churchill, 1979: 70). Nonetheless, it is deemed appropriate as a measure of reliability.

Table 4 reports the values of Cronbach α for the multi-item constructs in the study. A number of single-item measures are used and no alphas are reported for them. Although multi-items are preferable to single measures, some variables were measured by single items where they were deemed appropriate for capturing the intent of respondents. For example, turnover in role persons was measured by a single item. Nonetheless, the limitations of single measures are acknowledged.

TABLE 4
RELIABILITY COEFFICIENTS (CRONBACH α) FOR MULTI-ITEM SCALES USED
IN MODEL
(Sample: managers)
N=191

Var/scale	No. of items	Mean	SD	Reliability(Cronbach α)
Interfirm Trust	12	62.74	13.50	0.93
Initial Perception	3	15.41	3.27	0.88
Open-endedness	4	19.31	5.01	0.88
Interdependence	4	11.15	4.45	0.76
Collaborative Norm	3	17.33	2.37	0.80
Relational intensity	3	12.49	2.94	0.77
Performance	3	14.65	4.79	0.91
Referral	4	4.72	2.81	0.75
Uncertainty	3	11.02	3.39	0.83

Four single measures were used in the study. These are the (1) measure of partner's future intention on alliances, (2) partner's previous partnering experience, (3) whether there has been turnover in the contact persons since the relationship started and (4) whether the partners compete directly in the same product market. Table 5 presents a summary of these variables.

Table 5
Summary of Single-Item Variables

Var/Scale	Mean	Standard Deviation
Turnover in BRPs	0.30	0.46
Previous alliance experience	4.31	1.48
Future intention	5.39	1.50
Product market competition	0.77	0.41

The reliability of the multi items are generally high, indicating that the measures of the study are reliable. Nunnally (1967) suggests that reliabilities of 0.50 to 0.60 suffice for early stages of basic research. Using that criteria, and 0.50 as a threshold for what is acceptable reliability, it can be seen that all the variables for

which α was computed exhibit good reliabilities.

CONSTRUCT VALIDITY

According to Churchill (1979) construct validity is most directly related to the question of what the instrument is in fact measuring. It is important to assess the validity of measures because consistency is a necessary, but not a sufficient condition, for construct validity (Nunnally, 1967). Following Churchill, two approaches were used to determine the construct validity of the measures: (1) the extent to which the measures correlate with other measures designed to measure the same thing and (2) whether the measures behave as expected. In the first case, both the convergent and discriminant validity of the scales were assessed and in the second case, the theoretical or nomological validity of the scales were assessed.

Convergent Validity

To determine convergent validity of the measures, inter-item correlations were computed and examined for all the variables. The correlations are in the expected direction and are significant, indicating that a strong measure of validity exists in the scales and that they measure what they are supposed to be measuring. The corrected item-total correlations for all the constructs were also high. For example, initial perception items had item-to-total correlations in the range of 0.69 to 0.89 while the scores for trust range from 0.68 to 0.80. The construct interdependence has, on average, the lowest scores. They ranged from 0.46 to 0.61. Overall, the results suggest an acceptable level of convergent validity. The

generally high alphas also indicate strong convergent validity (alphas range from 0.75 to 0.93).

Discriminant Validity

Campbell & Fiske's (1959) multi-trait, multi method approach to assessing convergent and discriminant validity is of course the paradigm example. The present research does not lend itself to that original test but a related test of convergent validity was done.

Based on Campbell and Fiske (1959), discriminant validity was assessed by comparing the within-item and between-item correlations. Discriminant validity is present when within item correlations are higher than between-item correlations. This pattern is clearly discernable by an examination of within-construct and between-construct correlation matrices. For example, the within-item correlations for the variable EXPECTATION (EXPECT) are generally higher than those of the same construct correlated with OPEN ENDEDNESS (EXTEND). The correlation between EXPECT1 and EXPECT3 is ($r = 0.72$ $p \leq .01$) while the correlation between EXPECT1 and EXTEND3 is $r = 0.21$ $p \leq .01$). Similar results pertain to the other variables.

Theoretical/Nomological validity

The theoretical validity of the constructs were determined by examining the correlations between some select constructs for confirmation based on existing theory. If a relationship between two constructs is established in theory and the measures of these constructs behave as expected with respect to each other, the

nomological validity of the measure is supported. It must be noted, however, that the distinction between construct validation and theory testing is rather arbitrary and that this simple criterion is subject to multiple interpretations (Peter, 1981). The correlation matrix generally confirms that the items are theoretically valid. For example, as predicted, open-endedness has a positive relationship with trust ($r = .59, p \leq .01, n=191$). This is consistent with related findings that suggests open-endedness should be positively related to trust (Schelling, 1960). Consistent with the hypothesis in the study, there is a positive relationship between trust and performance, ($r = .78, p \leq .01, n= 191$). This finding is also consistent with earlier ones (Yan & Gray, 1994; Killing, 1983).

FACTOR ANALYSIS

To confirm the unidimensionality of the constructs, an exploratory factor analysis was undertaken as another step in purifying the measures. An examination of scree plots, Eigen values factor loadings and the interpretability of loadings were used as the criteria for item purification. All retained factors had eigen value greater than 1. All items with loadings less than 0.5 were automatically dropped. The items CNORM4, in the collaborative norm variable; FREQ 3 in the relational intensity variable were dropped because they both had a factor loading less than 0.5. Initially, two factors were extracted for the construct TRUST. A maximum likelihood extraction and varimax rotation were done. An interpretation of the loadings and the scree plot suggested that retaining one factor was preferable

to two factors. Table 6 presents the results of the factor analysis.

Table 6				
Factor Analysis Results for Multi-items: Principal Components Method				
Construct	Item	Factor	Eigenvalue	% of Variance Explained
PERFORMANCE	PERFORM1	0.89	2.56	85%
	PERFORM2	0.79		
	PERFORM3	0.86		
UNCERTAINTY	UNCERT1	0.67	2.27	75.8%
	UNCERT2	0.80		
	UNCERT3	0.80		
OPEN ENDED- NESS	EXTEND1	0.77	3.04	76.1%
	EXTEND2	0.67		
	EXTEND3	0.74		
	EXTEND4	0.84		
COLLABORATIVE NORM	CNORM1	0.70	2.28	76.0%
	CNORM2	0.82		
	CNORM3	0.75		
INTER- DEPENDENCE	MDEPEND1	0.67	2.47	61.96%
	MDEPEND3	0.67		
	MDEPEND4	0.66		

RELATIONSHIP INTENSITY	FREQ1	0.80	2.11	70.59%
	FREQ2	0.77		
	FREQ4	0.53		
INTERFIRM TRUST	PTRUST1	0.77	7.2	60.50%
	PTRUST2	0.68		
	PTRUST3	0.76		
	PTRUST4	0.64		
	PTRUST5	0.70		
	PTRUST6	0.62		
	PTRUST7	0.80		
	PTRUST8	0.77		
	PTRUST9	0.60		
	PTRUST10	0.61		
	PTRUST11	0.64		
	PTRUST12	0.77		
INITIAL PARTNER PERCEPTION	PCT1	0.73	2.47	82.5%
	PCT3	0.90		
	PCT4	0.83		

AGGREGATION OF DYADIC DATA

Prior to aggregating the data for the pairs, analysis was done to see the extent to which the partner's perceptions converge on the constructs that make up the study (*t*-tests were conducted). As Table 7 indicates, there was a rather broad agreement between the partners on several constructs. With the exception of previous experience, interdependence, and initial perception, there were no significant differences. The results further supported the decision to include interdependence and previous experience as control variables. The fact that

partners did not agree on initial perception is hardly surprising but this has important research implications.

Table 7						
ASSESSMENT OF DEGREE OF PERCEPTUAL AGREEMENT/DISAGREEMENT BETWEEN PARTNERS ON VARIABLES N=128 (64 pairs)						
Variable	<i>Category 1⁷</i> <i>Firms</i> Mean SD		<i>Category 2</i> <i>Counterpart</i> Mean SD		t-test	p-value (2-tailed)
Previous Experience	4.76	1.87	3.85	1.28	3.19	.00
Uncertainty	9.23	3.48	8.23	3.04	1.72	.08
Interdependence	11.53	4.77	7.74	2.44	5.65	.00
Initial Perception	10.41	2.89	12.56	1.85	-4.99	.00
Performance	9.80	3.75	10.95	3.95	-1.67	.09
Referrals	5.76	3.68	5.40	3.04	0.59	.55
Relational Intensity	9.99	2.81	9.75	2.65	0.49	.62
Trust	53.59	14.47	55.95	11.04	-1.01	.31
Future Intent	5.15	1.76	5.12	1.49	0.10	.91
Open endedness	4.42	1.58	4.47	1.22	-1.49	.13
Turnover in BRPs	0.40	0.49	0.39	0.49	0.17	.85
Collaborative norm	12.72	2.45	13.86	1.16	-3.37	.00
Product Market Competition	0.73	0.44	0.76	0.42	-.36	.71

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The notation Category 1 and 2 are arbitrary. Firms in category 1 are firms whose questionnaires were received first. Firms in category 2 are counterparts of category one firms.

As is clear from Table 7, there is a fairly high degree of perceptual convergence on most of the variables. In the exception of past experience, perceptions of interdependence, perceptions of the partner's trustworthiness ex-ante and the extent to which partners believe collaboration is an industry recipe, there are no significant differences on other variables. These results have implications for some hypotheses. For example, the fact that there are perceptual differences in perceptions of collaboration has implications for the moderating role proposed for this variable in the present study. In other cases, the differences are not surprising.

This research uses one specific method to arrive at the degree of perceptual convergence but issues surrounding the choice of method in this type of situation are far from being resolved. This issue is briefly discussed.

The methodological problems associated with using dyadic data have been noted (Weitz & Jap, 1995). In this particular case, computing a score for the dyads is much akin to issues that face researchers when they use multiple respondents per firm. Kumar, Hibbard & Stern (1994) suggest two primary methods that can be used to combine the scores for the pairs- the "aggregation" approach and the "latent trait" approach. The aggregation approach pools the scores from each respondent and creates a score for the dyad by averaging their responses to each variable. The latent trait approach treats the two responses as indicators of a latent construct that can be modeled using structural modeling techniques such as LISREL.

The present research opted for an “aggregation” approach to deriving the dyadic score. Using this approach, all measures were derived by averaging the responses to each item in a particular scale for the pairs. This approach has been used by other researchers (e.g. Anderson & Weitz, 1992; Kaufman & Stern, 1988). Kumar, Hibbard & Stern (1994) in choosing the aggregation approach over the latent trait approach note that the aggregation approach reduces random error but not necessarily systematic error in the form of respondent bias. This type of bias is only diminished if the method factors are uncorrelated (Rousseau, 1985). Research suggests that since informant bias factors are uncorrelated (Anderson & Narus, 1990; Marsh & Bailey, 1991) the implication is that systematic error may then be less as well (Siguaw, Simpson & Baker, 1997), thus, making the use of the aggregation approach an acceptable method for aggregating dyadic data.

Chapter Summary

This chapter presented the research design of the study. It also presented the instrumentation, including the reliability and validity of constructs. In addition, the perceptual convergence of dyads on variables were assessed prior to data aggregation.

PART FOUR

DATA ANALYSIS, DISCUSSION AND CONCLUSIONS

CHAPTER 10

DATA ANALYSIS

Chapter Summary & Prefatory Remarks

This chapter presents the data analysis and results of the study. Most of the hypotheses were tested twice, first with the sample comprising the dyads (N=64 for 128 respondents) and then a test with the total sample (N=191) and second, the qualitative data from a thematic content analysis (Miles & Huberman, 1994) is used to triangulate the results. Representative quotes and narratives taken from the qualitative data are used to expand on the quantitative results. Ordinary least-square regression and correlation were the primary modes of analysis used in the data analysis. All directional hypotheses were tested using a one-tail test following Davis (1991).

On the whole, the full model, including the independent and control variables, and the interaction terms, yielded a significant prediction of trust from the variables in the study ($R = 82.4\%$, $R^2 = 67.9\%$, Adjusted $R^2 = 65.6\%$, $F = 28.83$, $p < .001$, $n = 191$) and for the dyad as the unit of analysis ($R = 90\%$, $R^2 = 81\%$, Adjusted $R^2 = 77\%$, $F = 17.37$, $p < .001$, $n=64$). Tables 12 and 13 present the results of the full models.

Table 8 provides the descriptive statistics of the study. The means, standard deviations, and inter-correlations, coefficient alphas for the study variables (table 8 for dyadic sample and table 9 for full sample) are all presented.

Table 8.
Means, Standard Deviations, Pearson Correlations for Dyads
N=64 pairs (128 INDIVIDUAL FIRMS)

	Mean	Standard Deviation	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
D1	4.60	1.26	0.88											
D2	5.14	1.34	.55**	1.00										
D3	9.64	2.65	-.24	-.00	0.76									
D4	11.50	1.76	.33**	.28*	-.10	0.88								
D5	10.39	3.63	.56**	.57**	-.26*	.18	0.91							
D6	4.31	1.28	.10	.00	-.08	-.00	-.18	1.00						
D7	9.57	2.48	.32**	.32**	.00	.22*	.31**	.05	0.77					
D8	54.87	11.80	.55**	.83**	-.11	.29**	.75**	-.10	.39**	0.93				
D9	8.73	3.07	.20	.22	-.12	.14	.31**	.23	.25*	.34**	0.83			
D10	5.57	3.02	.00	-.00	.01	.07	.06	-.05	.07	-.03	.20	0.75		
D11	0.39	0.349	.00	.06	.26*	.19	-.23*	.23*	-.01	-.05	.06	.11	0.80	
D12	13.29	1.44	-.18	-.26*	.05	-.15	-.27*	.10	.01	-.24**	-.10	-.12	-.01	1.00
D13	0.74	0.43	.22*	.27*	-.19	.08	.22*	-.03	-.08	.34*	.03	.03	.02	.18
	* p<0.05	**p<0.01	***p<0.001											
D1	=open-endedness (DEXTEND)													
D2	= future intention (DYFINT)													
D3	= interdependence (DYINDEP)													
D4	=initial perception (DYPERCEP)													
D5	=performance (DYPERFOR)													
D6	=previous alliance experience (DYPREV)													
D7	=relational intensity (DYINT)													
	D8 =trust (DYDTRUST)													
	D9 =uncertainty (DYCERTY)													
	D10 =referral (DYREF)													
	D11 =brp turnover (DYBRPTO)													
	D12 =collaborative norm (DYDNorm)													
	D13 =product market competition (DYMKCOMP)													

Table 9.

Means, Standard Deviations, Pearson Correlations for Total Sample
(N = 191)

	Mean	Standard Deviation	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
D1	4.82	1.25	0.88												
D2	5.39	1.50	.45**	1.00											
D3	9.21	3.74	-.22**	-.08	0.76										
D4	11.96	2.41	.35**	.20**	-.21**	0.88									
D5	11.55	3.71	.60**	.52**	-.28**	.30**	0.91								
D6	4.31	1.48	.05	.06	.03	-.02	-.11	1.00							
D7	9.86	2.35	.24**	.19**	.01	.10	.23**	.06	0.77						
D8	58.57	12.38	.57**	.70**	-.18**	.37**	.77**	-.02	.25**	0.93					
D9	8.69	3.11	.13	.15*	-.00	.26	.22**	.22**	.19**	.25**	0.83				
D10	5.19	2.98	-.10	-.07	-.02	.03	-.05	.00	.06	-.14	.11	0.75			
D11	0.30	0.46	-.05	.00	.18*	.02	-.25*	.16*	.06	-.12	.10	.11	1.00		
D12	13.34	1.76	-.02	-.11	-.02	.10	-.12	-.03	-.00	-.13	-.13	-.10	.11	0.80	
D13	0.77	0.41	.20**	.24**	-.05	.11	.26*	-.07	-.04	.32**	.03	-.03	-.00	-.08	1.00

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

D1 = open-endedness (EXTEND)

D2 = future intention (GFINT)

D3 = interdependence (INDEP)

D4 = initial perception (PERCEP)

D5 = performance (PERF)

D6 = previous alliance experience (GPREXP)

D7 = relational intensity (RINT)

D8 = trust (TRUST)

D9 = uncertainty (CERTY)

D10 = referral (REF)

D11 = brp turnover (BRPTOV)

D12 = collaborative norm (CNorm)

D13 = product market competitors (MKCOMP)

TESTS OF HYPOTHESES

Test of Hypothesis 1[H1]

Hypothesis 1 (H1): Industry-related third party referrals will be positively associated with trust between partners, ceteris paribus.

Hypothesis 1 predicted that reliance on referrals from third parties, in this case industry-related third parties, would have a positive impact on trust. This hypothesis, as well as most of the remaining ones, was tested in three ways. First by examining the correlations between referral and the trust constructs. Second by regressing trust on referrals. In the regression model, both interdependence and previous experience were entered as control variables. Finally, qualitative impressions were used as a between-method triangulation tool (Todd, 1979).

Contrary to expectations, the results of the analysis do not indicate that the reliance on third party referrals for choosing a partner was a substantial factor on the amount of trust that emerged in the relationship. This hypothesis was therefore not confirmed ($r = -.03$, n.s., $n=64$). In the case of the full sample, referrals show a negative but weak relationship to trust ($r = -.14$, $p < .05$, $n = 191$) This hypothesis was also tested with multiple regression. Referral had no significant relationship with trust

($b^d = -.05$, $t = -.74$, n.s. $n=64$.) in the case of the dyad, as well as in the total sample ($b = -.09$, $t = -1.83$, $p < .06$, $n = 191$). The results of the analysis are presented in Tables 19 & 20.

The qualitative data sheds some light on this hypothesis. It seems that although firms get information about prospective partners from industry sources, such information plays a negligible role in the emergence of trust subsequently. Thus what may be called “reference trust” is probably nothing more than some form of non-relational infrastructure or relational capital. Referrals may buy transacting parties initial goodwill but play a less important role in how trust emerges. A manager declares “Yes, we ask around about prospective partners. But in the end, how we relate to our partner depends on what we see as the relationship unfolds.”

Another manager concedes that personal contacts made through networking plays some role in the decision to ally but when it comes to the real relationship between the two partners third party links in general seem to play a minimal role. In essence, what these statements suggest is that a recursive model may best capture the relationship between referrals and trust in the sense that the importance of referrals diminishes as the relationship continues. This should make intuitive sense since the partners now have a direct basis to evaluate each other after they have been together for sometime.

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Betas reported in the text are standardized coefficients. Both the unstandardized and standardized coefficients are reported in tables in the appendix.

Test of Hypothesis 2a [H2a]

Hypothesis 2a. Venture related uncertainty will be positively associated with trust in a strategic alliance.

This hypothesis posits a positive relationship between trust and uncertainty. The results for both the dyadic sample and full sample confirm that uncertainty is positively associated with trust in an alliance ($r = .34, p < .01, n=64$) for the dyadic sample and ($r = .25, p < .01, n=191$) for the total sample. This hypothesis was also tested with multiple regression. In a model, in which the degree of interdependence and previous alliance experience were controlled for, uncertainty had a positive relationship to trust ($b = .20, t = 3.4, p < .001, n = 191$) for total sample and ($b = 0.29, t = 2.7, p < .05, n=64$, for the dyadic sample). The results of the analysis are presented in Tables 15 & 16.

The qualitative data sheds some light on why this may be so. Content analysis of the interview results point out that partners have no choice but to work closely together when they realize that the relationship places enormous challenges on partners. The data indicates that partners consistently regarded their exchanges as highly risky and full of uncertainty and yet trust was consistently ranked high as a necessary ingredient for a successful partnership. These impressions generally confirm both the theory presented and the survey results.

Test of Hypothesis 2b [H2b]

Hypothesis 2b. Relational intensity partially mediates the positive relationship between uncertainty and trust such that some of the effects of uncertainty on trust will be due to the presence of frequent interaction between the partners.

This hypothesis posits that part of the effect of uncertainty on trust will be due to the frequency with which partners interact. The test of a mediating situation is conditional on a number of things. Baron & Kenny (1986) provide the criteria for tests of a mediator. They note that a variable operates as a mediator when (1) variations in the mediator significantly account for variations in the criterion variable (2) variations in the mediating variable account for variations in the predictor variable (3) when relationship (1) and (2) are controlled for, a previous significant relationship between the predictor and criterion variable is no longer significant. This will be a perfect mediation. Where the significance is less, we have partial mediation.

As predicted, frequency of interaction partially mediated the relationship between uncertainty and trust. Two preliminary results established the criteria required to test for mediation (Baron & Kenny, 1986). First H2a was confirmed. Second relational intensity and uncertainty are positively correlated ($r = 0.25$, $p < .001$, $n = 191$). In a regression model, ($R^2 = 0.67$, Adjusted $R^2 = 0.06$, $p < .001$, $n = 191$). The results for the test of mediation are presented in Table 26. The results show a reduction in the relationship between uncertainty and trust after relational

intensity is controlled for. There is a reduction in the betas (for uncertainty, the full model $\beta = .27$, the reduced-model $\beta = .23$, and $\beta_{\text{reduced}} - \beta_{\text{full}} = .04$). At the same time, the R^2 for the full model increased from 0.10 to 0.15 (Adjusted $R^2 = 0.13$, $F = 8.5$, $p < .000$). Since the later weight of $b = .23$ is still significant at $p < .001$, relational intensity only partially mediates the uncertainty-trust relationship, thus confirming the hypothesis. The general theme from the qualitative data is that partners tended to interact more often when they sense that the relationship was characterized by high risk and uncertainty.

Test of Hypothesis 2c [H2c]

Hypothesis 2c. There is an inverted U-shaped curvilinear relationship between uncertainty and trust such that the relationship between trust and uncertainty is positive up to a point beyond which greater uncertainty will lead to reduced trust in the relationship.

This hypothesis posits a non-linear relationship between uncertainty and trust, thus suggesting that there may be a range beyond which uncertainty is considered too high and the risk too large for trust to emerge. A test of curvilinearity was conducted. The formula for the test is:

$$\text{TRUST} = \text{UNCERTAINTY} + (\text{UNCERTAINTY})^2$$

A two step process was followed. In the first step, uncertainty and the control

variables, previous experience and interdependence were entered in a regression equation. In the second step, uncertainty squared was entered. The increment in R^2 was then tested for statistical significance. The results are presented in Table 24 and figure 4 is a diagrammatic representation of the curvilinear relationship. As expected, an inverted U-shaped curvilinear relationship exists between uncertainty and trust. The equation is significant ($b = -.96$, $t = -3.03$, $p < .01$). The model is also significant ($R^2 = .10$, Adjusted $R^2 = .09$, $F = 11.54$, $p < .000$).

Test of Hypothesis 3 [H3]

Hypothesis 3 (H3): Open-endedness of a relationship between partners will be positively associated with trust.

This hypothesis taps at a structural source of trust. It suggests that partner perceptions of the nature of the relationship affects behaviors and trust. Specifically, where the relationship is perceived by the partners as a long one, whether in reality or in terms of possibilities, trust should be present in such a relationship. Again, the reader is reminded that extendedness in itself is not what leads to trust but the possibilities it presents for partners to engage in trust building behaviors as well as engage in reflexive self-monitoring and a measure of dyadic social control. The results of the analysis confirm the hypothesis. The correlation results show that open endedness is positively associated with trust ($r = .57$, $p < .001$, $n = 191$) and for the dyads ($r = .55$, $p < .01$, $n = 64$). In the second test with multiple regression, open

endedness was again positively associated with trust ($b = .53$, $t = 8.9$, $p < .000$, $n = 191$) and for the dyad ($b = 0.52$, $t = 4.96$, $p < .000$, $n = 64$) with interdependence and previous experience controlled for. In a model in which a grouping of the structural sources of trust (uncertainty and open endedness) were entered as predictors, open endedness was positively related to trust. The model as a whole is significant. For the total sample, ($R = .61$, $R^2 = .37$, Adjusted $R^2 = .36$, $F = 28.20$, $p < .000$, $n = 191$) and for the dyads ($R = .63$, $R^2 = .40$, Adjusted $R^2 = .36$, $F = 10.18$, $p < .000$, $n = 64$). The Tables 15 & 16 provide the results of the analysis.

The qualitative data was then examined to see if there are some additional explanations for this result. Overwhelmingly, respondents indicated that relations that had long term implications were often taken more seriously than relationships that were considered tentative, suggesting that partners generally attached a greater level of commitment in relationships that were considered open-ended. A CEO of a major Canadian pharmaceutical concern notes, "It's like a marriage, you have to be in it for the long haul. Such long term thinking is helpful." What is interesting though is the general perception that people are wary of open-ended relations in spite of the appreciations of its positive benefits.

Test of Hypothesis 4

Hypothesis 4 (H4): Partner future intentions on alliances will be positively associated with trust in a current relationship.

This hypothesis is based on game-theoretic reasoning. It posits that the future intentions of partners will be related to their current behavior which in turn should affect trust building in an on-going relationship. As expected, there is a positive relationship between trust and future intention ($r = .83$, $p < .01$, $n = 64$) and for the total sample ($r = .70$, $p < .01$, $n = 191$). The second test of the hypothesis was by regression. Controlling for interdependence and previous experience, future intention was positively associated with trust ($b = .83$, $t = 11.5$, $p < .000$, $n = 64$) and for the total sample ($b = .68$, $t = 13.47$, $p < .000$, $n = 191$). Tables 19 & 20 presents the results of this analysis. The variables, future intention and referrals were grouped as exogenous variables in the sense that they are not strictly relational in the current relationship. Overall, this model is significant ($R = .72$, $R^2 = .52$, Adjusted $R^2 = .51$, $F = 51$, $p < .000$, $n = 191$) and ($R = .84$, $R^2 = .72$, Adjusted $R^2 = .70$, $F = 38.20$, $p < .000$, $n = 64$).

The qualitative data provides corroborating support for this finding. There was some unanimity among respondents on the fact that partnering has become very important in the industries surveyed. The general theme was that most firms are likely to engage in alliances at some point in the future. Thus asking respondents how likely they think they will use alliances again in the future seems appropriate to ascertain their future intention. Remember that interest is only on how future intention affect current relations. For the sake of this research and hypothesis specifically, it matters little whether firms actually use the alliances in the future.

Test of Hypothesis 5[H5]

Hypothesis 5 (H5): Direct market competition between partners in an alliance will be negatively associated with trust.

This hypothesis posits a negative relation between direct market competition between alliance partners and trust. Contrary to expectations, direct market competition did not negatively relate to trust in the relation. In fact, there is a positive relationship between direct market competition and trust. The results from the correlation matrix shows a positive relationship between direct market competition and trust ($r = 0.34$, $p < 0.05$, $n = 64$) and ($r = 0.32$, $p < 0.01$, $n = 191$). The hypothesis was also tested by regression. While controlling for interdependence and previous experience, direct market competition was positively related to trust ($b = .33$, $t = 2.72$, $p < .05$, $n = 64$) and ($b = .32$, $t = 4.8$, $p < .000$, $n = 191$). The results are presented in Table 28 and 29. A number of respondents indicated that they did not necessarily consider direct market competition between their firm and that of the counterpart firm as a stumbling block in trust building although there was the awareness that trust between competitors was difficult. Others were emphatic in their view that trust would simply not emerge between direct competitors. In the present study, the quantitative data supports the former position.

Test of Hypothesis 6a[H6a]

Hypothesis 6a (H6a): Partner initial perceptions of their counterparts' trustworthiness will be positively associated with trust.

This hypothesis tests the partner's perceptions of their counterpart's *trustworthiness* at the start of the relationship. It posits that expectations will be positively associated with trust. The pathways through which this works is through viewing trust as a process of sense making and the expanded conceptualization of self-fulfilling prophecies (Weick, 1995). As predicted, there is a positive relationship between expectations and trust ($r = .29$, $p < .01$, $n = 64$) and ($r = .37$, $p < .01$, $n = 191$). This finding was again confirmed with multiple regression. When controlling for interdependence between the partners, initial perception is positively related to trust ($b = .28$, $t = 2.3$, $p < .05$, $n = 64$) and ($b = .34$, $t = 5.0$, $p < .000$, $n = 191$). Tables 17 & 18 presents the results of the analysis. Overall, the model is significant ($r^2 = .15$, Adjusted $R^2 = .13$, $F = 10.9$, $p < .000$, $n = 191$) and for the dyadic data ($R = .32$, $R^2 = .10$, Adjusted $R^2 = .06$, $F = 2.3$, $p < .08$, $n = 64$).

The qualitative data provides corroborating evidence for the quantitative results. Declares a CEO of a large Canadian pharmaceutical organization: "You have to trust the guy across the table before you negotiate. For, a partnership is like a marriage, you may get stuck with that firm for a number of years." Another CEO

agrees: " I think its a concern up-front to say we can feel that we trust these people. I think if you think you can't trust the whole organization, then you should not do the deal." More revealing is the evidence that the way partners "felt about each other" was important to how behaviors were interpreted during the course of the alliance. The theme was that initial perceptions were constantly used as a yardstick against which subsequent behavior was measured. This would seem to confirm the proposed relationship between initial perceptions and trust.

Test of Hypothesis 6b[H6b]

Hypothesis 6b (6b). There is a curvilinear relationship between initial perceptions of a counterpart's trustworthiness and trust.

This hypothesis predicts a curvilinear relationship between initial perceptions and trust. To test this possibility, a curvilinear test was conducted based on this formula:

$$\text{Trust} = \text{Predictor} + (\text{Predictor})^2$$

A two stage process was followed. In the first phase, initial perception and the control variables were entered. At the second stage, perception squared was entered. The increment in R^2 was then tested for statistical significance. As predicted, the results suggest an inverted U-shaped relationship between initial perception and trust ($b = -1.95$, $t = -3.75$, $p = .000$, $n = 191$). This suggests that there is some optimal level beyond which having a positive view of the

trustworthiness of a partner will become unhelpful. Indeed, trust may begin to decrease as the analysis shows. The regression equation was significant ($R=45\%$, $R^2 = 20\%$, Adjusted $R^2 = 18\%$, $F= 23.08$, $p < .000$, $n=191$). Table 25 presents the results of the analysis. Figure 3 is a graphical representation of the curvilinear relationship.

Test of Hypothesis 7 [H7a]

Hypothesis 7a [H7a]: Relational intensity will be positively associated with trust.

As predicted, relational intensity was positively related to trust ($r = .39$, $p < .01$, $n = 64$) and ($r = .25$, $p < .01$, $n = 191$). Controlling for interdependence and previous experience in a regression equation, relational intensity was positively related to trust ($b = .39$, $t = 3.4$, $p < .001$, $n = 64$) and for the total sample ($b = .26$, $t = 3.8$, $p < .000$, $n = 191$). Tables 13 & 14 present the results of this analysis. The overall model for relational intensity is significant ($R= .42$, $R^2 = .18$, Adjusted $R^2 = .14$, $F = 4.4$, $p < .01$, $n = 64$) and ($R=.32$, $R^2 = .10$, Adjusted $R^2 = .09$, $F = 7.2$, $p < .000$, $n = 191$).

The qualitative data offered strong support for this hypothesis. The major themes that emerged related to the value of frequent communication, a desire to quickly and effectively resolve misunderstandings and the need to stay in touch to build the relationship. A CEO of a Montreal-based biotechnology firm offers a

summation “lack of communication signifies a lack of trust.” The data generally indicated that maintaining the alliance often took quite an amount of their time but that it was essential to maintain close contact with their counterpart to foster trust and cooperation.

This hypothesis focuses on the behavioral contingencies that take place within the context of the alliance. In other words, these are the micro-determinants of trust. The thrust of the hypothesis is consistent with the widely held view that trust is promoted by sustained contact.

Test of Hypothesis 7b[H7b]

Hypothesis 7b [H7b]. The collaborative norm in an industry will moderate the hypothesized relationship between relational intensity and trust such that the higher the acceptance of collaboration as an industry norm, the higher the trust at a dyadic level .

This hypothesis attempts to look at the effect of an exogenous variable on dyadic relations. Specifically, it looks at the effects of industry level rationalities on behavior in a dyad. It posits that where partners see collaboration as legitimate or institutionalized in a narrow sense, there will be greater self-monitoring and social control and therefore greater trust. Thus, industry level rationalities are posited to moderate dyadic relations. The following model provided the test of this hypothesis.

$$\text{Trust} = (\text{Predictor} + \text{Moderator} + \text{Predictor} \times \text{Moderator})$$

Moderated regression analysis, MMR, (Cohen & Cohen, 1983) was used to test this hypothesis. Moderated regression is similar to multiple regressions except that cross-product terms for the independent variables thought to interact are entered into the equation after the main effects (of the independent variables) are determined. The moderating effect is examined by comparing the multiple correlation coefficient (R^2) of the equation without the cross-product term to the equation with the cross product term. The increment is then tested for statistical significance.

In testing this hypothesis, moderated regression analysis was chosen over other techniques such as ANOVA because it was deemed more acceptable for several reasons. First, moderated regression provides "the most straight forward and the most general method for testing contingency hypotheses in which an interaction is implied" (Arnold, 1982: 170). Second, moderated regression is often regarded as a conservative method to test interaction effects. This is because since interaction effects are not tested until the main effect, the interaction effects are found to be significant only if they add significantly to the main effect regression model's explanatory power (Cohen, 1978). Third, partial F-tests for increments in R^2 for the cross-product terms are valid even when the terms are correlated thus minimizing the effects of serious multi-collinearity (Cohen & Cohen, 1968.) Variables assumed to be more important were entered first. The F-test associated with the interaction term indicated the significance of the incremental contribution of the interaction term to the variance explained in the dependent variable after all the variables have been

removed.

The hypothesis was tested in three steps. In step one, the control variables and relational intensity were entered in the regression model. In the second step, collaborative norm (the moderator) was entered. In the third step, the cross-product term of relational instability and collaborative norm was added. Hypothesis 6b predicts that relational intensity will have a greater effect on trust when partners see collaboration as an industry recipe than when they do not. This prediction was not confirmed since the collaborative norm did not have a moderating effect on the relationship between intensity and trust. ($b = -.15$, $t = -1.4$, n.s., $n = 64$)⁹ and ($b = -.19$, $t = -1.3$, n.s., $n = 191$ and $R^2 = .11$, Adjusted $R^2 = .09$, $F = 6.0$, $p < .000$). Table 12 presents the results of this analysis.

Although this hypothesis was not supported, there is general agreement among industry participants that alliances will remain part of the strategic repertoire of firms in the industries surveyed. Notes a CEO of a major biotechnology firm, "This industry can't survive without alliances." There is a lot of specialization and that means people have to depend on each other. Another agrees "joint ventures are the wave of the future, there is no other option." Thus, although the direct effects of such industry-level rationalities remain unproven in the present research, there is reason to consider this dimension in future studies on interfirm trust.

¹¹ It is noted that the use of moderated regression with small sample sizes is not advisable. A sample size of at least 120 is recommended. Thus although the test was conducted on the dyadic sample, the results were not considered important. Stone (1988) cautions that sample sizes of less than 120 will mean power problems with MMR.

Test of Hypothesis 8[H8]

Hypothesis 8 (H8): The tenure of boundary role persons will moderate the hypothesized relationship between relational intensity and trust such that alliances with higher turnover will have lower trust than those with lower turnover.

Moderated regression analysis, MMR, (Cohen & Cohen, 1983) was used to test this hypothesis. The moderating effect of boundary role person turnover on relational intensity was tested with this equation:

$$\text{Trust} = (\text{Predictor} + \text{Moderator} + \text{Predictor} \times \text{Moderator})$$

The hypothesis was tested in three steps. The control variables, interdependence, previous experience and the predictor variable relational intensity were entered into a regression equation. The moderating variable, boundary role person tenure was entered in the second step. In the third and last step, the cross-product term of the moderator and predictor were entered. The moderating effect was examined by comparing the multiple correlation coefficient of the equation without the cross-product terms to the equation with the cross product terms. The increment was then tested for statistical significance. Table 27 presents the results for this analysis.

As predicted, role person tenure moderated the relationship between relational intensity and trust ($b = -1.80$, $t = -2.45$, $p < 0.1$, $n = 191$; Adjusted $R^2 =$

0.117, $F = 6.05$, $p < .001$, $n = 191$). The results show that boundary role person turnover has a negative relationship to trust.

The qualitative data does suggest that key people sometimes leave or move on. The data indicates that the way partners protect themselves is to put as much of the process into writing as possible and hope that new people can carry it on. Overall, the representative theme is a recognition that sometimes personal contacts are irreplaceable once the original people leave. At least one respondent indicated that this awareness made him to insist that almost all transactions and discussions, even those at a fairly informal level be written down so that the adverse effects of turnover in role persons were lessened in the relationship.

Test of Hypothesis 9 [H9]

Hypothesis 9 (H9): Trust between partners in an alliance will be positively associated with performance.

This hypothesis suggests that trust will positively impact performance. This hypothesis was tested twice. As expected, this hypothesis was confirmed. First, there is a positive correlation between trust and performance ($r = .77$, $p < .001$, $n = 191$) and ($r = .75$, $p < .001$, $n = 64$). Second, multiple regression was used to test how trust affects performance in the relationship. In a full model in which previous experience and interdependence were controlled for, trust had a significant effect on performance. The model yielded an ($R = .82$, R^2 of .67, Adjusted $R^2 = .65$, $F =$

33.6, $b = .63$, $t = 8.7$, $p < .001$, $n = 191$) and ($R = .82$, $R^2 = .68$, Adjusted $R^2 = .61$, $F = 10.0$, $b = .76$, $t = 4.2$, $p < .001$, $n = 64$). Thus, for both the dyadic sample and full sample, trust is positively associated with performance measured by subjective indicators. Tables 11 & 22 present the full models of the relationship between trust and performance. The qualitative data generally supports this positive relationship between trust and performance.

SUPPLEMENTARY ANALYSIS

Test of Control Variables

Some additional analysis were conducted to gain a greater understanding of the variables and the relationship they have to trust. All supplementary analysis were done with the total sample.

First, a two-tailed test was used to assess the significance of the control variables. There were two main control variables in the study: the interdependence between the partners used as a proxy to predict when influence and power are likely to be used instead of trust and the previous experience of partners. There was no significant relationship between previous experience and trust ($b = -.02$, n.s., $n=191$), but interdependence was negatively associated with trust ($b = -.18$, $t = -2.6$, $p < .009$, $n = 191$). On the whole the model has some predictive ability ($R^2 = .036$, Adjusted $R^2 = .026$, $p < .05$, $F = 3.5$, $n = 191$). The results of this analysis are presented in Table 23.

I also included the type of contract as a control variable to see if it has any

effect. There is reason to suggest that the type of contract, whether a joint venture or in-house arrangement will affect the process of trust building. In the case of joint ventures for example, partner representatives may have the opportunity to meet more frequently than in other cases. When contract type was added as an additional control variable, the predictive ability of control variables increased slightly ($R^2=.069$, Adjusted $R^2=.054$, $F= 4.6$ $p < .004$, $n=191$). The type of contract (Contract) was negatively related to trust ($b =-.18$, $t = -2.5$, $p < .01$, $n = 191$).

NON-HYPOTHESIZED FINDINGS FROM THE QUALITATIVE DATA

Competence as a predictor of Trust

One interesting non-hypothesized relationship in the qualitative data is worth reporting. The data suggests that competence was a key consideration in the relationship. It was important for partners to meet their commitments and the demonstration of competence was an important factor in building trust and cooperation. This is not surprising given that a line of research exists that considers competence as an important antecedent of trust (see Mayer, Davis & Schoorman, 1995 for a review). The nature of the industry surveyed may explain why competence is considered important. Scientific research depends on the ability and technical competence of researchers and this translates to the firm as a whole.

The Need For Trust

A second interesting outcome of the study is the importance firms place on trust. To some extent this finding validates the present research effort. Contrary to the

transaction cost theory, the presence of small numbers and high uncertainty did not rule out trust. In seven out of the ten interviews conducted for the purposes of the research, respondents mentioned trust each time before the interviewer. The overwhelming view is that trust is a sine qua non for a successful relationship. In yet another instance, a statement such as "I did a deal with the guy I trusted even though their financial offer was lower than the next guy's" demonstrates that trust did, indeed, play a crucial role in the choice of an alliance partner.

Affect as a component of trust

Another important, but potentially puzzling finding is that affect may after all not be such an important dimension of trust. This would seem to contradict some existing conceptual and empirical work (e.g. Bromiley & Cummings, 1995). Quotes such as "I don't have to like him, I just need to trust him" and "I don't have to fall in love with that person, I don't have to have a friend in him, I just need to trust him" all point to the idea that economic actors may trust a counterpart they do not particularly like.

Placed within a context of theory development, this finding seems to highlight the need for researchers to more fully define and delimit the concept of interfirm trust as a phenomenon sui generis. Although tentative, the finding also supports the contention made in this paper that a less benign view of interfirm trust more closely approaches realism.

Discussion of Perceptual Agreement in the Dyad on Variables

Conceived as a unique social unit that is not reducible to individual

phenomenology (Simmel, 1950), the results of the degree of perceptual agreement or disagreement in the dyad is of both theoretical and practical importance. The results presented in Table 7 is insightful. As expected, there were both agreement and disagreements. Two notable points on which there is significant difference is interdependence. Each partner in the dyad had a different perception of who is the more powerful one. While this can positively impact the relationship in the sense that no one partner looks dominant, it nonetheless makes it harder for the partners to determine when trust is nothing more than a front for power and influence.

The fact that there are significant differences in the perception of the dyad on the extent to which collaboration is valid is an industry norm is also reflected in the test of the hypothesis on the moderating role of the collaborative norm in the industry. Consistent with that incongruity, the hypothesis was not confirmed.

Chapter Summary

This chapter presented the results of the tests of the hypotheses including the supplementary analysis. Ten of the thirteen hypotheses in the study were confirmed. The next chapter presents a discussion of the results as well as the study's conclusions.

CHAPTER 11

DISCUSSION

Chapter Summary

This chapter presents a discussion of key findings. The implications of the findings for both theory and practice are also given. The limitations of the study and recommendations for future research are also presented. Some omnibus remarks conclude the chapter.

Despite their rather lackluster record of performance, strategic alliances continue to be an important part of the strategic repertoire of a substantial number of firms. Alliances give rise to new organizational forms that defy out traditional concepts of markets and hierarchies (Williamson, 1985). Research focus on issues that emerge from alliances have important implications for both strategy research and practice. Among the management issues that stay up-front are issues of coordination and efficiency within which trust is a wellspring. This research looked at how exchange partners achieve coordination and efficiency based on trust. Specifically, it examined the conditions and structures that generate trust in economic exchange.

The present research advances our understanding of strategic alliances by testing a number of trust-related hypotheses. In general, it is acknowledged that trust is the wellspring of cooperation. The theory and findings suggest that trust can be fruitfully explored by looking at both structural and behavioral sources. In using a rational sociological approach (Coleman, 1990), the present research avoids treating

relations as if they had no history (Granovetter, 1992). At the same time, and consistent with the objective of presenting a less benign view of trust in economic exchange, the present research acknowledged the possibility of strategic behavior on the part of actors within a trust-based regime. Although the model presented is systemic at the core, the intentions and perceptions of the actors are not ignored. A number of issues arise out of the research and these will now be discussed.

First the findings suggest that the nature of a particular exchange, specifically the amount of uncertainty and by extension risk associated with an exchange is an important determinant of trust in the relationship. The study found a positive association between trust and uncertainty in the relationship. This finding may seem counterintuitive at first sight. However, a closer look at when trust is most needed shows that in the presence of high uncertainty, partners have little choice but engage in those behaviors that promote trust. In the end, sustained contact may make for quick resolution of difficulties and conflict and that in itself is a prerequisite for trust building (Powell, 1996).

This finding is, however, contrary to at least one other finding. In a related study, Currall & Inkpen (1997) found a negative relationship between trust and risk. In such an instance, one can advance some speculation. One possible explanation is that partners failed to appreciate that greater risk called for greater need to build trust. The other plausible explanation is that the risk was so high that trust did not emerge. In effect, the optimal point in an inverted U-shaped curve has been surpassed in the later case. The links between trust and uncertainty certainly

warrant further scrutiny. Indeed, the mixed findings actually point to the need for a greater understanding of the conditions that require strong form trustworthiness (Barney & Hansen, 1995). Transaction cost theory has traditionally argued that the best way to deal with uncertainty is to use ex-ante orderings such as securing “hostages” or drawing up extensive legal contracts (Williamson, 1985). This finding and related work, both conceptual and empirical, suggests that the use of non-hierarchical repertoires such as increased interaction and trust are one alternative form of governance under high uncertainty.

The study also demonstrates that partner commitment for future relations even in principle, can have a positive effect on an on-going relationship. This relates to the positive relationship between open endedness and trust. This finding is consistent with other studies within a game-theoretic framework (Schelling, 1960). To recap some of the earlier arguments, open-endedness per se is not what produces trust. Ultimately, it is the behaviors it elicits. What an extended relationship does is to provide partners with a long time across which to interact. In other cases, open-endedness presents partners with an opportunity to link future possibilities to present actions, thereby assuring trustworthy behavior.

Anecdotal evidence suggests that Japanese and Asian firms have a preference for such open-ended relationships. Of course, there are limiting conditions to this proposition. In very volatile environments, the preference may be for very specific, close-ended deals as opposed to long term commitments. Firm-specific internal factors may also dictate whether a firm is predisposed to having long

or short term commitments. One specific factor worth mentioning is the organizational time horizon (Goodman, 1973). An organizational time horizon has been defined as the distance into the future which leads to significant management action. Firms with short time horizons may be predisposed to short term thinking more than those with long time horizons.

The finding that relates the partner's future intention to trust rests on the same logic as the previous one. The idea is that because opportunism in the present closes doors in the future, partners in a current relationship exercise reflexive self-monitoring in the present. Taken together, both findings offer an interesting portrait of strategic behavior within a trust-based regime. As mentioned elsewhere in this research, this sort of behavior has been documented on the part of sovereign nations (Lipson, 1991). Also, research on collaboration among European aircraft manufacturers demonstrated that partners who did not intend to have future alliances tended to be less cooperative in current relations (Tucker, 1991).

The study also offers some insight into how traditional micro behavioral processes may work at an interorganizational level. A major finding of the study is that a partner's initial perception of its counterpart's trustworthiness positively affected trust in the relationship. The concept of self-fulfilling prophecies, expressed in one form or the other, has a rich and long research history in micro behavioral research. This study extends that line of research by using the logic to explain an interfirm level phenomenon. On first sight, the jump from one level to the other seems pretty dramatic. In reality, however, remembering that interfirm trust remains

an interpersonal thing makes the jump less dramatic. Beyond that, the finding that there may be some optimal level beyond which having a positive opinion of your counterpart ex-ante is harmful, or at the very least undesirable, is important. This has important implications for practice and I flag this for later discussion. This finding, however, appears to contradict some earlier research recommendations on trust building. For example, Shapiro, Sheppard & Cheraskin (1992) suggest that partners start with small amounts of trust and increase the level of trust needed gradually, implying that low initial perceptions pose no constraints. That may also be a valid approach. The point here is the process may be more difficult under a "gradual regime" than under one where perceptions of trustworthiness are high ex-ante. Indeed, this later position is consistent with those of other researchers who note that it is important that the basic cooperative trust be established from the start (Lorange & Roos, 1992).

As expected, the intensity with which partners interact was positively associated with trust. This finding is consistent with some earlier ones (e.g Powell, 1994). At the same time, the qualitative data indicates that firms are aware of the costs associated with sustained behavior that produces trust building. Respondents indicated that sometimes it took substantial parts of their time to manage these relationships especially when they were of strategic value to the firm. This has implications for both theory and practice.

The findings in the study confirm that key individuals play an important role in how trust develops at an interfirm level and that their absence can affect the

process. This view is generally consistent with those of other researchers (Currall & Judge, 1995; Bodaracco, 1991). Viewed as a process of familiarity and norm building, trust creation requires stability in role people because continuity assures that specific maintenance strategies developed over time by partner representatives are maintained (Baxter & Wilmot, 1985). Thus, the ideal is a situation where there is no turnover between such role people. In reality though, turnover may be a factor over which total control is impossible. The alternative for this may be having multiple people play this role, or at the very least having a broad-based support for the alliance in both partnering firms. Both multiple role persons and the presence of a broad-based support for the alliance will tend to reduce the severity of turnover in individual role people.

Contrary to expectations, the presence of intermediaries in the form of third party referrals did not have a significant relationship to how trust emerges. This would seem to contradict at least one previous study (Uzzi, 1994). There may be both methodological or substantive reasons for the present finding. There is some restriction of range associated with this measure and the non significant findings could be an artifact of this. Indeed, the hypothesis just falls short of statistical significance. This fact coupled with those of previous studies should make the present findings tentative. The qualitative data, however, sheds some additional light on this issue.

The view is that firms place reliance on the recommendations of third parties to choose their partners but ultimately, the decision on whether to trust or not may

be more predicated on relational and structural issues more directly related to the exchange. Indeed, one can speculate that some type of a recursive application of information based on referrals occurs in alliances, suggesting that the longer the relationship goes on, the less important the referral source becomes as a determinant of trust. In other words, the importance of third party role becomes progressively less important as partners establish their own baseline with each they decide whether to trust each other or not. If such a situation in fact applies, then sociological paradigms, specifically those claims that relate to the key role of referral networks in trust building may require further conceptual and empirical elaboration.

The hypothesis linking industry level rationalities to interfirm behavior was not confirmed. Specifically, the collaborative norm associated with an industry did not have a moderating effect on dyadic trust. Despite this, there is reason to explore this aspect further since there are strong conceptual and theoretical reasons for the proposition. If trust works through both reflexive monitoring and social control, then shared metaphors and mind sets within an industry should affect dyadic behavior. The development and refinement of measures of collaborative industry norms may be an important first step in that direction.

Also, direct product market competition between alliance partners did not negatively relate to trust. To the contrary, direct market competition was positively associated with trust. This finding appears counterintuitive when viewed within traditional strategy paradigms where competition is the leitmotif. This finding also contradicts the general tone of previous studies that relate to cooperation between

firms that compete directly in the same product market (e.g. Harrigan & Newman, 1990; Balakrishna & Koza, 1993). In general, the received theory is that cooperation is difficult, if not impossible between direct market competitors. Nevertheless, the present finding is important in its own right. It may offer yet another explanation for the continued proliferation of alliances between real and potential competitors. The fact is if trust is less dependent on whether firms are directly competing for the same product market or not, it stands to reason that they will be less concerned with coming together in the first place. Indeed, a logical explanation, and the qualitative data seems to support this, is that trust emerges between partners who compete directly in the same product market because partners perceive some symbiosis in the situation. Simply stated, a plausible logic is that since you are in the same product market, you both have familiarity and competence to deal with issues in that market. A word of caution is in order at this point. The sample used in this particular study is fairly unique and that warrants some caution in generalizing this particular finding to other settings. Firms concerned with scientific research and innovation are more likely to be more concerned about competence than other firms.

Trust was also positively related to performance in the relationship. Of course the possibility of reciprocal causation between trust and performance is recognized since relations with which partners are satisfied should tend to have greater trust. This and other findings from the study confirm and support the long line of existing research that suggests trust is important in economic exchange, contrary to what Williamson (1993) suggests.

A significant non-hypothesized finding from the qualitative study is that affect is not an important component of trust. Since the conclusions are drawn from ten case studies, a fairly limited sample, the findings are best viewed as tentative. At the same time, the findings provide an interesting building block for a more rigorous conceptualization of interfirm trust as a phenomenon *sui generis*. A vast amount of the literature on trust presumes that affect is a central component of trust. In interpersonal cases, that may be the case. Thus, the tendency to automatically assume that affect is necessary for trust between economic actors may need to be revisited. In a sense this finding supports the call made in this thesis for a more balanced and realistic theory of interfirm trust.

Some distinct methodological aspects of the present study require discussion. The study may be one of the few studies to have focused on the psychological aspects of trust and field tested related hypotheses. The findings suggest that the use of micro behavioral theories to explain interfirm level phenomena may be one avenue to explore in future interorganizational research.

A substantive contribution of this study is the simultaneous consideration of structural and behavioral elements of trust behavior. Thus, this study heeds Heide & Miner's (1992) call for research on interorganizational issues to consider both sets of factors. By combining both an inductive and deductive approach, the present study presents a rigorous testing of a model of trust in interfirm alliances. The present study also taps at trust from multiple domains, and generally avoids looking at trust from just one angle.

The research design used for the study focuses on dyads or pairs of firms as a smaller sub-sample in addition to a larger sample. Thus, most hypotheses were tested twice. The high degree of agreement between the dyadic partners on the major constructs makes the use of the larger, combined sample appropriate. Even for respondents for which no responses were forthcoming from the counterpart firm, each respondent knew exactly who it was they were evaluating, since both the counterpart and the nature of the relationship were all identified to respondents.

The research focuses on dyads in spite of the fact that alliances are beginning to be conceptualized in terms of networks (Yoshino & Rangan, 1990). In understanding relational data, using dyads as the unit of analysis may be preferable (Mizruchi, 1992). The use of dyadic data is preferable because we know specifically what the effects are of independent variables on the criterion variable. Consistent with this reasoning, other researchers have noted that an analysis of dyads provides the most direct test of hypotheses based on relational data (Laumann & Marsden, 1979; Mizruchi, 1992). In this research, problems of inference such as atomistic fallacy do not arise because no inferences are drawn about other cooperative forms on the basis of conclusions from the dyadic data.

As Zaheer & Venkatraman (1995: 389) observe, collecting data from each side of the pair enables cross-validation of inherently relationship-oriented measures of constructs. It also permits the modeling of different perceptions on the same phenomenon. In the present study, partners exhibited substantial agreement on most of the constructs. One particular case of disagreement warrants some

comment. Perceptions differed on the initial perceptions of the counterpart's trustworthiness and this is important. Since trust can be built on the basis of behaviors that elicit trust (Kramer & Tyler, 1994), it matters little whether both parties have agreement on this issue or not. The assumption is that as long as one partner actively engages in elicitive behaviors trust may emerge in the relationship.

Another methodological distinction of the present study is the consideration given to the role of time in trust creation. Trust is a relational phenomenon and may take time to develop and so it is important to take time into consideration. Time can be accounted for in either of two ways: (1) by using statistical controls. In this case, the age of the relationship, calculated as the difference between the date of the formation of the relationship and the time of questionnaire completion can be used as a single measure and treated as a predictor variable or by (2) procedural control. Procedural control relies on research design. This research adopted one form of procedural control since procedural control is generally preferable to statistical control. Based on existing empirical research, the selection of the sample was limited to alliances that were at least a year old. Lorenz's (1988) study of cooperation in the French construction industry found that trust creation took anything from six months to a year. In addition, anecdotal and preliminary qualitative impressions from industry participants justified the one year cut off. The qualitative data from company interviews supports the validity and reasonableness of this choice. Several respondents confided that it took anytime from 6 months to 1 year for the relationship to mature. They report generally that a year was enough for important

milestone events to occur and such milestones provide an opportunity to validate prior expectations and to develop both “competence-based” and “goodwill” trust (Sako, 1992).

A second dimension of time was considered. Informants are likely to give *present state* reports of trust when they are interviewed or when they complete mailed surveys and this raises a potential problem and this has been noted by other researchers (e.g. Anderson & Narus, 1990). In cross-sectional data, this may be a liability especially in cases where the relationship has not terminated, because major milestones may still come due. There are no easy solutions to this problem. Again, statistical or procedural controls are options. The present research opted for the later for reasons stated elsewhere. The choice of the trust measure was guided by the desire to address this problem, however partial. The Trust Inventory by Bromiley & Cumming (1995) is based on the theory of reasoned action. In its different forms, the model affirms correspondence between intention and future state behaviors. Thus, it can be reasonably inferred that the intention of partners at one point in time will affect their future behavior, unless of course something dramatic happens to the contrary.

IMPLICATIONS FOR ALLIANCE RESEARCH

As mentioned earlier on, the notion of coordinating exchange via a trust-based regime has generated a certain amount of skepticism. Whether real or not, it behooves researchers to address this skepticism. Thus, the present research avoided presenting a benign view of trust by examining trust through the social,

strategic, economic and psychological lenses and multiple sources. The inclusion of contextual factors such as present market relations; the focus on structural sources such as uncertainty and open-endedness all tap at trust's economic and strategic dimensions. The focus on partner's initial perceptions of their counterpart's trustworthiness, a characteristics of the partner, looks at trust from a psychological source. There are important implications of the findings for alliance research.

By looking at both structural and behavioral variables in explaining trust, this research avoided elevating one set of explanatory variables to the top of the theoretical pyramid. Theoretically, it is of interest to continue this sort of work. The objective is to see whether transaction cost theory and more relational-based theories can complement each other. For example, transaction cost theory essentially suggests that structural factors and arrangements made ex-ante, are the most efficient and effective mechanisms for governing exchange. Some aspects of the present findings similarly suggest that structural sources explain trust. The question is are these seemingly disparate theories related in part after all? This type of theoretical integration is possible. There is, in fact, presently an interesting debate going on this topic. While an increasing number of researchers are beginning to combine transaction cost and social exchange theory, including integrating trust into transaction cost theory (e.g. Chiles & McMackin, 1996) others suggest that trying to marry what is perceived as a very positive theory and relational theories are futile (Ghoshal & Moran, 1996). Such a debate needs to be resolved both theoretically and empirically. Some of the findings from this study may give one building block on

which to build. For example a typology can be developed that shows how the need for trust varies across different conditions of uncertainty.

An interesting theoretical contribution of the present thesis is the inclusion of actor perceptions of its counterpart's trustworthiness and the partner's future intentions to explain systemic level phenomenon. Social exchange and game theory are popular theories in interfirm research (e.g. Parkhe, 1993; Larson, 1992). Both of these theories are essentially systemic theories. For example, using a systemic approach, changes in trust as an outcome variable would be explainable in terms of variations in the attributes of the system and not in terms of actor characteristics. The tendency, naturally is to focus on alliance context behaviors. This may be effective but what it does is to ignore, assume away, or at the very least treat partner-specific preferences, resources and perceptions as pedestrian problems.

Although theory-building can advance with the use of systemic theories, the omission of partner perceptions, intentions and characteristics may reduce the utility of both game and social exchange theories and this omission has been pointed out by other researchers (Brinberg & Jaccard, 1989; Adobor, 1996). The present research advances work in that direction by including both the partner's future intentions and perceptions of the counterpart's trustworthiness into the model. The findings suggest that both game theory and social exchange theory's usefulness to explaining relational exchange will be enhanced with the integration of actor's perceptions and preferences.

By focusing on micro behavioural aspects of trust building behavior, the

findings suggest that macro-level phenomenon may benefit from the vast literature that currently exists in social-psychology. Accordingly, other researchers may consider using what are essentially micro-level theories to explain other macro-level interorganizational phenomena.

Although the hypothesis on the moderating role of industry conditions on dyadic relations got no support in the current research, it nonetheless warrants further study. The theory of macro cultures (Abrahamson & Fombrun, 1994) has so far stopped short of looking at firm-level implications of the theory. But there is at least a theoretical reason to suggest that a greater understanding of industry-level rationalities on alliance performance can enrich our understanding of the alliance phenomena. Such a theoretical thrust should complement institutional and perhaps population ecology explanations of alliances. So far, the use of both population ecology and institutional explanations of strategic alliances have been scanty at best. If trust is efficient as a form of governance mechanism because of reflexive self-monitoring and social control, then ignoring the industry context within which actors are situated will be a serious omission.

The theory and findings point to yet another interesting possibility. Although the present research tapped at trust from different angles, our understanding of how each dimension affects trust is less understood. For example, a test of a non-linear relationship between uncertainty and trust resolves some existing incongruity in previous findings and advances our understanding. At the same time, much work needs to be done to explain how structural factors affect trust. Also, it is important

to know the conditions that exacerbate strategic behavior in trust-based regimes because opportunism destroys trust and strategic behavior is one sure way of opening the floodgates of opportunism. The suggestion is that there are possibilities for deriving additional payoff from revisiting and expanding existing perspectives of the conditions that promote trust, even if these are single, as opposed to integrative perspectives as long as that effort is guided by balance and realism in theory building. Since trust has social, psychological, economic and strategic components, it should be possible to build more sophisticated explanations on the basis of each. At the very least findings from the present study suggest that both rational action and social organization must not be viewed as mutually exclusive. Strategic actors can still be trusting as much as strategic behavior is possible in trust-based regime.

RELATED AREAS FOR FUTURE RESEARCH

The present research invites additional research and extensions. In several cases, it points to fruitful areas for additional work. In other cases, it provides the building blocks upon which additional work can be built. It is impossible to detail all of these for space constraints. Nevertheless, a number of important suggestions are offered.

Determining Partner's trustworthiness ex-ante

The findings linking perceptions to trust was based, in part, on implicit categorizations derived from an actor's estimation of a counterpart's *trustworthiness*. Considering the important role of initial perceptions in how behavior is interpreted as

well as signaled during the course of an alliance, it is of both theoretical and practical importance to understand how firms in fact arrive at such initial perceptions.

Speculation suggests that in some cases, the reputation of the firm in areas unrelated to interfirm collaboration may be one basis. In other cases, prospective partners may rely on references from third parties. No matter the source, forming a perception of a partner is likely to be a composite of many factors, some rational, others less so. Knowing how firms arrive at such decisions will advance our understanding of the coordination processes in alliances in general and the psychological dynamics of interfirm trust in particular. Both quantitative and qualitative means are viable ways for understanding the processes through which partners arrive at initial perceptions.

Typology of Trust Forms

This research used a sample that included different forms of alliances. One main reason for this was the presence of non-linear propositions in the theory. In testing such relations, an adequate sample size and heterogeneity of the sample are both desirable. However, there is reason to suggest that the organizing form used in an alliance may affect the process of trust building. For example, partner representatives on a joint venture team will tend to be in much closer contact than in an arrangement where both partners collaborate but carry out their side of the project in house. In a joint venture, partner representatives are the key nodes for trust building. Indeed, viewed as a form of interorganizational group, the emergence of trust in the joint venture management team may depend substantially on the type

of norms the group builds. At the same time, turnover among such people should affect how relations develop between the partners including trust. When the degree of formality is used as a criteria to classify alliance forms, it must be possible to see how trust varies across such organizational forms. In fact, the antecedents and key factors that promote and develop trust may vary across such organizational forms and this is of both theoretical and practical importance. This type of work will find some conceptual anchor and an exemplar in Ring (1997).

Firm Propensity to Trust

The present research omitted some key variables. The main reason was to reduce theoretical anarchy and achieve some parsimony. Future research will do well to include the firm's propensity to trust. Insight from the qualitative data suggested that some firms were just always "difficult to deal with," suggesting that firms may have some disposition to either be open or close and that can affect how they behave in an alliance, and that can affect how trust emerges.

There is reason to believe that firms, as corporate personalities and individual BRPs may have different propensities to take risk as well as trust other people. Mayer et al (1995) define propensity in terms of a dispositional trait or the willingness to trust others. Perhaps firms also learn over a period of time and build a disposition to trust, or vice versa. Barney & Hansen (1994) suggest that a firm's culture may affect its propensity to engage in trusting behavior. The authors suggest that where a firm has a culture that rewards trustworthy behavior, its representatives, as BRPs may be trustworthy for that reason only. Measuring a firm's propensity to

trust may not be easy but looking at the firm's prior relations with suppliers, customers and other stakeholders may give clues about a firm's propensity to trust. The type of values that are rewarded in terms of individualism or collectivism will also offer clues to a firm's trust orientations. Besides, focusing on the nature of communication infrastructure may be an important indicator of this propensity since internal communication infrastructures are likely to be used for external communication (Mathiesen, 1971).

Personality Characteristics of Role Persons and Trust Building

The present study draws on micro behavioral processes to explain trust in alliances. If trust depends to some extent on the subjective interpretation of another social actor's behavior as some have suggested (e.g. Robinson, 1996, Luhmann, 1979), then it is important to tap at respondent's subjective inclinations. One such strategy is to tap at the personality characteristics of firm representatives. Two personality characteristics or dispositions are especially important here. First is the affectivity level of role persons. Affectivity is defined as a general tendency to experience a particular mood or to react to objects in a particular way or with certain emotions (Lazarus, 1993). There is both positive and negative affect. The former is associated with mood states such as enthusiasm and alertness while the later relates to such aversive mood states such as fear and contempt (Morris & Feldman, 1996). More generally, negative affectivity relates to an individual's propensity to respond negatively irrespective of the situation (Kim & Mauborgne, 1991). The behavioral consequences of affective states have been tested. Empirical links have

been made between affect and biases in information processing (Alloy & Abrahamson, 1988) helping behavior (George & Brief, 1992) and evaluation of others (Cardy & Dobbins, 1986). The dimensions of information processing, evaluation of others and to a lesser extent helping behavior all relate to behaviors that have a bearing on how trust emerges at a BRP level.

Negative affectivity has been identified as a methodological nuisance in research designed to assess individual's attitudes. It has been suggested that this nuisance is more pervasive than it is recognized, and calls have been made to measure it (e.g. Watson, Pennebaker & Folger, 1987). Effort was made to include this variable in the questionnaire, but feedback from the pre-test led to its omission. The length of the questionnaire was the main factor for omitting this variable, but there is reason to suggest that controlling for this will be desirable.

A second personal characteristic or disposition worth studying is the cooperative disposition of these individuals. Personality research suggests that some people are generally more cooperative than others irrespective of the context (Chatman & Barsade, 1995). Perhaps how trust emerges between partners depends to some extent on the individual disposition of the role persons. The presumption here is that since such key individuals play an important role in how trust emerges in a relationship, it will be insightful to focus more incisively on them. There are substantial payoffs to both research and practice from this type of work. Besides a deeper understanding of trust building, such a research effort will point to some of the desirable characteristics of people nominated to manage alliances.

Trust vs. Power

The present research controlled for the degree of interdependence between the partners. The evidence is that in some cases, trust is nothing but a front for the exercise of power and influence (Fox, 1974; Hardy et al, 1995). Despite the insight, very little work currently exists that integrates the two concepts. The conditions that promote the use of influence and control in place of trust needs to be studied. For example, while available evidence seems to suggest that trust is most likely to endure when the partners stand equal in terms of their resources, the fact remains that there is a difference between having and using power. Worse yet, the fact that the relative position of partners change as the alliance grows (Tucker, 1991) makes the links between interdependence, power and trust a complex, but important thing to know. It is of both theoretical and practical importance to know the conditions that promote the use of influence and control in alliances and how these interact with other factors to affect how trust emerges, is sustained or perverted in an alliance.

The Costs & Risks of Trusting

There are risks and costs to trusting. The risk of trusting arises because trust may not be requited. In such cases, misplaced trust can become costly to the trustor. In strategic alliances, the presence of trust allows a partner anticipating the need for transaction-specific assets in the future to consider the other partner as a source of those assets at the present time (Ring & Van de Ven, 1992). Thus, when a partner fails to deliver on its side of the bargain, its counterpart will incur material losses related to any investments made conditionally in the hope that trust will be requited.

The presence of three specific conditions may give rise to and exacerbate the risks of trusting.

First a partner can also be too trusting and that could be costly. For example, having too high a threshold of tolerance for violations or failing to monitor relations can lead to opportunism in the relationship. Indeed, the evidence is that too much trust is bad for cooperation (Browning, Beyer & Shelter, 1995). Second, since trust building requires sustained contact, there are costs in terms of investment in time and resources. Finally, the idea that familiarity can breed contempt has been revealingly made elsewhere (Granovetter, 1985). To date, hardly any systematic studies of the risks and costs of trust are available. Ultimately it must be possible to assess the efficiency of trust based regimes by looking at the costs and risks of trust in relationships. Fine-grained case studies of alliances can offer some insight into this and similar issues.

Balancing Reliance on Individual Role People

The research evidence suggests that key individuals play an important role in how trust develops between partners. At the same time, the fact that there may always be cases of turnover in this role makes it important that firms balance their dependence on these key people. How firms do this is presently less understood. There has been some suggestion that using multiple people is a way of getting around this problem and that makes intuitive sense. However, a more sophisticated conceptual and empirical explanation would take into account the various stages of the alliance process. The presumption here is that at some stages, say the early

stages of the relationship, having one key person manage the relationship may be better for trust building. A greater understanding of the processes through which firms can achieve this balance is certainly one important area requiring immediate research attention.

Methodological Issues

The present research used a small dyadic sample. Combining the scores of each set of respondents was done by examining the means for significant differences following (Siguaw, Simpson & Baker, 1997; Kumar, Hibbard & Stern, 1994). The aggregation method was chosen in the present study because it was deemed to be conservative and appropriate. Future research can, however, improve on finding a better way of deriving dyadic scores from two respondents.

The assessment of degree of agreement or disagreement between the partners has interesting implications. A priori, one should not expect total agreement on relational phenomenon. Indeed, in the present study, the fact that there are differences in such constructs as the partner's initial perceptions of each other's trustworthiness is expected, even if surprising. At a more general level, the presence of differences on some variables will suggest that there was some failure in the "meeting of the minds" that preceded the alliance.

Constructing a perceptual matrix based on the degree of agreement or disagreement between the dyads can also be cluster analyzed to get at the sort of issues on which partners tend to agree and those on which they tend to disagree. Such an exercise has important theoretical and practical implications. Practically,

dimensions on which partners tend to disagree may be important to those wishing to design intervention strategies to promote trust and possibly cooperation.

IMPLICATIONS FOR ALLIANCE MANAGEMENT

The Need for Trust

The present research has a number of implications for practice. First the study provides yet another evidence that trust does matter in strategic alliances. This study involved an industry with very high uncertainty. The nature of the product, scientific research is intangible and concerns about opportunism fairly high. This is also an industry in which elaborate legal contracts are drawn to govern the relationship. Despite these factors, respondents consistently stated that trust was an indispensable ingredient for a successful relationship. All these findings are contrary to what transaction cost theory suggests. Firms contemplating strategic alliances will need to realize that trust is important. Thus, the presence of legal contracts should not preclude an effort to build trust in the relationship. After all, when the lawyers leave after drawing up the contract, what matters is the relational assets both partners have between them. In that arsenal, trust seems very important.

Relatedly, the study provides some comfort to firms contemplating alliances with their direct competitors. Based on findings from this study, trust is still possible between direct competitors and direct market competition need not necessarily be a *salto mortale* or death leap for the partners.

Self-Fulfilling Prophecies: The Good and Bad Side

The present study offers some valuable insight to understanding the often subjective elements that determine trust building. In general, it alerts firms to the power of their own perceptions. These perceptions may be either subjective or objectively derived. In either case, these initial perceptions allows a firm to categorize a partner. Worse yet, initial perceptions become a filter through which behaviors may be interpreted. Viewed with the lense of the classical notion of self-fulfilling prophecies, one conclusion is firms might get just what they desire. No matter the interpretation one gives to the concept of self-fulfilling prophecy, it is important that economic agents be aware of their own subjective perceptions and how that can affect their behavior. The idea that trust building is a form of self-fulfilling prophecy has another important implication for behavior.

The evidence is that some firms have entered relationships with some minimum amount of trust. In one telling quote, Larson (1992) quotes a manager as saying "when we started, we did not know if we could trust them." In his study of cooperation among French contractors, Lorenz (1988) reports that in some cases, it took about one year for partners to develop trust. The suggestion here is not that trust cannot be created slowly from small beginnings. In fact, some researchers have suggested this approach (e.g Sako, 1992). However, building trusting relations via a gradual process may be more difficult when there are psychological biases working against the process. The logic is that with low perceptions of trustworthiness, the negative consequences of a self-fulfilling prophecy may work against partners. In

contrast, the findings suggest that it would be preferable to have a positive level of trustworthiness about a partner before the start of the relationship.

Together, the suggestion here is that “pygmalion” (Eden, 1990), may be harnessed for trust building. Practically, what this means is that one partner can literally “jump start” the process of trust building by engaging in behaviors that elicit constructive behaviors from its counterpart. For example, telling one’s counterpart that they are trusted and sending signals to demonstrate that you trust them is one important way of building trust. Indeed, the logic is that trust is likely to emerge even if only one partner has a positive opinion of its counterpart. A CEO interviewed for this study noted that his firm normally surrounded the accomplishment of major milestones in the alliance with a lot of fanfare. His reason, is to demonstrate to the counterpart firm that his firm will keep its part of the bargain, so to say. Ultimately, what this suggests is that symbolism may just be as important as substance.

Relatedly, the notion that the positive benefits of high perceptions of trustworthiness may have some optimal level of usefulness beyond which they may become detrimental has an important implication for practice. The key insight may best be summarized by the logic of excesses traceable back to Greek mythology. “Nothing in excess” is the warning inscribed on the Temple of Apollo at Delphi. According to the logic of excesses, too much of anything, even a good thing can be detrimental. Having too high an expectation may be detrimental to the relationship. The real issue of course, and the question may be an empirical as well as practical one, is determining when that proposed optimal level is reached. For now, at least

one plausible indicator of that threshold can be conjectured. For example, giving excessive idiosyncratic credit to a counterpart or failing to monitor the relationship enough may be one indication that the optimal threshold has been surpassed. It is known that excessive monitoring can pervert trust (Williamson, 1993) but the fact is trust must not preclude monitoring.¹⁰

Long Term Commitment

Partners may benefit from having an open-ended, as opposed to a short-term oriented alliance. There will obviously be some concern about having an open-ended relationship with a partner you are not sure about. The natural thing is to want to "feel out" a partner first before making any long term commitments and such a view was reflected in the qualitative data. This study, however, suggests that a commitment to a long term relationship has a positive effect on current behavior. This may be so because a long term commitment brings both parties together because the future is tied to the present and the stakes become higher for both parties, so to say.

Partners can use specific strategies such as linking issues or carry out projects in several, as opposed to few phases thereby extending the time across which partners will interact. The findings from the present study are largely consistent with the anecdotal evidence on some of the preferences of Asian firms

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Ronald Reagan, the former president of the United States was often quoted as saying on US-Soviet arms control negotiations, "Trust, yes, but verify." Loosely translated, his point is that trust should not preclude monitoring.

in alliances. It is often said that Japanese and Chinese firms are hesitant to do a deal, ask a lot of questions and exercise caution, but once they decide to do a deal, they have a clear preference for a long term, as opposed to a one time deal. The natural outcome of open deals is to actively encourage partners to build relational assets for the future. In a sense, long term commitments make it possible for relational assets to become options that are built, held for sometime and redeemed by the actors when the time comes due.

The Nature of the Exchange

The findings from the study also indicate that the particular nature of an exchange has an effect on trust. Specifically, the study shows that the uncertainty associated with an alliance has an effect on trust. Combined, the three separate findings on the relationship between uncertainty and trust has three practical implications: (1) the nature of a specific relationship may be one determinant of the type of governance mechanism that partners choose. For example, in cases where uncertainty is very low, partners may need to worry less about trust building and instead use other arrangements such as contracts. Trust-building can be costly not only because of the consequences of misplaced or unrequited trust but also because frequency of contact and reciprocity associated with trust building takes up executive time. Thus, when partners determine low uncertainty with an exchange, they may be better off drawing extensive contracts to govern the relationship. (2) Under conditions of high uncertainty, partners will need to maintain close contact. Staying in touch will afford opportunities to quickly resolve conflict and create greater

understanding but (3) where uncertainty is too high, partners must be open to the possibility that trust may be extremely difficult to find. This is not to suggest that it is impossible to build trust under very high uncertainty. The challenge is to succeed in spite of it. The fact is uncertainty will make partners less inclined to trust, yet the need for trust is greater under such conditions. This of course presents a paradox so obvious it requires no further annotation.

Sustained Contact

A recurring theme in the data is the importance of sustained, active interaction for inducing trust building behaviors. Frequent and sustained contact may be one important way of sustaining trust in exchange. In an era where technology has opened up different modes of communication, there is a danger that actors will ignore the importance of face-to-face interaction and instead rely on less expensive and faster ways to keep in touch. While that should not necessarily mean the relationship will have problems, it is important that partners recognize the importance of personal interaction. At the very least, effort should be made to supplement electronic modes of communication with personal interaction.

Future Intentions, Present Behavior

Firms contemplating alliances may do well to ascertain the future intentions of their partners. The findings suggest that partner behavior in a current relationship may be related to the partner's future intentions. When partners are less concerned about the future, their present behavior may be counterproductive to trust building. For example, such partners are likely to discount the future heavily. Besides directly

ascertaining this, proxies can be used. One way is to ascertain the extent to which top management people in the firm believes interfirm collaboration is a viable option for its growth or the firm believes collaboration has become a recipe in its industry.

Tenure of Boundary Role Persons

This research confirms that turnover of key people who manage the relationship relates negatively to trust. One practical implication is that firms should select such individuals carefully. The available evidence in fact suggest that partners have not always attached great importance to the selection of boundary role people (Harrigan, 1988). Selecting people who are more likely to remain in the position for the duration of the alliance is one option. Another practical implication is that firms should try to assure the tenure of role persons in interorganizational exchange, unless of course there are extenuating circumstances for their removal.

Ultimately, turnover is often a feature of organizational life, some inevitable turnover in role persons is to be expected. The alternative then, and this is preferable under any circumstances, is to build a broad coalition of people for trust building such that the absence of one individual is less dramatic. Creating multiple champions for the relationship makes it less likely that turnover will become fatal to the relationship.

LIMITATIONS OF PRESENT RESEARCH

As noted earlier one, inevitable tradeoffs are made in research and this study is no exception. In the light of this, a number of limitations are noted. First, the choice of single informants. Multiple respondents could have been sought from each firm

and data aggregated for each firm. However, the theoretical and empirical insight on the validity of using key informants makes this weakness substantially less than it would seem. Besides, the triangulation of qualitative impressions with quantitative results seems an adequate means through which the validity of the study is increased.

Second is the nature of the data. Although the study relied on retrospective, cross-sectional data, the use of a hold out procedure, case analysis, bolsters the design. Nevertheless, the probability that respondents memories can fail them in retrospect cannot be discounted. Also, respondents may tend to remember failures more than successes and that can bias their recollections. In other cases, instances of opportunism will tend to loom larger than instances of reciprocity or goodwill in respondents memory. On a positive side, the nature of trust is such that one would expect partners to remember the events that were associated with it. In other words, the key construct in the study, trust is a salient construct.

Theory suggests that the recall of events in salient situations is often reflective of actual events (Nisbett & Wilson, 1977). Trust seems so important that events associated with it are likely to be remembered. Thus it is reasonable to assume correspondence between retrospective recollection and actual events here and at least one other researcher has made similar assumptions about the links between salient situations and retrospective data (Howell & Higgins, 1990).

Of course, one alternative to reliance on retrospective data is a longitudinal, real-time study that captures the evolution of trust building as it unfolds but such

longitudinal studies may not happen anytime soon despite the potential payoffs because of the difficulties associated with such a design. For example, it will involve getting privileged access and substantial investment in time. Alternatively, a focus on in-depth study of very few case studies can be used but the tradeoff will be low external validity.

Third although effort was made to control for method variance, this possibility cannot be completely eliminated. Social desirability may also be a problem because respondents may want to present a favorable image of their firm. Assuming this is the case, then one alternative explanation of the results is that respondents have some implicit theory of trust and so their perceptions may be driven more by their beliefs than by their memory. The present research applied both procedural and statistical controls to address this issue. For example, items were arranged in the questionnaire so that related variables were placed as far apart as possible. In other cases, statistical methods were used to control for this methodological nuisance.

Fourth causal interpretations of results in this study are precluded. Even if the study were designed to determine causality, it will not be easy to unambiguously ascertain the direction of causality unless data were collected at several stages. For example, prior relations data should be collected before the start of the relations and partnership context behavior data collected when the relationship is underway. In general, hypotheses are associational rather than causal. Nonetheless, the findings point to the sort of trust building issues that warrant our attention. Cross-sectional data may not be able to capture dynamic changes but it nonetheless points to the

most probable course of future development of the relationship. Besides, the use of cross-sectional data to examine relational phenomenon is supported by prior research (e.g. Geringer & Hebert, 1989).

Fifth, because this study is limited to formally announced alliances, the results do not apply in informal relations. Such relations may exist but identifying them will be problematic. The decision to focus on North American-based alliances, as opposed to strictly international alliances should not be considered a liability. Lessons from this context may be fruitfully built on in an international context. Indeed, as Barkemar, Shenkar, Vermeulen & Bell (1997) point out, domestic joint ventures play an important role in preparing firms for cross-border partnering. The authors go on to suggest that international business research should not be rigidly confined to non-domestic operations. This logic can be extended to appreciate the fact that valuable lessons exist in the present research for trust building in cross-border alliances.

Finally, some instruments used in the present study can be improved. For example, the scale for measuring industry norms can be further developed and refined. It may also be difficult to replicate the qualitative findings used to triangulate the results, but this incidentally is one limitation of triangulation (Todd, 1989).

CONCLUDING NOTES

Trust remains an important, but less understood concept. Although an interpersonal thing, the concept of trust has been conceptualized in this research,

as in many others, as a phenomenon *sui generis*. As businesses increasingly collaborate with firms both locally and across borders including countries with less developed property rights regimes, the limits of contracts will loom large. One feasible alternative may be reliance on qualitative coordination and trust may as well be its wellspring. The present research relied on survey data to develop a mainly variance theory (Mohr, 1982) and relied on case study to address the "how" questions more directly. It considered partner perceptions and preferences, outside of the partnership; the structure of the relationship as well as partnership context behaviors. The research used game, micro behavioral, and economic sociology paradigms as theoretical anchors to address key issues in the study.

Even if trust is not the Rosetta Stone, and no one suggests it is, its presence has positive implications for economic exchange. In terms of coordination, trust may after all be quite efficient because in the absence of trust, distrust becomes the functional equivalent. Yet, distrust presents a paralyzing and costly alternative partnering firms would rather do without. The fact that distrust is more costly than trust has been elsewhere (Luhmann, 1979). Research focus on trust in alliances will certainly yield substantial dividends. In that enterprise, prudence and realism must be the guiding principles in theorizing. Taping at multiple sources of trust will be one way of reducing skepticism and advancing research on the concept of interfirm trust.

LIST OF TABLES

Table 10
Results of Multiple Regression Analysis of Antecedents of Interfirm Trust-Full Model
(sample: managers, N=64 pairs(128 individual firms))

Independent Variables	Dependent Variable: Interfirm Trust			
	<i>b</i>	s.e (b)	β	<i>t</i>
(Constant)	29.1	31.25		.93
Control Variables				
Interdependence	-.28	.30	-.06	-.93
Previous experience	-.99	.61	-.10	-1.6
Predictor Variables				
Third party referral	-.30	.24	-.07	-1.2
Collaborative norm	-1.5	2.2	-.19	-.71
Initial perception	.41	.46	.06	.90
Uncertainty	.63	.25	.16	2.5
Open endedness	.01	.77	.02	.02
Future intentions	5.7	.70	.65	8.1***
Relational intensity	.19	.24	.57	.78
Market competition	3.4	1.8	.13	1.8
Relational intensity X collaborative norm	.19	.24	.57	.78
Relational intensity X role person tenure	-1.6	.62	-.71	-2.6**
R				90.0%
R ²				81.0%
Adjusted R ²				77.4%
Regression F				22.56***

p* < .05, *p* < .001 ****p* < .0001

Table 11
Results of Multiple Regression Analysis of Interfirm Trust on Performance (Full Model)
(sample: managers, N=64 pairs(128 individual firms)

Independent Variables	Dependent Variable: Performance			
	<i>b</i>	s.e (b)	β	<i>t</i>
(Constant)	8.0	12.4		.65
Control Variables				
Interdependence	-.16	.12	-.12	-1.36
Previous experience	-.30	.24	-.10	-1.2
Predictor Variables				
Interfirm Trust	.18	.05	.60	3.3**
Third party referral	.07	.09	.06	.79
Collaborative norm	-.61	.88	-.24	-.69
Initial perception	-.09	.18	-.04	-.52
Uncertainty	.10	.10	.09	1.0
Open endedness	.60	.30	.20	1.9
Future intentions	-.23	.42	-.08	-.55
Market competition	-.62	.75	-.07	-.82
BRP tenure	3.3	2.5	.44	1.2
Relational intensity	.04	.09	.47	.50
Relational intensity X role person tenure	-.44	.26	-.61	-1.6
Relational intensity X collaborative norm	.04	.09	.47	.50
R				84.3%
R ²				71.0%
Adjusted R2				62.8%
Regression F				8.58***

* $p < .05$, ** $p < .001$ *** $p < .0001$

Table 12

Results of Multiple Regression Analysis of Moderating Role of Industry Collaborative Norm on Relational Intensity and Interfirm Trust (N=191)

Variable	b	s.e (b)	β	t	Significance of t
Control Variables					
Interdependence	-.63	.22	-.19	-2.7	.06
Previous Experience	-.34	.57	-.04	-.59	.55
R ²	.105				
Adjusted R ²	.091				
Regression F	7.3				
p	.000				
Test for moderating effect of collaborative norm on relational intensity-trust relationship					
Step 2					
Relational intensity	2.2	.72	.42	3.1	.02
Step 3					
Relational intensity/collaborative norm	-.06	.04	-.19	-1.3	.16
R ²	.114				
Adjusted R ²	.095				
Regression F	6.0				
p	.000				

Table 13
Results of Multiple Regression Analysis of Relational Intensity
(N=64 pairs)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	-.55	.52	-.12	-.10	.29
Previous experience	-1.2	1.0	-.13	-1.1	.25
Predictor Variable					
Relational Intensity	1.8	.55	.39	3.4	.01
R ²	.18				
Adjusted R ²	.14				
Regression F	4.4				
p	.007				

Table 14
Results of Multiple Regression Analysis of Relational Intensity (Relationship Context Behavioral Variable)
(N=191)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	-.63	.22	-.19	-2.7	.06
Previous experience	-.32	.57	-.03	-.56	.57
Predictor Variable					
Relational Intensity	1.3	.36	.26	3.8	.00
R ²	.32				
Adjusted R ²	.09				
Regression F	7.32				
p	.000				

Table 15
Results of Multiple Regression Analysis of Uncertainty and Open endedness
(Structural sources of Interfirm Trust)
(N=64 pairs)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	.13	.46	.03	.28	.77
Previous experience	-2.0	.95	-.22	-2.1	.03
Predictor Variables					
Uncertainty	1.1	.40	.29	2.7	.00
Open endedness	4.8	.98	.52	4.9	.00
R^2	.40				
Adjusted R^2	.36				
Regression F	10.1				
p	.000				

Table 16
Results of Multiple Regression Analysis of Uncertainty and Open endedness
(Structural sources of trust)
(N=191)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	-.21	.19	-.06	-1.0	.28
Previous experience	-.84	.49	-.10	-1.7	.09
Predictor Variables					
Uncertainty	.81	.23	.20	3.4	.00
Open endedness	5.3	.59	.53	8.9	.00
R²	.37				
Adjusted R²	.36				
Regression F	28.20				
p	.000				

Table 17
Results of Multiple Regression Analysis of Partners' Initial Perception
(N=64 pairs)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	-.41	.54	-.09	-.75	.45
Previous experience	-1.0	1.1	-.10	-.88	.37
Predictor Variable					
Initial perception	1.9	.82	.28	2.3	.02
R ²					
Adjusted R ²	.10				
Regression F	.06				
p	2.36				
	.08				

Table 18
Results of Multiple Regression Analysis of Partners' Initial Perception
(N=191)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	-.37	.22	-.11	-1.6	.09
Previous experience	-.12	.56	-.01	-.22	.82
Predictor Variable					
Initial perception	1.75	.35	.34	5.0	.00
R ²	.15				
Adjusted R ²	.13				
Regression F	10.9				
p	.000				

Table 19
Results of Multiple Regression Analysis of Referrals and Future Intentions
(Exogenous Variables)
(N=191)

Variable	b	s.e (b)	β	t	Significance of t
Control Variables					
Interdependence	-.42	.16	-.13	-2.5	.01
Previous experience	-.58	.42	-.07	-1.3	.16
Predictor Variables					
Referrals	-.38	.21	-.09	-1.8	.06
Future intent	5.6	.42	.68	13.4	.00
R ²	.52				
Adjusted R ²	.51				
Regression F	51.00				
p	.000				

Table 20
Results of Multiple Regression Analysis of Referrals and Partners future intentions
(N=64 pairs)

Variable	<i>b</i>	s.e (b)	β	<i>t</i>	Significance of <i>t</i>
Control Variables					
Interdependence	-.55	.30	-.12	-1.8	.07
Previous experience	-1.0	.63	-.11	-1.7	.09
Predictor Variables					
Referrals	-.20	.27	-.05	-.74	.46
Future intention	7.3	.60	.83	12.1	.00
R ²	.72				
Adjusted R ²	.70				
Regression F	38.2				
p	.000				

Table 21

Results of Multiple Regression Analysis of Antecedents of Interfirm Trust-Full Model
(sample: managers, N=191)

Independent Variables	Dependent Variable: Interfirm Trust			
	<i>b</i>	<i>s.e (b)</i>	β	<i>t</i>
(Constant)	14.7	17.8		.82
Control Variables				
Interdependence	-.15	.15	-.04	-1.0
Previous experience	-.58	.37	-.07	-.15
Predictor Variables				
Third party referral	-.41	.18	-.10	-2.2*
Collaborative norm	-.58	1.2	-.08	-.47
Initial perception	.95	.24	.18	3.97***
Uncertainty	.55	.18	.14	3.06**
Open endedness	1.7	.53	.17	3.27**
Future intentions	4.06	.41	.49	9.82***
Relational intensity	.71	1.6	.13	.43
BRP tenure	8.6	4.8	.32	1.7
Market competition	3.5	1.3	.11	2.6**
Relational intensity X role person tenure	-1.1	.47	-.44	-2.36*
Relational intensity X collaborative norm	.001	.12	.04	.13
R				82.4%
R ²				67.9%
Adjusted R ²				65.6%
Regression F				28.82***

* $p < .05$, ** $p < .001$ *** $p < .0001$

Table 22
Results of Multiple Regression Analysis of Interfirm Trust on Performance (Full Model)
(sample: managers, N=191)

Independent Variables	Dependent Variable: Performance			
	b	s.e (b)	β	t
(Constant)	5.6	5.2		1.08
Control Variables				
Interdependence	-.10	.04	-.10	-2.4*
Previous experience	-.24	.11	-.09	-2.2*
Predictor Variables				
Interfirm Trust	.17	.02	.56	7.7***
Third party referral	.06	.05	.05	1.2
Collaborative norm	-.05	.36	-.26	-15.
Initial perception	-.04	.07	-.00	-.06
Uncertainty	.08	.05	.07	1.6
Open endedness	.66	.16	0.22	4.1***
Future intentions	-.03	.15	-.01	-.23
Relational intensity	-.55	.47	-.35	-1.1
Market competition	.10	.40	.01	.26
BRP tenure	1.5	1.4	.18	1.0
Relational intensity X Role person tenure	-.28	.14	-.36	-2.0*
Relational intensity X collaborative norm	.05	.03	.52	1.5
R			83.8%	
R ²			70.2%	
Adjusted R ²			67.8%	
Regression F			29.64***	

*p < .05, **p< .001 ***p <.0001

Table 23
Results of Multiple Regression Analysis of Control Variables (Interdependence, Previous Experience & Contract Type)
(sample: managers, N=191)

Independent Variables	Dependent Variable: Performance				
	b	s.e (b)	β	t	Sig
Constant	70.4	3.98		17.6	.000
Interdependence	-.55	.23	-.16	-2.3	.01
Previous Experience	-.34	.59	-.04	-.58	.56
Contract ¹¹	-1.42	.55	-.18	-2.57	.011
R	.263				
R ²	.069				
Adjusted R ²	.054				
F	4.6				
p	.004				

¹¹ The variable contract represents the type of arrangement, e.g. JV, or some in-house collaboration. It was not originally included in the analysis.

Table 24
Test of curvilinear relationship between uncertainty and trust

Independent Variables	Dependent Variable: Trust				
	<i>b</i>	s.e (b)	β	<i>t</i>	Sig
Constant	35.8	5.2		6.8	.0000
Uncertainty	4.7	1.2	1.2	3.7	.0002
Uncertainty**2	-.22	.07	-.96	-3.0	.0028
R	.33				
R ²	.10				
Adjusted R ²	.09				
F	11.54				
p	.000				

Table 25
Test of curvilinear relationship between Trust and Initial perception
(Sample, managers N=191)

Independent Variables	Dependent Variable: Trust				
	<i>b</i>	s.e (b)	β	<i>t</i>	Sig
Constant	-.16		14.4	-1.1	.2664
Perception	11.74	2.6	2.3	4.4	.0000
Perception**2	-.44	.11	-1.9	-3.7	.0002
R	.44				
R ²	.19				
Adjusted R ²	.18				
F	23.08				
p	.000				

Table 26
Results of Multiple Regression Analysis Testing Mediation by Relational Intensity and Uncertainty on Trust
(sample: managers, N=191)

Independent Variables	Dependent Variable: Performance				
	b	s.e (b)	β	R ²	F
(Constant)	57.75	3.8			15.11**
Model 1					
Previous experience	-.70	.59	-.08		-1.1
Interdependence	-.60	.22	-.18		2.6*
Uncertainty	1.0	.28	.27	.10	7.5**
Model 2					
Uncertainty	.94	.28	.23		3.3**
Relational Intensity	1.1	.36	.22	.15	10.3*

p < .05, **p< .001 ***p <.0001

Table 27
Results of Multiple Regression Analysis of Moderating Role of Boundary Role Person
Turnover on Relational Intensity and Trust (N=191)

Variable	b	s.e (b)	β	t	Significance of t
Control Variables					
Interdependence	-.57	.23	-.17	-2.4	.01
Previous Experience	-.21	.58	-.02	-.36	.71
Test for moderating effect of brp turnover on relational intensity-trust relationship					
Step 2					
BRP Turnover	-2.3	1.9	-.08	-1.1	.23
R ²					.04
Adjusted R ²					.02
Regression F					2.8
p					.05
Step 3					
BRP turnover/ Relational intensity	-1.8	.73	-.75	-2.4	.01
R ²					.14
Adjusted R ²					.11
Regression F					6.0
p					.01

Table 28
Results of Multiple Regression Analysis Testing the relationship between Market Competition and Trust
(sample: managers, N=191)

Independent Variables		Dependent Variable: Trust			
	<i>b</i>	s.e (b)	β	<i>t</i>	Sig
Constant	56.27	3.7		15.12	.000
Control Variables					
Interdependence	-.56	.22	-.17	-2.4	.01
Previous Experience	-.002	.56	-.003	-.03	.97
Predictor Variable					
Market Competition	9.72	2.00	.32	4.84	.000
R	.379				
R ²	.143				
Adjusted R ²	.130				
F	10.43				
p	0.000				

Table 29
Results of Multiple Regression Analysis Testing the relationship between Market Competition and Trust
(sample: managers, N=64 pairs)

Independent Variables		Dependent Variable: Trust			
	<i>b</i>	s.e (b)	β	<i>t</i>	Sig
Constant	54.65	4.3		6.5	.000
Control Variables					
Interdependence	-.25	.54	-.05	-.46	.64
Previous Experience	-.89	1.11	-.097	-.80	.42
Predictor Variable					
Market Competition	8.8	3.25	.33	2.72	.008
R	.36				
R ²	.13				
Adjusted R ²	.089				
F	3.06				
p	0.03				

Table 30
Results of Thematic Content Analysis of Qualitative Data

Antecedents	Representative Quotes	Summary/ Theme (<i>Italics</i>)
Interfirm Trust	<p>I don't even have to like him, I just need to trust him Trust is very important, its number one. I don't know what people you will talk to and they will say otherwise.</p> <p>I did a deal with the guy I trusted even though their financial offer was lower I didn't give it to the guys with the higher offer because I didn't trust them</p> <p>Trusting is good..its more powerful. I don't have to fall in love with that person, I don't have to have a friend in him, I just need to trust him. Confidence and trust are very important right up front, day one.. no question, I think its essential.</p>	
Initial perception of trustworthiness	<p>I usually trust people until they prove not to be trustworthy</p> <p>We had a feeling they connected with us at the outset..we had a feeling they would make things happen.</p> <p>The feel of the partners, the initial goodwill is important, you have to trust the guy across the table before you negotiatea partnership is like a marriage and you're stuck with that firm for a number of years.</p> <p>The marriage parallel..once you want to break away, its not easy. Our expectations must be very well defined from the begging You need to do business with people you trust, up-front. I don't have to like them.</p>	

If you have trust... it must be something really bad to break it.
I think its a concern up-front to say can we feel that we trust these people?..
I think if you feel like you can't trust the whole organization, then you shouldn't do the deal.
Initial perceptions affect behavior and outcomes

Industry recipe

Joint ventures are the wave of the future, there is no other option... collaboration
You need to cut costs, and that means collaboration.

The faster I can build alliances, the faster I'm coming out of the water.

A lot of companies will do alliances, so that is the story basically.

This industry can't survive without alliances.. People specialize, they need each other.

I think the growth in alliances has been exponential.. Its very flexible...
look at the big pharmaceutical companies, they are having alliances with all
small biotech companies

*Collaboration is recognized as a recipe
in industries studied*

Market competition

I think it is very, very difficult, if not impossible to have a relationship
With a partner with whom you are in business competition...that is asking for trouble

Don't go into a partnership with a competitor... both parties are wary.. you have to lie..
These partnerships go bad.

People do unscrupulous things.. Build alliances so they can learn everything
about their counterpart so they can go out and do it on their own.

This alliance was done so that we could take out a potential competitor

*Competition is generally seen as a stumbling
block for trust building*

BRP tenure

Over the years, the key people you do business with have gone or left..
So you are left with new people.. These people may not necessarily
share the original background.

*It is recognized that turnover among key
people can affect the relationship*

Relational Intensity

They wanted this marriage to work, when there were points of contention..
they were able to have open dialogue and discussion.

If you give it enough attention...work as a team.. Have mutual success orientations, things will work.

We needed full time people... a big part of what I do is managing the relationship

There is communication.. We are exchanging information..
and there is good communication.

Generally it works every time..we sit down, lay it on the table, be as frank
as possible and seek a resolution..when there is paper flying back and forth, things can go quite awry.

Lack of communication signifies a lack of trust.

Good communication, complimentary expertise and technology, a common vision are necessary

Relational intensity promotes trust

Referrals

We can find partners via referrals, the Web, that kind of thing.

Each business, field or domain gets to be very small because you
know everybody... more often its done through informal contacts.

They really play a minimal role...
when it comes to the real relationship between two partners.

*People recognize they can use third party referrals
but trust in the dyad is not strongly influenced by this*

Interdependence

For many small companies, they need the alliance... they need the money.
even if they don't necessarily trust the people, they have to move forward
because they need the money.

The small biotech firm needs two things: financing and validation from the big guy
and that drives the relationship.

From a small company perspective.. sometimes you have to lift
your skirt a bit higher, as an analogy..sometimes you have to give a little bit
more information than you may really want .

Influence and power are often present

Open endedness

Its like a marriage, you have to be in it for the long haul.

Deals are never totally open-ended.. But its okay.. As long as I have the option
of getting out at any time.

*Open endedness is seen as positive but
actors are wary least it ties their hands*

Uncertainty

With risk.. people try to influence the process. What we do is risky..
Nothing is proven in this business.

*There is high risk associated with the
industries and alliances studied*

Figure 3
Curvilinear Relationship between initial perceptions and trust

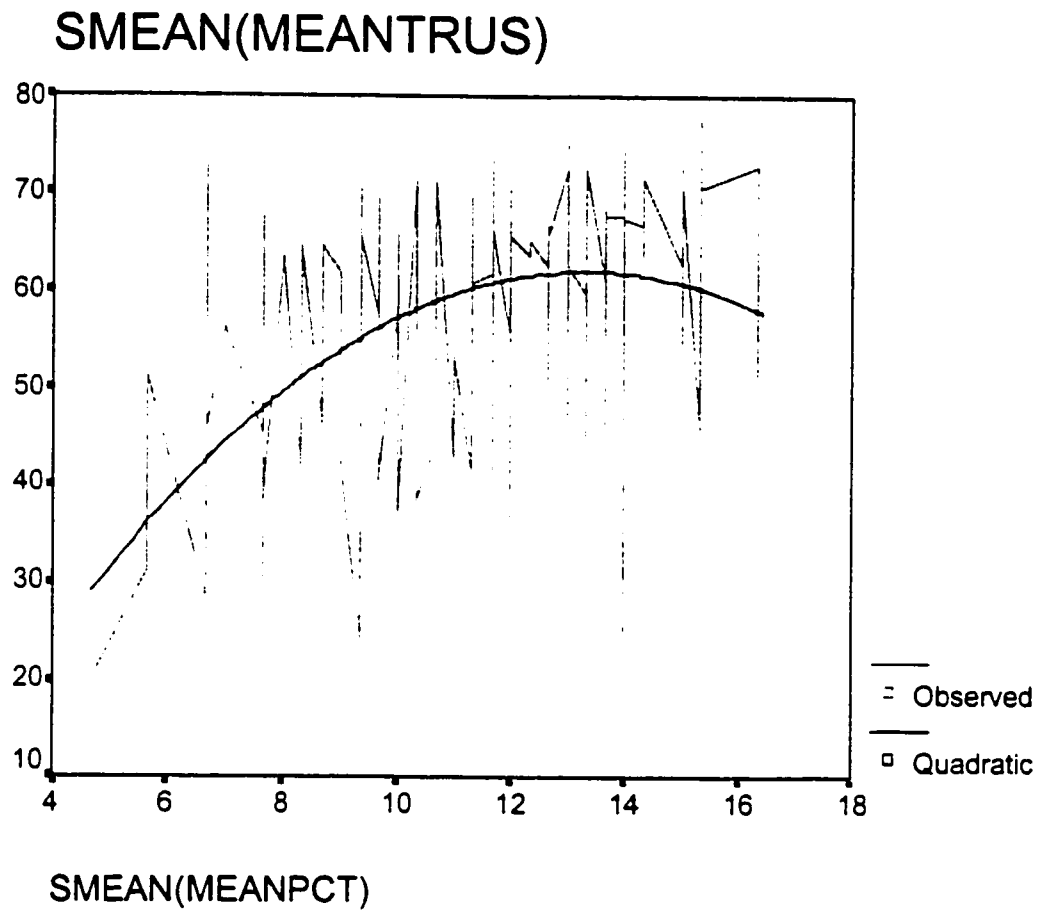
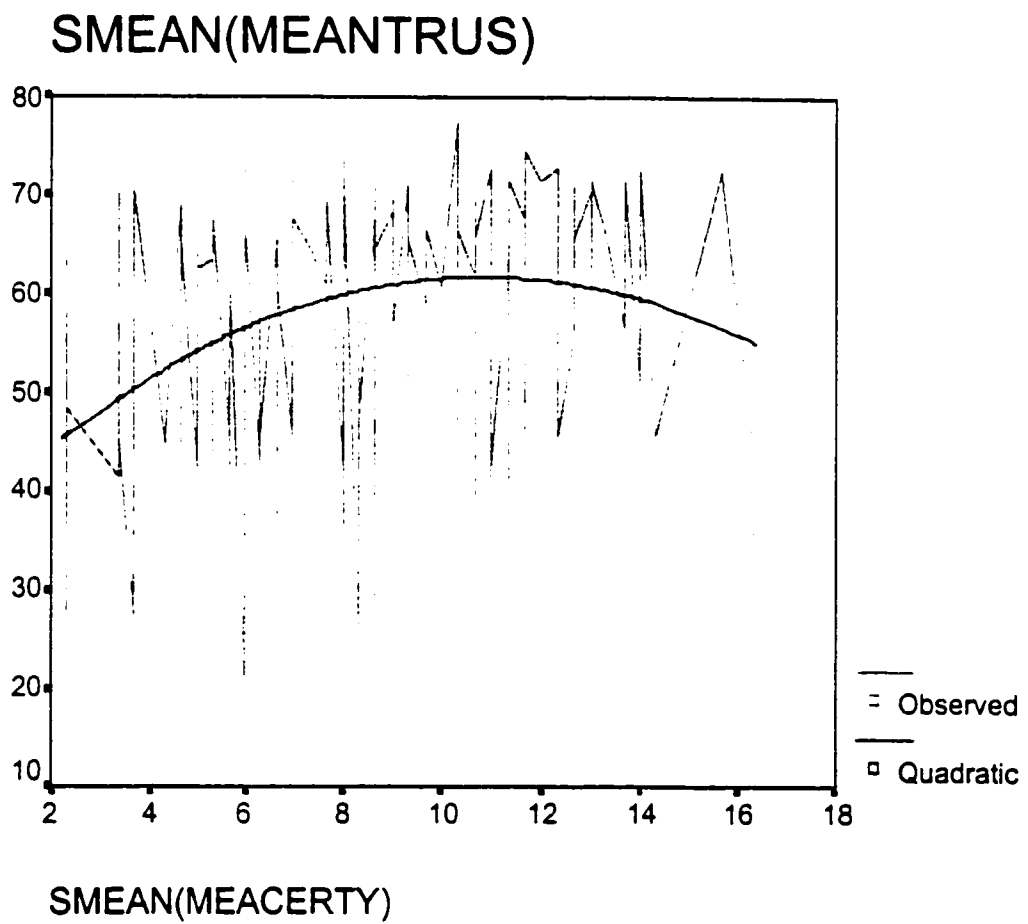


Figure 4
Curvilinear Relationship between uncertainty and trust



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APPENDICES

Appendix 1

INTER-FIRM COLLABORATION SURVEY 1997

PLEASE NOTE:

- Even if your alliance has terminated, please answer the questions retrospectively
- All information collected in this questionnaire will be kept in utmost confidence
- It is important to answer all questions
- The questions are designed so you can answer them quickly
- Please return all questionnaires in the self-addressed, stamped envelope attached to the questionnaire

THANK YOU FOR YOUR COOPERATION

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DEMOGRAPHIC DATA

This section asks some general questions about you and your firm

1. Which of the following best describes your firm's primary function?

- ☐ Chemical including pharmaceutical manufacturing
- ☐ Biotechnology Research & Development
- ☐ Medical diagnostic and equipment manufacturing
- ☐ Industrial and commercial machinery manufacturing
- ☐ Transportation and logistics management services
- ☐ Sales and marketing
- ☐ Other (please specify) _____

2. What is your age? _____ Years

3. What is your gender?

- ☐ Female
- ☐ Male

4. Please indicate your highest educational level reached:

- ☐ Primary/High School
- ☐ Post secondary
- ☐ Bachelors degree
- ☐ Graduate degree

5. Which of the following best describes your position in the firm?

- ☐ President/CEO
- ☐ Senior Vice-President
- ☐ Other Top Management
- ☐ Middle Management

6. Please indicate which of the following applies to your firm:

a) Sales/ Revenue (last fiscal year)

- ☐ under \$1 million
- ☐ 5-10 million
- ☐ 10-25 million
- ☐ 26-50 million
- ☐ 51-100 million
- ☐ over 100 million

b) Number of employees (currently)

- ☐ Less than 50 employees
- ☐ 50 to 100 employees
- ☐ 101-500
- ☐ 501-1000
- ☐ More than 1000

YOUR FIRM'S PREVIOUS EXPERIENCE WITH ALLIANCES

The following questions ask about your firm's previous experience with strategic alliances(partnering)

7. For these questions, please indicate your firm's previous experience with partnering by circling an appropriate number on the scale 1 to 7.

- | | | | |
|---|---------------------------|-------------------------|---------------------|
| a) How would you describe your firm's previous use of partnerships (alliances) in general? | Not at all
Substantial | Somewhat
Substantial | Very
Substantial |
| | 1 2 | 3 4 | 5 6 7 |
| | Not at all
Satisfied | Moderately
Satisfied | Highly
Satisfied |
| b) If your firm has used alliances in the past, how would you describe, on average, its satisfaction with the experience? | 1 2 | 3 4 | 5 6 7 |
| | Not at all
Likely | Somewhat
Likely | Very
Likely |
| c) How likely is it that your firm will use strategic alliances again in the near future? | 1 2 | 3 4 | 5 6 7 |

CURRENT ALLIANCE

The following questions and the remainder of the questionnaire ask about your relationship with the partner named in the cover letter

8. Please indicate the nature of your current and previous relations with your partner.

a) Does your firm and your partner presently compete directly in the same product market? ☐ Yes ☐ No

b) Which of the following best describes your previous relationship with this partner?
(Please check any of the following that apply)

- ☐ None (no previous relationship)
- ☐ Alliance Partner
- ☐ Supplier
- ☐ Competitor
- ☐ Customer
- ☐ Licensee/licensor
- ☐ Distributor
- ☐ Other (please specify) _____

- | | | | |
|---|-------------------------|-------------------------|---------------------|
| c) If your firm has had any type of previous dealings with this partner, how would you describe your firm's satisfaction? | Not at all
Satisfied | Moderately
Satisfied | Highly
Satisfied |
| | 1 2 | 3 4 | 5 6 7 |

- d) Does your firm currently have more than one form of alliance with this partner?
☐ Yes ☐ No (please go to question 8f on next page)
- e) If your firm currently has more than one alliance with this partner, please indicate the number of alliances
2 3 4 5 6+
- f) Which of the following best describes the type of contract that governs your alliance with this partner?
☐ Joint venture (*there is a separate jointly managed entity*)
☐ Co-development, including development of product or process
☐ Co-market, marketing including joint promotion
☐ Collaboration (including research and development)
☐ License, including sub-license and cross-license
☐ Supply
☐ Other (please describe) _____

- | | Not at all Comprehensive | | Somewhat Comprehensive | | Extremely Comprehensive | | |
|---|--------------------------|---|------------------------|---|-------------------------|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g) If the relationship is governed by a written contract, how comprehensive is the agreement? | | | | | | | |

9. Please indicate the extent to which you think the following were important in the formation of the alliance with your partner. (Circle appropriate number)

- | | Not at all Important | | Somewhat Important | | Critically Important | | |
|--|----------------------|---|--------------------|---|----------------------|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| a) Venture capital company financing of the deal | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) Commercial bank financing of the deal | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Government financing (including local, state/provincial or federal grant) of the deal | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) The reputation of your partner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e) The size of your partner (in terms of market share) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

10. Please indicate the extent to which you think the following were important to and facilitated the formation of the current alliance with your partner. (Circle appropriate number)

- | | Not at all Important | | Somewhat Important | | Critically Important | | |
|---|----------------------|---|--------------------|---|----------------------|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| a) Friendship between managers from both firms | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) The presence of a "champion" or key support from a manager in our firm for this relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Proximity (in terms of geographic distance) of your partner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) Referrals by professional consulting firms | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e) Referrals by previous employees | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| f) Referrals by common customers | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g) Referrals by industry association executives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| h) Contacts made from shared membership in industry or professional associations by managers from both firms | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

11. Please indicate the extent to which the following statements apply to your current relationship with this partner. (Circle appropriate number)

- | | Never/
Hardly | | | Occasionally | | | Very
Often |
|--|--|---|---|--------------|---|---|---------------|
| a) How often do you have misunderstandings in this relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) How often do you and your partner use the provisions in your contract to resolve some misunderstanding? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) How often have you and your partner renegotiated all or parts of the original agreement? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) If you have renegotiated your agreement, was it in response to some misunderstanding? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | |

12. Please indicate the extent to which the following are predictable about the alliance. (Circle appropriate number)

- | | Completely
Unpredictable | | | | Completely
Predictable | | |
|--|-----------------------------|---|---|---|---------------------------|---|---|
| a) Future financial investments required in this relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) The future total costs associated with the alliance (including the costs of all projects related to the alliance) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) The financial payoff (profitability) of this relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

RELATIONSHIP BETWEEN THE COUNTERPART MANAGERS

The following questions ask about partnership-related interaction between managers from both firms

13. The following questions refer to face-to-face interactions between you and your counterpart manager in your partner's firm. Please indicate: (Circle appropriate number)

- | Daily
1 | Weekly
2 | Monthly
3 | Quarterly
4 | Semi-Annually
5 | Annually
6 | Rarely
7 | |
|---|-------------|--------------|----------------|--------------------|---------------|-------------|---|
| a) How frequently do you initiate alliance-related interaction with your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) How frequently does your partner initiate alliance-related interaction with you? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- c) How frequently do you interact with your counterpart manager informally or socially? 1 2 3 4 5 6 7
- d) How often do you interact formally with your counterpart? 1 2 3 4 5 6 7
- e) Have you always conducted alliance-related business with the same contact person(s) in your partner's firm since the relationship started? ☐ Yes (go to question 14, next page) ☐ No
- f) If there has been some change of the contact person, how would you say this has affected the relationship with your partner? Hardly Slightly Very Much 1 2 3 4 5 6 7

INITIAL PERCEPTIONS

14. The next four questions ask your opinion about your partner at the start of your relationship. They relate to your firm's initial perceptions about your partner. Your firm may still feel this way or it may not. Please answer the following questions with regard to how your firm felt then, not necessarily how your firm feels now. (Circle appropriate number)

- | Strongly Disagree | Disagree | Slightly Disagree | Neither Disagree Nor Agree | Slightly Agree | Agree | Strongly Agree | |
|---|----------|-------------------|----------------------------|----------------|-------|----------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| a) Our firm was fully committed to this alliance even before we got to know our partner very well | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) We often verified information our partner gave us at the start of this relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) We knew we could count on our partner from the start of the relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) We had complete confidence in our partner from the very beginning of the alliance | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

15. Please indicate the extent to which the following statements are accurate about your alliance. (Circle appropriate number)

- | Completely Inaccurate | Inaccurate | Slightly Inaccurate | Neither Accurate Nor Inaccurate | Slightly Accurate | Accurate | Completely Accurate | |
|--|------------|---------------------|---------------------------------|-------------------|----------|---------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| a) Both parties expect the relationship to last a long time | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) It is assumed that renewal of agreements in this relationship will generally occur | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Our firm and its partner make plans not only for the current alliance, but also for the continuance of the relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) We can describe the relationship with this partner as a long term relationship | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

16. Please indicate the degree to which you disagree or agree with the following statements about your relationship.
(Circle appropriate number)

Strongly Disagree 1	Disagree 2	Slightly Disagree 3	Neither Disagree Nor Agree 4	Slightly Agree 5	Agree 6	Strongly Agree 7
a) We have a sharing relationship with our partner	1	2	3	4	5	6 7
b) We can both freely share our ideas, feelings, and hopes	1	2	3	4	5	6 7
c) We can talk freely with our partners about difficulties we are having with the relationship and know that they will want to listen	1	2	3	4	5	6 7
d) If we share problems with our partner, we know they would respond constructively and with care	1	2	3	4	5	6 7
e) I would have to say that my firm and our partner have both made considerable emotional investments in our working relationship	1	2	3	4	5	6 7
f) Our company helps out our partner in whatever ways they ask	1	2	3	4	5	6 7
g) Our partner helps our company out in whatever ways we ask	1	2	3	4	5	6 7

17. Please indicate the extent to which you disagree or agree with the following statements. (Circle appropriate number)

Strongly Disagree 1	Disagree 2	Slightly Disagree 3	Neither Disagree Nor Agree 4	Agree 5	Slightly Agree 6	Strongly Agree 7	
a) We think our partner tells the truth in negotiations	1	2	3	4	5	6	7
b) We think that our partner meets its negotiated obligations to our firm	1	2	3	4	5	6	7
c) In our opinion, our partner is reliable	1	2	3	4	5	6	7
d) We think our partner succeeds by stepping on other people	1	2	3	4	5	6	7
e) We feel that our partner tries to get the upper hand	1	2	3	4	5	6	7
f) We think that our partner takes advantage of our problems	1	2	3	4	5	6	7
g) We feel that our partner will keep his word	1	2	3	4	5	6	7
h) We feel that our partner negotiates with us honestly	1	2	3	4	5	6	7
i) We think our partner does not mislead us	1	2	3	4	5	6	7
j) We feel that our partner tries to get out of its commitments	1	2	3	4	5	6	7
k) We feel that our partner negotiates joint expectations fairly	1	2	3	4	5	6	7

- l) We feel that our partner takes advantage of people who are vulnerable

1 2 3 4 5 6 7

MUTUAL DEPENDENCE

18. Please indicate the extent to which you disagree or agree with the following statements. (Circle appropriate number)

- | | Strongly
Disagree | | | | | | Strongly
Agree |
|---|----------------------|---|---|---|---|---|-------------------|
| a) If the relationship with our counterpart was terminated, it would be relatively easy to find a similar partner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) If the relationship with our partner was terminated, it would not hurt our operations | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) There are many firms providing the same services as our partner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) Finding a new partner will only require limited effort on our part | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

19. Please indicate the extent to which you disagree or agree with the following statements about your firm's overall satisfaction with the partnership as this point in time. If your alliance has ended, indicate your firm's satisfaction at the end of the relationship. (Circle appropriate number)

- | | Strongly
Disagree | | | | | | Strongly
Agree |
|---|----------------------|---|---|---|---|---|-------------------|
| a) Overall, we are very satisfied with the performance of this alliance | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) Our company's working relationship with this partner has been an unhappy one | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Overall, our expectations about this relationship have been met | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

INDUSTRY CONTEXT

The following questions ask your opinion about your industry

20. Please indicate the extent to which you disagree or agree with the following. (Circle appropriate number)

- | | Strongly
Disagree | | | | | | Strongly
Agree |
|---|----------------------|---|---|---|---|---|-------------------|
| a) Most managers in this industry tend to think alike on most industry-related issues | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) Working in partnership with other firms is widely accepted in this industry | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Working in partnership with other firms has become a critical factor for success in our industry | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| d) It is difficult for new firms to enter this industry | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e) Operating expenditures or fixed costs (these are independent
of the scale of production) are high in this industry | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

21. Is there anything else you would like to tell us about your alliance or alliances in general? (Please use this space)

**THIS IS THE END OF THE QUESTIONNAIRE
THANK YOU VERY MUCH FOR YOUR ASSISTANCE**

Appendix 2

REQUEST FOR PARTICIPATION IN A RESEARCH STUDY ON INTERFIRM COOPERATION

November, 1997

Dear Mr/Ms:

I am writing to seek your help in a research project studying cooperation among North American based firms. This research is supported by the Faculty of Commerce, Concordia University in Montreal.

It is well known that various forms of strategic alliances are taking place between firms in many industries including yours. Like you, we agree that there are benefits to partnering. But so far, the available evidence suggests that the overall performance record of most alliances has not been very good. We need your help in understanding how to manage these relations effectively. Your input is very important and we are seeking your participation in this study. What you tell us is very important and vital to our understanding of how best to manage alliances.

Among other things, we need a greater understanding of the factors that promote mutual trust and cooperation between partners. Such insight will help the structuring and management of alliances including the design of better intervention strategies and programs to increase the success rate of alliances.

We would very much like to include your alliance with (NAME OF PARTNER) in our study. Our study does not ask about specific financial information. No individual company data will be reported. Only aggregated results will be produced and your company participation will not be disclosed. We assure you that all information gathered will be treated with utmost confidentiality. A summary of the study results, including specific recommendations on how to improve management processes in partnerships will be sent to participating firms.

We very much appreciate your personal time and effort in completing the enclosed questionnaire at your earliest convenience. If you are unable to complete the questionnaire, please have another person who is equally knowledgeable about your alliance with this partner complete the questionnaire. The questions are designed so that you can answer them quickly. A postage paid, self-addressed envelope is enclosed for your use. We thank you very much for your assistance.

Yours sincerely,

Henry Adobor
Project Coordinator

Appendix 3

INTERFIRM COOPERATION SURVEY: A
REMINDER NOTE

December, 1997

Dear Sir/Madam:

Re: INTERFIRM COLLABORATION RESEARCH SURVEY-1997

A few weeks ago, we mailed you a questionnaire soliciting your help in a study on strategic alliances. We hope you have received our questionnaire by now. This is a reminder note.

We would very much appreciate if you can complete and mail your completed responses back to us at your earliest convenience. If you have already done so, we sincerely thank you and please ignore this note. If you have not received the questionnaire or you need a new one, we would be delighted to rush you one. You can get one by e-mailing, faxing or telephoning us via the contact information that appears below.

We wish to reiterate the fact that your help is indispensable to the success of this study and we very much appreciate the effort and time you put into this. Please accept our best wishes for the New Year. Thank you very much.

Sincerely,

Henry Adobor
Project Coordinator
Email: adobor@alcor.concordia.ca
Phone: 514-848-2738
Fax: 514-848-4593

Appendix 4

REQUEST FOR INTERVIEW

January 1998

I am writing to seek your help in a research project studying cooperation among North American based firms. This research is supported by the Faculty of Commerce, Concordia University in Montreal. As part of this project, we seek an interview with you.

It is well known that various forms of strategic alliances are taking place between firms in several industries including yours. We believe that a greater understanding of the management and coordination processes in partnerships will be very useful for improving their performance. We need your help in understanding how best to manage these relations. What you tell us is very important and vital to our understanding of the sort of coordination processes that are best suited for managing inter-firm alliances.

Among other things, we seek a greater understanding of the factors that promote mutual trust and cooperation between partners. Your input is very important to help us better understand these and similar issues and we are seeking your participation in this study.

Your past and present experience with partnerships will give us very valuable insight into the process. We assure you that all information gathered will be treated with utmost confidentiality.

In the next few days I will call your office to arrange a convenient time to talk to you or any person who is directly involved with your strategic alliances. I look forward to speaking with you and visiting your firm. Thank you.

Sincerely,

Henry Adobor

Project Coordinator

Tel: 514-848-2738

Fax: 514 848-4593

Email: adobor@alcor.concordia.ca

Appendix 5

A REMINDER ON INTERFIRM COOPERATION SURVEY

Dear Sir/Madam:

Re: Interfirm Collaboration Survey: An Appeal

This letter is another follow up on our earlier request to you and a reminder about our survey on partnerships. A few weeks ago, we mailed you a reminder note on our request for your assistance. This second appeal and reminder goes to only a select number of firms. Our study seeks to compare partner perceptions of what promotes cooperation and trust in the relationship. To enable us proceed with analyzing our data, we need your assistance to complete the survey. Receiving this special appeal means we already have some information from your partner. Our original letter sent out last December mentioned a partner.

We know that it takes your valuable time and effort to complete this. We very much appreciate the help you are giving us. We do hope, most fervently, that you will find some time in the next few days or so and complete the survey. A fresh survey is enclosed in case you need a new one. If for some reason, you did not receive our earlier mailings, please feel free to ask any questions. The study will not report or disclose your participation to anyone. We guarantee the utmost confidentiality. If you need any information, please feel free to use the contact below. You may already have sent your survey. If so, please ignore this letter and thank you.

We count on your cooperation on this matter. Thank you very much for your assistance.

Sincerely,

Henry Adobor

Project Coordinator.
Email: adobor@alcor.concordia.ca
Phone: 514-848-2738
Fax: 514-848-4593

Appendix 6

SEMI-STRUCTURED QUESTIONS FOR INTERVIEW

How extensive is your organization's experience with alliances?

Would you say alliances have positively contributed positively to your firm's performance?

How do you share risks in the alliance? How do you protect yourself?

Do you directly compete with your partner in the same product or geographic market? How does this affect your relationship ?

Do you think friendship or social relations between key people in both firms are important for alliance success? Are they at least necessary?

What type of expectations do you have about your partners? Is it important to trust them from day one?

Do you find yourself judging your partner by such initial expectations?

What are some of the most important ingredients for a smooth relationship?

How important is trust in the relationship?

What sort of things promote trust? What breaks trust and honesty?

How much time do you put into this type of relationship? Do you think it can become distracting?

Would you say alliances will remain an important part of your industry?