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# COOPERATION AND OPPORTUNISM IN VENTURE CAPITAL FINANCED COMPANIES

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# COOPERATION AND OPPORTUNISM IN VENTURE CAPITAL FINANCED COMPANIES

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## ABSTRACT AND KEYWORDS

**Abstract**: This study investigates cooperation and opportunism in interdependent relationships and, in particular, the influence of differing managerial time horizons on the collaborative behavior of interdependent parties. Interdependent relationships are a common aspect of business organizations and the attainment of business objectives frequently requires the combined efforts of people in different roles both within and external to the organization. The context for this study is the relationship between venture capital firms and the management of their portfolio companies. This context was selected two reasons. Firstly, venture capital provides money and expertise to help establish new ventures that are critical to the growth and development of the economy. Secondly, the success rate of venture capital investments is equivocal at best. Using survey data collected from CEOs of venture capital financed companies, I find a strong association between perceived alignment and differences in managerial time horizons and cooperative and opportunistic behavior. I also find evidence that perception of negative interdependence mediates the relationship between perceived differences in managerial time horizons and opportunistic behavior.

**Keywords:** Venture Capital, Entrepreneurship, Time Horizons, Cooperation, Opportunism

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# CHAPTER ONE

## Introduction

This research provides insight into the working relationship between venture capitalists and the management of their portfolio companies. This context was selected for two reasons. Firstly, venture capital provides money and expertise to help establish new ventures that are critical to the growth and development of the economy. Secondly, the success rate of venture capital investments is equivocal at best. In most portfolios, there are a few spectacular successes, a similar number of dismal failures, and a large middle ground of moderate performers (Schilit, 1994, Jaques, Bygrave, & Lee, 2001). While I do not expect to explain all the reasons for success and failure in the venture capital area, I do begin a stream of research that examines the interpersonal interactions and behaviors that comprise the working relationship. Venture capital firms provide more than capital. They also provide various forms of expertise, valuable contacts, reputation in financial markets, and the experience from previous investments. It is reasonable to expect that the effective transfer of this knowledge requires willing collaboration. The focus of this initial research, therefore, is on cooperation between venture capitalists and the management of their portfolio companies, and on investigating a particular distinction between them that may promote or discourage their collaborative efforts.

The particular distinction referred to above is managerial time horizon. This has been defined by Mannix and Loewenstein (1993) as the weight that managers place on costs and benefits that are remote in time. Their emphasis, which I will

follow, is on the distinction between the short-term and long-term. While not always the case, there is often a trade-off where management's focus on more immediate results is at the expense of downstream performance and vice versa. I combine this perspective with Jaques's (1990) insight that the proximity or remoteness of the consequences of managerial decisions is typically associated with different roles. Executive level decisions are typically of a longer term consequence to the organization than decisions made at lower levels. There are also differences in managerial time horizon between industries. For example, firms that require large investments in capital or R&D prior to generating commercial revenue, such as petroleum and pharmaceuticals, are likely to operate with a more remote horizon than firms operating in opportunistic or consumer driven markets such as personal electronics. I posit that there are structurally influenced differences in managerial time horizon between venture capital firms and their portfolio companies. The anticipated time horizon difference is driven by the venture capital firm's exit strategy. Venture capital firms need to liquidate their investments in order to return funds to their limited partners, placing a strong incentive for the timing of exit to influence decision making. Conversely, managers of the portfolio companies may have a longer term interest in the development of the company and so look beyond the venture capital firm's exit when making important decisions.

This research is a beginning. The collection of field data is particularly challenging in this arena. Respondents are CEO entrepreneurs with heavy demands on their time. The companies are small and highly dispersed. Secondary data is scarce,

incomplete and often inaccurate. The topic is a sensitive one and requires forthright responses that are not restricted by confidentiality concerns or social desirability bias. Nevertheless, despite following a path less trodden, this research moves beyond exploration to address important questions while field testing instruments and methods for subsequent projects and developing a finer-grained understanding of the unique attributes of the research setting.

This research is also a response to the need to contextualize organizational research (Rousseau & Fried, 2001). The causal dynamics of organizational phenomena can be substantially altered by the work setting. The extent to which empirical finding can be generalized requires an in-depth understanding of the particular factors that distinguish one setting from another. I have endeavored to describe and control for the idiosyncrasies of the venture capital environment in order to provide a reliable basis for further development of this research stream.

**The Interaction of Interdependence and Temporal Perspectives**

In today's complex and fast-paced business environment, the effective combination of resources, skills and efforts is critical to success. Few individuals and organizations are in the position where their goals and objectives can be independently achieved. Interdependence, or the degree to which the achievement of one parties' goals and objectives are reliant on others, is commonplace (Wageman, 1995, Wageman, 2001). When managers design organizations, assemble teams, or structure strategic alliances, one of their principal objectives is to create environments which

foster cooperation amongst the interdependent parties in order to achieve the organizations' aims. It is important, therefore, to understand the factors that promote cooperation amongst interdependent parties. It is also important to understand the factors that discourage cooperation amongst those who need to work effectively together.

Another consequence of the speed and complexity of business is the importance of time. Most business decisions have an associated time frame that defines and constrains organizational action. The more immediate the desired outcomes, the more limited and concentrated are the actions required to achieve them. Conversely, longer term outcomes offer greater scope for allocation of resources, consideration of options, and management of the effort. When people are working together, it is inevitable that there will be differences in the relative importance placed on proximal versus more remote objectives. For example, public financial markets have been characterized as having a short term mentality, thereby potentially discouraging the longer term investments of public companies. Within organizations there are trade-offs. Just as professional athletes have to balance the preparation for the next competition with the longer term development of their skills and physiology, so too do organizations need to balance the achievement of short term results with the development of sustainable positions and capabilities. One organizational solution is to separate, through function or hierarchy, roles that are principally focused on long term outcomes from those that are more concerned with what is accomplished on a

day-to-day basis. But what happens when people who need to work closely together to accomplish their goals have different temporal priorities?

The convergence of financial capital and business is one example of potentially conflicting temporal priorities. The timing of returns on invested capital is influenced by the expectation of the fund providers and the investment instruments selected. The timing of returns for the business applying these funds may be influenced by many factors, including the company's stage of development, the industry in which they compete, their market and competitive environment and the particular opportunities they choose to pursue. Given the information asymmetry between investors and managers it would not be surprising to find that the timing of returns expected by investors does not always align with those expected by management. Underlying these differences is the priority attached to alternative areas for investment. For example, market development activities may have a more immediate impact on revenues and profits than investment in new production technologies, even though the latter may provide greater return in the long run. This is the type of situation to which this research is applicable. Financial investors and business managers are clearly interdependent. Neither can achieve their objectives without the other. However, each brings different perspectives to the relationship, making the interactions less predictable but more interesting, despite the considerable importance of the outcomes they are trying to achieve.

**Self Serving Behavior in a Cooperative Context**

Much research focuses on self-serving behavior in cooperative contexts. In a situation that ostensibly requires that each party work for mutual benefit, why does one party choose to act selfishly and to the detriment of the other? I argue that time horizon is an important factor and differences in time horizon are a precursor to self-serving behavior. There are various situations where differing time horizons may discourage cooperation such as in joint ventures, union-management negotiations, or cross-functional teams. I have focused on the relationship between venture capital firms and the management of their portfolio companies. Doing so contributes to our general understanding of the impediments to cooperation and does so in particular within a context that has, until recently (e.g., DeClerq & Sapienza, 2006; Parhankangas & Landstrom 2006; Sapienza, 1992), been principally researched from a financial and economic perspective and that may have been limited by this perspective (Ferrara, Pfeffer, & Sutton, 2005).

More specifically, I examine cooperation and opportunism in interdependent working relationships and focus on the impact of differences in the managerial time horizons of the parties involved. The relationship between venture capital firms and their portfolio companies is an appropriate setting to develop and test theory, as the relationships among them are interdependent and there are likely to be examples of both alignment and difference in managerial time horizon between the parties involved. Beyond the specific research setting, interdependent working relationships are a common aspect of business organizations. Planning and execution of business

activity generally requires the combined efforts of people in different roles both within and external to the organization. Scholars have debated whether success results from cooperation amongst its members or from the interplay of conflicting relationships (Pondy, 1967, 1992). Some have characterized organizations as constraining contexts in which individual and managerial opportunism is mitigated in favor of cooperative behavior (e.g., Williamson, 1979). Organizations consist of multiple pairs of opposing tendencies and that dichotomous tension is beneficial to an organization's success (Weick, 1979). I take the position that organizations provide a context within which both cooperation and opportunism are enacted and that understanding the antecedent conditions that promote one or the other is important. Managerial decision-making usually includes consideration of the timing of the costs and benefits associated with decision implementation; different temporal perspectives amongst decision makers are likely to complicate the decision process. Time is an important but understudied aspect of organizational phenomena (Ancona, Okhuysen, & Perlow, 2001), and the extent to which differing time horizons influence the behavior of decision makers has only been empirically investigated in the context of strategic alliances (Das, 2004, 2006a. 2006b).

**Cooperation – Joint Action for Mutual Benefit**

I define cooperation as joint action for mutual benefit (Clements & Stephens, 1995; Dugatkin, 1997). This definition does not extend to pro-social behaviors such as organizational citizenship or altruism, but reflects alignment of effort to achieve common goals. In contrast, I treat non-cooperation as opportunism or the 'pursuit of

self-interest with guile' (Williamson, 1979). This definition extends beyond Gandhi's passive non-cooperation (Gandhi, 1983) to include pro-active efforts to advance one's own situation even at the expense of others. This definition provides a more stringent test of the theoretical arguments as it more clearly separates truly self-serving behavior from behavior that is motivated by self-interest but may also be mutually beneficial.

Both cooperation and opportunism have been independently investigated. In their summary of the cooperation literature, Yilmaz and Hunt (2001) identified 39 relational, task, organizational, and personal factors that have been demonstrated to affect cooperative behavior in organizations. A separate stream of research draws on agency theory (Fama & Jensen, 1983) and transaction cost theory (Williamson, 1985) to investigate factors that constrain opportunistic behavior. While cooperation researchers have considered factors that both promote and discourage cooperative behavior, this latter research attributes managers with a predisposition towards opportunism and examines the mitigating effects of factors such as financial incentives and managerial oversight. My research does not make this attribution. Rather, I consider why people may act opportunistically in situations in which mutual benefit is associated with cooperative behavior, regardless of their predisposition to cooperate or compete.

**Contributions to Cooperation Research**

I make several contributions to our understanding of cooperation in organizational settings. Firstly, I investigate the effect of differences in managerial

time horizon on cooperation and opportunism. Managerial time horizon refers to the weight that managers ascribe to costs and benefits that are remote in time, and has been identified in the literature as a factor that influences management's behavior (Mannix & Lowenstein, 1994; Klos, Weber, & Weber, 2005). At an organizational level, managerial time horizon has been shown to be a factor affecting opportunism in the context of strategic alliances (Das, 2004, 2006a, 2006b). At an individual and group level, research has been limited to how managerial time horizon is affected by interfirm mobility and individual versus group decision making (Mannix & Loewenstein, 1994). High interfirm mobility, reflecting shorter organizational tenure, was associated with shorter managerial time horizons and particularly with respect to individual versus group level decisions. Managerial time horizon is an important factor to understand. It is a characteristic that frequently differs within and between organizations, organizational units and individuals. More importantly, it has a significant impact on organizational decision making and may help explain actions that are inconsistent with the predictions of organizational theory. U.S. companies have been criticized for their short term focus as compared to their foreign counterparts. For example, a 1990 survey of members of the Financial Institute Executive rated short-sighted managers and short-sighted investors as the two most important factors responsible for domestic competitiveness problems (Jacobs, 1991). The relative importance placed on proximal versus remote outcomes can have a significant influence on decision making, including the range of decisions made, the decision criteria used and the weight ascribed to each criterion. When interdependent parties come together with different managerial time horizons, I expect the resultant

differences in perspectives and priorities to be a significant source of tension as the priorities of each come into conflict. Secondly, I contrast cooperation and opportunism. This an important extension of cooperation research since researchers have principally compared cooperation with absence of cooperation (Yilmaz & Hunt, 2001), or have used scales to measure the level of cooperation (Luo, 2002). The distinction between opportunism and cooperation represents diametrically opposite means of achieving one's goals within an interdependent relationship and emphasizes the tension between the extremes of mutual interest and self-interest. The choice of win-lose over win-win outcomes has been a focus of study for game theoreticians and it is important to understand those factors that create a prisoner's dilemma situation (Axelrod, 1984) in which the payoff matrix provides an inducement for managers to choose to put their own interests ahead of their organization and colleagues. Does a difference in managerial time horizon provide a sufficient basis to promote selfish action, even to the detriment of their investor? Thirdly, I consider the mediating role of cognitive and affective response to latent conflict. I draw on cooperation theory (Deutsch, 1949a, 1949b, 1973, 2003) to examine the mediating role of perceived positive or negative goal interdependence as a mechanism for the effect of differing managerial time horizons on cooperative and opportunistic behavior. It is important and valuable to understand the psychological mechanisms through which antecedent conditions, which may only create the potential for conflict, result in opportunistic behavior. Fourthly, I provide valuable guidance for practitioners towards avoiding situations resulting in unproductive conflicts between interdependent parties and in reconciling those conflicts if and when they do occur.

**Managerial Time Horizon as a Source of Latent Conflict**

I build upon the argument that incongruence in the requirements of organizational roles is an important antecedent condition for cooperative and opportunistic behavior (Galbraith, 1977) and follow Pondy (1967) in classifying this as latent conflict. The notion of structural arrangements in organizations as a source of both conflict and cooperation is not new. In his early work, consistent with the prevailing view of organizations as cooperative systems, Pondy (1967) viewed conflict in organizations as an aberration. Conflict could be mitigated through proper organizational design, common perceptions and goals could be instilled through effective training, and conflicting parties could be decoupled by reducing interdependencies between them. In re-evaluating his work over 20 years later, Pondy describes organizations not as cooperative, purposeful systems that occasionally experience conflict, but as a "means for internalizing conflicts, for bringing them within a bounded structure" (Pondy, 1992: 259). Despite reevaluation of original precepts, Pondy's conflict model has endured (Pondy, 1992). Summarizing the model, every conflict begins with a period of latency (latent conflict) during which the potential for conflict exists but has not yet developed. This latent conflict may be followed by awareness of conflict at the cognitive and affective level, the manifestation of conflict behavior, and a conflict aftermath that is evidenced in the ongoing relationships between those in conflict and their environment. The progression from latency through awareness and manifestation to aftermath in the model is circular and potentially self- reinforcing. The conflict aftermath compounds the original latent conflict with the repercussions of the manifest conflict. This then

becomes the latent conflict of the next conflict cycle, hence the potential for escalation. Future interactions, as in sequential games, are influenced both by the organizational arrangements and by the resulting behavior.

Latent conflict in organizational arrangements is common, since organizational designs and strategic business decisions are often compromises between the conflicting preferences of the stakeholders involved (Galbraith, 1977; Mintzberg & Lampel, 1999). In a company producing products, manufacturing may be better able to optimize through uniformity and standardization, while sales and marketing may prefer to satisfy customer demand through greater product variation. Researchers have suggested that strict adherence to lean manufacturing principles may be detrimental to success in premium markets where the need to provide product attributes far in excess of functional requirements run counter to the principle of waste elimination (Oliver, Schab, & Holweg, 2007). In the governance arena, agency theory arguments encourage boards of directors to exercise their mandate through mechanisms of accountability and control on the presumption that management seeks to maximize their autonomy and discretion (Fama & Jensen, 1983). In the field of labor management, unions bargain for job security and jurisdictional boundaries while management strives to maintain job and workforce flexibility (Inman &Mehra, 1989). Investors' preference for stable results and increasing returns can run counter to management's interest in long-term initiatives that might unfavorably affect short-term results. In their letter to shareholders, the founders of Google note: "outside pressures too often tempt companies to sacrifice long term opportunities to meet quarterly

market expectations" (Page & Brin, 2004). Latent conflict characterizes each of these situations. In each instance, although there is mutual benefit from cooperation, the perceived incongruence in goals may lead to opportunistic behavior that may benefit one party to the detriment of the other. Goal congruence has also been described in the intra-organizational literature (Tsai & Ghoshal, 1998) and in the venture capital literature (De Clercq & Sapienza, 2006) in relation to of information exchange and firm performance.

Sometimes latent conflict results in manifest conflict, and sometimes it does not. Since there is not a consistent pattern between latent conflict and subsequent behavior, it is important to examine the intermediate mechanisms. Under conditions of latent conflict, sometimes referred to as "unstable peace", the parties involved may negotiate or have imposed upon them a framework (e.g. legal contracts, policies, budgets, planning processes, reward systems) for cooperation that allows them to each achieve acceptable, if not optimal, outcomes. These factors, if present, may mitigate opportunistic behavior. However, they do not completely remove the incentive for either party to circumvent the cooperative framework and improve their outcomes to the detriment of the other party. Since latent conflict may or may not result in opportunistic behavior, I examine the mediating variables of perceptions of positive and negative interdependence that will help explain the relationship.

I suggest that managerial time horizon is a salient characteristic of organizational roles and that differences in time horizons amongst interdependent

parties is a form of latent conflict. A manager's time horizon can significantly affect the decisions that are made, the alternatives that are considered, and the criteria that are used for evaluating alternative course of action. Organizational roles are typically associated with particular sets of decisions. Jaques (1990) asserts that decisions are generally allocated within organizations such that decisions of longer-term consequence are made at the upper levels of the organization, while those of more immediate impact are made at lower levels. Managerial time horizon may thus vary vertically within an organization. For example, a CEO is generally expected to make decisions that affect the performance of the company over a 3-5 year period or longer. An operations manager typically makes decisions that affect performance within an annual budget cycle. A worker on the shop floor makes decisions of immediate consequence. Managerial time horizon can also vary horizontally. Manufacturing may be more concerned with the short term issues regarding production and operations improvement, whereas research and development (R&D) may be focused on technologies of future term benefit to the organization. Decision making often involves considering alternative courses of action and selecting criteria to evaluate the available alternatives. Managerial time horizon plays a significant role by giving greater weight to the decision alternatives and evaluation criteria that are consistent with the predominant managerial time horizon of the decision maker (Jaques, Bygrave, & Lee, 2001). If an individual or business unit's performance is evaluated on the basis of quarterly or annual achievements, it is logical to expect a bias towards courses of action that have a favorable impact within those time frames (Bebchuk & Stole, 1993). However, when pressured by investors to operate within a time horizon

that management believes to be counter to the best interests of the business, I would expect a degree of resistance as the priorities of management and investors come into conflict.

**External Influences on Managerial Time Horizon**

Although distinct managerial time horizons are associated with specific roles in organizations, the extensive literature on the use of incentives suggests that extrinsic motivation can influence managerial time horizon and even override the predominant managerial time horizon of an organizational role. Although a CEO may be expected to focus on decisions with organizational impact within a 3-5 year time-frame, the exigencies of impatient capital markets may cause a more short-term focus. Agency theorists have demonstrated that incentives play a major role in aligning management's decision making with the priorities of shareholders, including the timing of returns (Fama & Jensen, 1983; Jensen & Meckling, 1976). As stated, when two parties in a business relationship have different managerial time horizons, their respective decision sets, the alternatives that they are likely to consider, and the evaluation criteria used to assess them may be significant sources of disagreement and tension. In this research I suggest that differing preferences regarding the timing of decision outcomes is a form of latent conflict.

**Contribution to Venture Capital Research**

I have selected the relationship between venture capital firms and their portfolio companies as the setting for this study. While the setting reflects external

financing, I will discuss how the findings may be applied to internal financing of business investments. The successful combination of capital and innovation is critically important to economic growth and development and, while venture capital firms have played an important role in establishing new ventures, their success rate is very low (Zider, 1998). In addition to its theoretical contributions, this research will provide valuable insights that may help increase the effectiveness of the venture capital/venture relationship. The research findings and suggested directions for future research will also be applicable to the wide range of organizational settings in which interdependent parties have differing managerial time horizons. The specific setting will be the relationship between the lead investors and the management of the ventures in which they invest. This is an appropriate setting for the research, since the venture capital investor and the management of the venture are reliant on each other to achieve their respective goals (i.e. interdependent) and, as previously discussed, there is a strong likelihood of differences in managerial time horizon. Venture capital firms realize their returns through liquidation of their holdings through a public offering or sale of the company in which they invest. I can expect their time horizon to be strongly influenced by the timing of their exit strategy. Management of the company, however, are more likely to continue in their capacities beyond the venture capital stage of financing and so can be expected to have a time horizon that extends beyond the venture capital firm's exit.

In addition to its theoretical contribution to the entrepreneurship literature, this research will contribute to our understanding of venture capital financed companies in

several ways. First, it will contribute to a relationship based view of venture development. Early research focused on the venture capital firm and paid limited attention to the venture itself (Fried & Hisrich, 1988). More recently, researchers have placed greater emphasis on the relationship between the venture capital firm and the portfolio company, and on the portfolio company itself. This research includes examination of the influence of the venture capitalist's social environment on their response to problem situations in their portfolio companies (Parhankangas & Landstrom, 2006) and the influence of relational capital on the relationship between the venture capitalist and portfolio company management (De Clercq & Sapienza, 2006). Research focusing on the portfolio company includes investigation of the importance of human capital within the top management team on company performance (Dimov & Shepherd, 2005; Dimov, Shepherd, & Sutcliffe, 2007). While this research represents a movement towards examination of relational phenomena, the underlying precepts are from an economics perspective and there is opportunity to draw on social psychology theory to unravel the complex relationship between the venture capital investor and the portfolio company management.

Prior to seeking private equity funding, the venture's ownership and management will have established their own set of objectives, assumptions, and expectations with respect to their business. Even though the process of securing funding should reduce informational and goal asymmetries with their source of financing, this may not always be the case. An understanding of differing perspectives has the potential to explain many of the behavioral and performance differences

amongst venture capital financed companies. Financial and economic theory is implicit in much of the research on venture capital firm behavior, particularly with respect to investment decisions and liquidation strategies. The dominant economic view is likely to provide an incomplete explanation of venture capital firm behavior and there is a recognized need to develop complementary perspectives that draw from organizational science (Pfeffer, 1993). Second, much of the research on the venture capitalist/venture capital financed company relationship is descriptive. There is both need and opportunity to develop theory-based research in this area. This research will both advance and test theory. Third, there is a strong business case for this research. Although the venture capital industry has some spectacular successes, most investments do not provide the expected returns and result in significant economic and social costs. The research findings may be used to help venture capitalists and venture capital financed companies develop more successful working relationships and improve their combined and individual business outcomes.

**Opportunity to Generalize Results**

Although I focus on the relationship between venture capitalists and venture capital financed companies, there is potential for application of the research findings to other areas where financial capital and business operations intersect. For example, many diversified firms operate with high levels of decentralization, with the central unit providing financing and shared resources to its subsidiaries. The extent to which performance can be attributed to the management of the relationship between the two parties with different time perspectives, but shared interests, is likely to provide

valuable insights. The contribution of the research to the conflict literature may also provide valuable insights with respect to the influence of differences in temporal perspectives in a wide range of business relationship including joint ventures, strategic alliances, R&D partnerships, and mergers. Future research might also be directed at intra-organizational relationships.

**Following Chapters**

In the following chapters I examine the prior literature that is the basis for the theoretical arguments and hypotheses and the context in which these theories and hypothesis are tested (Chapter 2); the design of the research and the methods that are applied (Chapter 3); a description of the data collection process and the data obtained (Chapter 4); the results from the analysis of the data (Chapter 5); and a discussion of the conclusions and suggestions for future research (Chapter 6).

# CHAPTER TWO

## Review of Prior Literature and Development of Hypotheses

As explained in Chapter 1, this research focuses on the managerial time horizons of interdependent parties and asks whether similarities or differences between these result in cooperative or opportunistic behavior. In undertaking this research I have principally drawn from and built upon three streams of research, both for theoretical arguments and for the selection of the context for empirical testing. The first stream is the extensive research on cooperation to which I contribute by providing a greater level of contextualization than is not evident in much of the prior research (Rousseau & Fried, 2001) and by using opportunism as a comparator (rather than focus on conflict and cooperation, which is the emphasis of much prior research). Secondly, I add to the growing body of research on temporal phenomena by examining the effect of managerial time horizon (Mannix & Loewenestein, 1993) on management behavior. Thirdly, I add to the research on venture capital by contributing to a behavioral perspective of the field that has been predominantly researched and potentially limited by the use of finance or economic theory (Ferraro, Pfeffer, & Sutton, 2005).

## Conflict, Competition, Opportunism and Cooperation

In both the academic and the practitioner literature, the terms conflict, competition, and opportunism are not consistently defined. These terms have each been used interchangeably, often in juxtaposition to cooperation. While the application and contrasting of these terms may have been appropriate for the research

in which they were used, I focus on opportunism as an appropriate comparator to cooperation and now situate this perspective in related research.

**Conflict**

Conflict is a term that applies to various forms of oppositional force manifested at and between individual, group and organizational levels of analysis. Although organizations and groups display conditions, states and behaviors reflecting conflict, the majority of research in organization science has adopted a social psychological frame and has thus focused on individuals, dyads, and groups and relationships between these levels within organizations. Conflict has been used to describe environmental and organizational *context*, cognitive and affective *states*, and individual, group and organizational *behavior*. Rather than view contexts, states and behavior as distinct, prior researchers have increased our understanding of the dynamic relationship between facets of conflict. For example, Pondy (1967) describes a conflict episode as comprised of five stages: latent conflict (conditions), perceived conflict (cognition), felt conflict (affect), manifest conflict (behavior), and conflict aftermath (conditions). While some participants may interpret another participant's statement during a meeting as a difference of opinion (cognitive conflict), other participants may interpret it as a personal slight (affective conflict). Depending on their interpretation, actors will vary their behavior. Actions may range from intellectual debate to emotional outbursts (manifest behavior). The subsequent climate (aftermath) amongst the participants becomes part of the context for future conflict episodes.

Although there has been a shift in researchers' perception of conflict from an aberrant to a normal or even innate characteristic of organizations, the notion that conflict can be a beneficial aspect of organizational behavior is longstanding (Boulding, 1962, Kahn, 1964). However, the early scholars who acknowledged the positive aspects of organizational conflict usually questioned whether the organizational performance benefits were worthwhile in light of the individual and social costs (Boulding, 1962). Although conflict might elevate creativity and competitive intensity, it was judged to arise from "institutionally induced interpersonal differences and individual insecurities and result in damaged relationships that might exacerbate subsequent conflicts" (Boulding, 1962). In order to balance the beneficial and detrimental aspects of conflict, conflict resolution techniques were developed and applied to maintain an organization at a dynamic equilibrium between escalation of conflict and organizational stasis.

Our understanding of the functional and dysfunctional outcomes of conflict has been enhanced by the distinction between conflict related to the substance of task of the parties involved and conflict based on the interpersonal relationships between the task performers (Guetskow & Gyr, 1954; Wall & Nolan, 1986; Pinkley, 1990; Priem & Price, 1991; Jehn, 1995). Jehn (1995) makes the distinction that "relationship conflict exists when there are interpersonal incompatibilities . . . typically including tension, animosity, and annoyance among members . . . task conflict exists when there are disagreements . . . about the content of the tasks being performed, including differences in viewpoints ideas, and opinions" (Jehn, 1995: 258). Process conflict is

defined as "conflict about how task accomplishment should proceed in the work unit, who's responsible for what, and how things should be delegated" (Jehn, 1997: 540). Moderate levels of task conflict have been shown to be positively associated with decision making outcomes and group performance, whereas low and high levels of task conflict have been shown to negatively affect decision making outcomes and group performance (Amason, 1996). Researchers have demonstrated a negative association between relationship conflict, group productivity and member satisfaction (Gladstein, 1984, Wall & Nolan, 1986). Neither level nor nature of conflict is static over time. In a longitudinal study, Jehn & Mannix (2000) found that higher group performance was associated with a particular pattern of conflict. Teams that performed well experienced low but increasing levels of process conflict, low levels of relationship conflict, which increased near the project deadlines, and moderate levels of task conflict at the midpoint of group interaction.

Although researchers have focused on conflict between individuals within groups and organizations, group and organization level phenomena are also important to consider when examining individual level conflict and cooperation, since they provide the contexts and conditions within which individual interaction takes place. Also, the formal role of an individual in a group or organization is likely to influence the objectives, information, and authority that he or she brings to interpersonal interactions around tasks or decisions. For example, Floyd and Lane (2000) show that, within the sub-processes of strategic renewal, top, middle, and operating-level managers differ in their time horizon, information requirements, and core values. As a

result of differing mindsets, managers "notice different cues, create different interpretations of those cues, and develop different expectations for strategic change" (Floyd and Lane, 2000:165).

Cooperation and conflict are often presented in juxtaposition. As with conflict, scholars researching cooperation have focused on contextual conditions, individual motives (cognitive and affective) and relational behaviors (Milton & Westphal, 2005). Although conflict may appear counter to cooperation, it is not its opposite (Tjosvold, 1998). Indeed, cooperative behaviors include exchanging and combining conflicting information as well as openly and constructively discussing problems and conflicts (Argyle, 1991; Tjosvold, 1998; Milton & Westphal, 2005). Cooperation is likely to incorporate conflict episodes (Pondy, 1967) as differences of opinions and perceptions are put forward and addressed. Researchers studying high performance teams find that successful collaboration requires the expression of differences in thoughts and feelings rather than their suppression (Jehn, 1995; Smith, Kenwyn, & Berg, 1987). Although conflict has mostly been studied in the context of cooperative relationships, my contribution to this literature is to focus on specific behaviors that may be manifested in a conflict situation; and, while the prior research on conflict does much to inform my study, the construct itself is not sufficiently distinct from cooperation for my purposes and I turn to competition as a more helpful contrast.

**Competition and Opportunism**

Other researchers have proposed competition, rather than conflict, as the opposite of cooperation. They argue that how people view their goals as related to the

goals of others is a useful way to understand the dynamics and consequences of interaction (Deutsch, 1949, Tjosvold, 1998). When people view their goals as positively interdependent, the conditions for cooperation exist. Conversely, when people view their goals as negatively interdependent, the conditions for competition exist. Whether people view their goals as cooperative or competitive substantially affects their expectations, interactions, and outcomes (Wong, Tjoslvold, and Yu, 2005). People with cooperative goals operate on the assumption that others' goal attainment assists the attainment of their own goals. Therefore, they engage in helping, sharing and encouraging behaviors. People with competitive goals operate on the assumption that others' goal attainment is at the expense of their own goals, and they engage in independent, deceptive, and even obstructive behaviors.

The term competition is generally used to describe a struggle for scarce resources. Competitive behavior can take many forms. Opportunism is one of many manifested behaviors of competition. Transaction cost economists (e.g., Williamson, 1979) and agency theorists (e.g., Fama & Jensen, 1983) present a perspective in which people are essentially construed to be greedy and self-interested. They describe organizations as constraining contexts in which opportunism is mitigated in favor of cooperative behavior, and explain the existence of organizations and organizational structures in terms of their ability to prevent and reduce the costs associated with individual and managerial opportunism. Transaction-cost theorists define opportunism as "self-interest seeking with guile" (Williamson, 1979). Rather than coordinate and modify their actions to accommodate the interests of others, people may choose to

neglect the interests of others and selfishly pursue their own interests. In the event that others may recognize this course of action as potentially detrimental to their own interests, the pursuit of selfish interests may be conducted covertly and deceptively (Williamson, 1991; Wathne & Heide, 2000). Organizations, as viewed through the lens of transaction cost economics, are mechanisms to internalize transactions that are prone to opportunism. By internalizing the transactions, organizations have a greater ability to control the associated transaction costs than they would have if the transactions were to occur on a market basis. In agency theory, independent governance oversight and financial incentives are proposed to be the primary mechanisms to deter managerial opportunism (Fama & Jensen, 1983).

With the majority of the academic literature focused on factors that promote cooperation or discourage opportunism, one might infer a prevailing assumption that people are naturally disposed to selfish, non-cooperative behaviors and/or that the organizations in which they work are not inherently conducive to cooperation. While a somewhat negative portrayal of people and organizations, this perspective does reflect theoretical foundations established by respected organizational and economic theorists and supported by a large body of empirical research. There is a danger that management practices based on theories built on this assumption can be self fulfilling (Ferrara, Pfeffer, & Sutton, 2005). If executives believe that people act with self interest and guile and establish systems to ensure that such behavior benefits rather than harms the organization, employees will come to use these behaviors to their personal advantage even if they behave differently in other settings. In this research, I

make no such attribution but rather focus on the contextual conditions that may result in managerial opportunism irrespective of individual predisposition.

Debate about the cooperative nature of organizations is substantive and ongoing. Early organizational scholars, including Barnard (1938), commented extensively on the role of cooperation in organizations. Barnard viewed organizations as cooperative systems. He emphasized the importance of communications and suggested that employees respond positively to directives when they perceive them to be consistent with not only the organization's objectives, but also their personal goals. March and Simon (1958), drawing on the emergence of the computer as a metaphor for human systems, treated the organization as an information processing, decision making machine, in which performance resulted from the harmonious cooperation of the various parts. In their conceptualization of organizations, conflict was represented as a breakdown in the standard operating procedures. In contrast to being viewed as abnormal and a sign of organizational dysfunction, conflict can also be seen as a natural and potentially beneficial organizational dynamic. This evolved perspective of both academics and managers with regard to intra-organizational conflict and cooperation is well described in Pondy's (1992) reflections on his earlier conceptualizations of conflict (Pondy 1967). Strongly influenced by the then prevailing view of organizations as cooperative systems (March & Simon, 1958), Pondy originally considered conflict as "an aberration . . . in the otherwise smooth flow of a stable and cooperative set of relationships that made up an organization" (Pondy, 1992: 258). His view of conflict as an episodic and temporary source of

disequilibrium in an otherwise cooperative set of relationships was widely accepted. Academic research and management prescriptions were subsequently directed at methods for managing conflict and, thereby, restoring organizational harmony.

Pondy's (1992) reassessment of conflict reflected Karl Weick's (1979) observation that organizations provide a forum for conflict between multiple pairs of opposing tendencies. The absence of conflict and the resultant dominance of one or the other extreme would reduce the "diversity of behavioral repertoires available to the organization" (Pondy, 1992: 260) resulting in reduced capability for adaptation in the face of change. Taking a somewhat extreme view, Pondy proposed "organizations as a means of internalizing conflicts" and "cooperation as an occasional outcropping . . . of the strategic pursuit of conflict" (Pondy 1992: 259). In other words, latent conflict can be viewed as an innate characteristic of organizations.

Opportunism has been shown to be prevalent in partnerships between organizations, such as those between venture capital firms and the venture capital financed companies where there is a lack of formal hierarchy to monitor and enforce compliance to obligations (Parkhe, 1993). Wong, Tjosvold and Yu (2004) note that the viability of partnerships is threatened by the belief that the partner is opportunistic and untrustworthy (see also Friman, Garling, Millett, Mattsson, & Johnston, 2002; Zaheer, McEvily, & Perrone, 1998). Other theorists have argued that even the suspicion of opportunism is detrimental to cooperation (Ghoshal & Moran, 1996; Johanson & Mattsson, 1987).

Identifying the conditions under which opportunism occurs or can be mitigated is considered to be an important priority for management research (Chen, Peng, & Saparito, 2002; Maitland, Bryson, & Van De Ven, 1985). In their investigation of customer-supplier relationships in China, Wong et al (2004) have demonstrated that a shared vision between partners can help partners develop cooperative goals that lead to low levels of opportunism. Other researchers have shown that investment in developing partnership specific assets may increase vulnerability to trading hazards (Buvik & Andersen, 2002; Buvik & Gronhaug, 2000; Buvik & John, 2000). Stump & Heide, (1996) found that opportunism may be controlled through partner selection, monitoring, and other mechanisms. Mutually beneficial relationships, coordination of strategies, effective exchange, and integrative conflict management between the partners have been found to reduce the threats of exploitation (Buvik, & John, 2000; Dahlstrom & Nygaard, 1999; Kale, Singh, & Perlmutter, 2000; Parkhe, 1993). Milton and Westphal (2005) argued that individuals cooperate with others who confirm their identities via interpersonal congruence and showed that identity confirmation networks form and are positively associated with cooperation in workgroups, including highly interdependent, high reliability emergency response groups where cooperation is imperative (i.e., literally affecting life and death). Understanding the conditions that effect opportunism is an important contribution to management theory and practice.

**Cooperation Theory and Interdependence**

Cooperation theory, as developed by Deutsch (1949a, 1949b, 1973, 1980,

2003) and Deutsch and Kraus (1962), posits that cooperation and competition are based upon the parties' perceptions regarding the interdependence of their goals. Cooperation is the outcome when people perceive their goals to be positively related; movement towards one parties' goals facilitates achievement of the others' goals and vice versa. Competition is the outcome when people perceive their goals as being negatively related; movement towards one's goals interferes with and reduces the likelihood of the achievement of the others' goals (Tjosvold, 1984). In the event people perceive their goals as independent, their respective achievements are thought to be unrelated and movement towards one's goals neither interferes with nor facilitates achievement of the others' goals.

In his original study, Deutsch (1949) placed students in either cooperative or competitive sections. The students in the cooperative section were told that each competing group would receive the same grade based on the performance of the group as a whole. The students in the competitive section were told that they would receive individual grades based on their performance in their group. Results were consistent with cooperation theory. In the competitive section, students interacted less, withheld information from each other, and even attempted to disrupt the activities of other group members. In contrast, students in the cooperative section were proactive in providing assistance, willingly shared information, and generally encouraged the efforts of other group members. In a later review of Deutsch's work, Johnson & Johnson (1999) note that, contrary to expectations, there was no significant difference in learning. Of interest is the focus on the behaviors associated with the two groups.

The behaviors of the competitive group are more closely aligned with the definition of opportunism as the pursuit of self interest with guile.

Interdependence and positive or negative relation between people's goals are central to Deutsch's theory of cooperation (Deutsch, 1949, 1973, 1980, 2003). In the academic literature there are several dimensions to the term interdependence and it is important to distinguish these from the application of the construct in this research.

Interdependence exists when "the outcomes of individuals are affected by each other's actions" (Johnson & Johnson, 1989: 23). There are several dimensions to interdependence. The principal distinction in the literature is between task and goal interdependence. Task interdependence is the degree to which an individual must rely upon the efforts or skills of others to perform their own tasks effectively (Kiggundu, 1981, 1983; Wageman, 1995; Wageman &Baker, 1997: Wageman, 2001). The extent to which information must be exchanged and tasks need to be coordinated is indicative of the level of task interdependence. Goal interdependence refers to the type of goal (individual or group) that guides an individual's performance (Saavedra, Early, & Van Dyne, 1993). An individual goal may encourage task strategies that maximize individual performance, whereas a group goal may encourage the development of cooperative strategies and facilitate group performance (Matsui, Kakuyama, & Onglatco, 1987).

Interdependence has been researched in several forms including reward,

feedback, goal, and task interdependence. Reward interdependence is "the extent to which the rewards that accrue to an individual depend on the performance of coworkers" (Wageman & Baker, 1997). Feedback interdependence distinguishes between individual or group feedback, regarding how a group has performed (Saavedra, Early, & Van Dyne, 1993). Both reward and feedback interdependence are related to the outcomes of individual or group efforts and are mechanisms through which the effects of goal interdependence may be moderated. Interaction effects between the various dimensions of interdependence are an important consideration in job design (Saavedra, Early, & Van Dyne, 1993; van der Vegt, Emans, & van de Vliert, 1999). I would expect mutually reinforcing interdependencies to be more efficacious than interdependencies that, for example, encourage and reward individual efforts in a high task interdependent environment. In an experimental setting, the congruency of task, goal, and feedback interdependence has been shown to be associated with higher levels of group performance (Saavedra, Earley, & Van Dyne, 1993).

People's expectations, interactions and outcomes are critically affected by perception of goal interdependence (Lewicki, McAllister, and Bies, 1998). Those who perceive their goals to be positively interdependent (i.e. cooperation) will expect to work for mutual benefit and be likely to assist each other to achieve their goals. However, those who perceive their goals to be negatively interdependent (i.e. competition) will expect the other party to act to the detriment of their goals and may do likewise. They may even obstruct each other in order to increase their own chance

of achieving their goals. In the case of independent goals, people will expect that others will work towards their own goals with little regard for the goals of others (Johnson, Maruyama, Johnson, Nelson, and Skon, 1981). In general, people who are cooperating with one another maintain a positive attitude towards each other and tend to divide up tasks and encourage each other to complete them so that they can all move towards their goals. When competing with one another, people tend to dislike those who are seen as frustrating their goals and are inclined to do tasks themselves, possibly undercutting each other's efforts (Tjsovold, 1984). When their goals are independent, people have few incentives to assist each other, tend to refrain from interaction and tend to become indifferent to the interests of others. While not as extensively researched as goal interdependence, goal independence has been found to have similar, although weaker, effects on interaction as negative goal interdependence (Deutsch, 1973; Johnson et al., 1981). The underlying reasons, however, may differ. For example, frequency of interaction for both goal independence and negative goal interdependence may be less than that for positive goal interdependence. In the case of goal independence we might infer that interaction is unnecessary whereas, in the case of negative goal interdependence, interaction may be undesirable.

Having examined the various forms and consequences of interdependence, I now turn to the antecedents of goal interdependence and, in particular, the effect differences in managerial time horizon.

**Managerial Time Horizon**

The interaction of differing managerial time horizons is a central aspect of my

research and represents an important addition to the research that incorporates temporal perspectives. Time horizon has been defined as "a marker placed in time at some point in the future where an artificial separation is made between two different periods of time, one which ends and one which begins at the marker" (Kirton, Okhuysen, & Waller, 2004). Simply, it is a defined time period beginning in the present and ending at some point in the future. In a business context, it generally refers to the future date when certain processes will be evaluated or assumed to end. Time horizon is a temporal boundary for planning, decision making, and implementation. It is a fairly ubiquitous phenomenon. Seldom are decisions made, investments undertaken, or plans formulated without specific consideration of the time frame within which the consequences of our action will be realized. Financial economics, marketing and consumer behavior, strategic planning and negotiating are among the areas in which time horizon has been investigated. The research on time horizons can be separated into that which focuses on investment and that which focuses on management. The investment literature examines those contexts in which variation in time horizon is associated with differing levels of perceived risk, uncertainty and ambiguity. For example, in financial economics there has been a longstanding theoretical challenge to the conventional wisdom that investors with a long term time horizon should invest more heavily in risky assets, namely stocks, than investors with a short time horizon (Merton, 1969, Samuelson, 1969). Marketing researchers have examined variations in consumer purchasing behavior when buying for future versus current consumption. Inability to accurately predict future preferences results in consumers purchasing a wider variety of products when

shopping for future versus immediate consumption (Simonson, 1990). In the study of negotiations, Okhuysen, Galinsky, & Uptigrove (2003) showed that, since greater risk is associated with present versus future burdens, there is greater efficiency in negotiating agreements with long-term outcomes than those with short-term outcomes. Within research on management, time horizon represents a framework for business planning and action. For example, Jaques, Bygrave, and Lee (2001) report that larger companies tend to have longer term formal plans than smaller companies. They also note that planning time horizons become shorter the lower the managerial level in the organization. The focus of the proposed research is on the managerial category and the application of time horizon as a framework for business planning and action.

Much of the research related to managerial time horizons is focused on the debate regarding economic "short-termism" and, in particular, on the contention that U.S. managers are either unwilling or unable to make investments that are necessary for the future, but that require sacrifice of short-term profits (Laverty, 1996). Mannix and Loewenstein (1994) define a manager's time horizon as "the weight that a manager gives to costs and benefits that are remote in time. Several reasons have been suggested for the widely held belief that U.S. managers have short-term horizons, including the high cost of capital that causes managers to adopt a short-term perspective (Dertouzos, 1989); the focus of shareholders on short-term stock returns discouraging managers from making investments with delayed payoffs (Shleifer and Vishny, 1990); capital budgeting techniques taught at business schools that tend to undervalue intangible assets with longer term payoffs (Myers, 1984); and high

mobility rates that uncouple managers' personal gains with the long-term performance of the company and reduce cohesiveness and identification with the firm (Mannix and Loewenstein, 1994). Comparisons have been made between the time horizons of U.S. and Japanese managers (Beladona, Inkpen, & Phatak, 1998).

Central to the debate on economic short-termism is the concept of intertemporal choice, which is a characteristic of decisions "in which the timing of costs and benefits are spread out over time" (Loewenstein & Thaler, 1989). There is a diverse and extensive literature on intertemporal choice as a problem for individuals and societies. Early philosophers, including John Stuart Mill and David Hume, argued that people's tendency to undervalue future outcomes justified societal restraint of individual action. Economists have applied discounted utility (Fisher, 1930) and prospect theory (Kahneman & Tversky, 1979) to model decision processes involving intertemporal choices. Psychology researchers have examined intertemporal choice in the context of education, consumer behavior, and substance abuse (Loewenstein, 1996).

In the context of management decisions, Laverty (1989) defines an intertemporal choice problem, as a decision in which "the course of action that is best in the short term is not the same course of action that is best over the long run" (Laverty, 1989: p. 828). A representative problem is the choice between a relatively small investment in product technology that will improve short-term profits and the alternative of a substantial up-front investment that will result in significant product

innovation with higher downstream profits and overall net return. Such problems are common in the practice of management and particularly challenging for new ventures, since smaller companies are usually operating with a smaller portfolio of risk balancing investments than large corporations.

Managerial time horizons are highly relevant to the investigation of intertemporal choice problems, since the degree of alignment between a manager's time horizon and the timing of the costs and benefits associated with a decision choice is likely to have a significant influence on the manager's disposition to that choice. Examining managerial time horizons in the context of the venture capital/venture relationship has the advantage that the antecedent conditions held to encourage short-termism (i.e., high cost of capital, business school trained employees and high mobility) are strongly characteristic of venture capital firms. Meanwhile the development of a new venture often requires investments with delayed returns, demanding managers of new ventures take a long view.

Before describing my theoretical model and the hypotheses that will be tested, in the following section I describe the relevant characteristics of the venture capital industry. The purpose of this description is to validate my selected setting for the empirical testing and to provide a foundation for discussion of the findings and conclusions. In this I follow the guidance of Rousseau and Fried (2001) who, amongst others, have called for greater contextualization of organizational research.

**Venture Capital**

As previously stated, I have selected the venture capital industry as the context for this study for two reasons. Firstly, venture capital provides money and expertise to help establish new ventures that are critical to the growth and development of the economy. Secondly, the success rate of venture capital investments is equivocal at best. Most of the prior research has been undertaken from a finance or economics perspective and is descriptive in nature. Given the importance of this industry to the development of the economy through the nurturing of new businesses, I feel it is valuable to contribute a theoretically based understanding of the interaction between venture capital firms and their portfolio companies.

The venture capital industry is a subset of the private equity industry. Private equity refers to a group of investment funds that include venture capital, buyout funds, mezzanine debt funds, and special situation funds. My focus is on venture capital since, in contrast to other private equity investments (other than mezzanine debt), the existing management team usually remains in place beyond the venture capital firm's exit. In buyout and special situations, the private equity firm will often make significant changes to the management team and it is less likely that each will operate to different agendas.

Since 1980, there has been increasing academic interest and research directed at venture capital firms and their role in the economy (Fried & Hisrich, 1988). Venture capital funds are typically directed at the particularly challenging stage of an organization's development during which it seeks to commercialize its innovation (i.e.

product, market, process) and build the infrastructure required to grow the business. Venture capital, therefore, fills the void between innovation development and organizations as going concerns. The former is principally funded by corporations, governments or from the venture founder's own resources. The latter can draw on traditional equity and asset-based financing. The task of the venture capital industry is to attract investors' funds, identify high quality ideas, assist in commercializing those ideas, and liquidate their investments at a stage when enterprises are credible to corporations and/or the public equity markets (Gorman & Sahlman, 1989; Zider, 1998). The risks inherent from investing in companies at this stage of development are reflected in venture capital firm's relatively low success rate. Typically, only one in five investments achieves its financial objectives and the reputations of venture capital firms are often built on one or two good investments (Zider, 1998). The venture capital industry is a high-risk business with the potential for high payoff.

**Differing Perspectives**

From the perspective of the venture, venture capital financing presents a double-edged sword. On the one hand, venture capitalists offer the necessary financing to commercialize a venture's innovation. They also provide valuable advice, contacts and support with respect to planning and structuring the organization for commercial activity (Gorman & Sahlman, 1989). On the other hand, the venture capital firm demands financial payback and often requires that they be involved in managing the ventures that they finance. Sharing control with a venture capital firm in a hitherto private endeavor often results in conflict between the venture and the

venture capitalists. This may be interpersonal or it may be related to business issues. Parties may disagree about organizational goals, activities, and processes (Cable & Shane, 1997). Cognitive conflict and the synthesis that emerges from contesting diverse perspectives can improve organizational performance; however, emotional conflict and its negative effect on individual cognitive functioning and group interaction can prove detrimental to performance (Jehn, 1995; Higashide & Birley, 2002). Process conflict, or disagreement about how a task should be accomplished, has been shown to have a direct negative relationship with group performance when it is experienced early in the project (Jehn, 1997). Entrepreneurs may have difficulty adjusting to their changed status (Bruton, Fried, & Hisrich, 2000). Ideally, the two parties would cooperate to build the venture and engage in constructive content and process conflict along the way. As will be shown in the following chapter, research on the relationship between venture capitalists and their ventures is quite sparse. The focus of my research is, therefore, an important contribution to our understanding of the non-financial reasons for success and failure of venture capital investments.

Venture capitalists generally aim to maximize the liquidation value of their investments at the point in the venture firm's development that traditional financial institutions are prepared to offer financing (Amit, Brander, & Zott, 1998). Even when the venture also benefits financially from the exit of the venture capitalist (particularly if an IPO is the exit strategy), the venture likely has additional longer-term goals related to the continued growth and development of the business beyond the period of interest to the venture capitalist (Cable & Shane, 1997). For example, the venture

capital firm and the venture's management may disagree about investing in activities that the venture capital firm considers to be undervalued by financial markets.

Given my research, I can reasonably infer that venture capitalists and venture capitalist financed companies may differ in their temporal perspectives and, therefore, their respective managerial time horizons. Also, venture capitalists will generally have a shorter-term interest than that of the ventures in which they invest (Zider, 1998). The tendency of young venture capital firms to bring their portfolio companies to the stock market prematurely (i.e. "grandstanding") further supports this view (Gompers, 1996).

**Venture Capital Performance**

Venture capital plays an important role in developing the economy and establishing new businesses. Although venture capital represents only a tiny part of the economy, over 80% of the money invested by venture capital firms goes into the adolescent phase (between start-up and maturity) of a company's life cycle (Zider, 1998). This is the critically important period during which a company develops the infrastructure necessary to commercialize an innovation.

During this time of high and accelerating growth, the companies that will survive and prosper in latter stages may be difficult to distinguish from those companies that will ultimately fail. However, researchers have demonstrated that venture capital backed firms outperform and are more likely to survive than

alternatively financed firms, develop more professional management personnel and policies, and enjoy greater IPO success in down markets (Bygrave, Fast, Khoylian, Vincent, & Yue, 1989). Yet, within a venture capital firm's portfolio, more than half the companies will at best return only the original investment and at worst be total losses. However, most venture capital firms require only 10-20% of their investments to be real winners in achieving their targeted rate of return (Zider, 1998). Consequently, a significant amount of a venture capital firm's time and attention is directed to the companies in the middle ground of its portfolio that are neither assured successes nor probably write-offs, in order to determine how an investment can achieve the intended results or whether it should be or divested.

It is in the middle ground that a clearer understanding of the relationship between venture capital firms and ventures in which they invest will be most valuable. The turnaround of an underperforming company is a challenging undertaking - even more so in an adversarial environment. In such a situation, the default option for the venture capital firm is to take the necessary actions to maximize investment recovery and exit at the earliest opportunity. Such action not only results in an inefficient use of the venture capital firm's resources, but also potentially jeopardizes the future prospects of the venture as a result of reduced attention to its development and lack of investment in resources and capabilities of longer-term benefit. These situations are fertile grounds for friction between the venture capital firm and the venture's management team.

**Funding of Venture Capital Firms**

It is important to note that venture capital firms are accountable to the investors who provide the funds that are managed by the venture capital firm. Research on the relationship between funds providers and venture capital firms is sparse. The focus has been on the financial returns provided by these investments (Guler, 2007; Rosenberg, 2003) and on the governance arrangements between the investors and the venture capital funds (Gifford, 1997). Venture capital firms are principally funded by large institutional investors and represent a relatively insignificant, high risk/return portion of their overall investment portfolios (Brophy & Guthner, 1988, Zider, 1997). The relationship mirrors that between the venture capital firm and their ventures in that the funds provider advances the required financing and the venture capital firm has greater control over its expenditure.

Given the risk profile of venture capital investing, one might expect a high degree of oversight by the funds managers. Yet Robbie, Wright, and Chiplin (1997) found that, while funds providers monitor target returns and reporting requirements, they "typically engage in few monitoring actions" (1997:25). Rather, they place their funds in several venture capital firms to achieve diversification across investment philosophy, geography, management, industry, investment life cycle, and type of security (Brophy & Guthner, 1988). Contrary to their reputation as high risk/high return investments, venture capital firms, on average, provide returns comparable to small and medium NYSE stocks (Chiampou & Kallett, 1989; Bygrave, Fast, Khoylian, Vincent, and Yue, 1989; Bowden, 1994). Mature venture capital firms are

only slightly riskier than the S&P 500, possibly reflecting a high default rate in their early years (Chiampou & Kallett, 1989). The investment approach employed by institutional investors is supported by the superior returns of portfolios of venture capital firms when compared with growth-oriented mutual funds and the S&P 500 index (Brophy & Guthner, 1988). However, returns are highly variable and Chiampou and Kallett (1989) found that investment in 9-10 mature venture capital firms is needed to achieve the average return of mature venture capital firms. Despite the proliferation of venture capital firms over the past 20 years and greater fragmentation of the industry, little if any research has examined the motivation for and process of selecting venture capital firms by their investors, governance arrangements and their effectiveness, and performance differences and their antecedents. This is an important omission in light of the high failure rates of venture capital firms and the seeming reliance on portfolio management rather than effective governance.

Venture capital firms owe their existence, in part, to the unwillingness of conventional financial sources to risk their funds in companies that are asset-poor, are applying unproven technologies, and have limited performance history. Consistent with this perspective, research has concluded that venture capital firms exist to reduce the costs of information asymmetries between entrepreneurial companies and financial markets (Amit, Brander, & Zott, 1998). Venture capital firms' ability to select and monitor entrepreneurial projects serves to reduce the risks of adverse selection and moral hazard that arise from an imbalance of information between the venture and its potential investors and the external investors' inability to verify management's

actions. In effect, venture capital firms act as financial intermediaries with informational and proximity advantage over the funds providers and other investors.

The accountability of venture capital firms to their funding sources may have an influence over their interaction with their portfolio companies. Depending on the stage in the life cycle of the venture capital fund, the venture capital firm may be focused on different activities (i.e. securing deals, managing the portfolio, dealing with problem companies, liquidating their position). The overall performance of the companies in the portfolio may also influence activity. A well performing company in a poorly performing portfolio is likely to receive less attention and concomitant sources of conflict than the lower performing companies. While I would have liked to take these factors into consideration, the venture capital firms were understandably less than forthcoming about the performance of their portfolio companies.

**Venture Capital Firm Behavior**

Most of the research on the venture capital industry has been descriptive. A significant focus has been on what venture capitalists actually do and how they differ from one another. Research findings suggest that venture capitalists typically divide their time between looking for new ventures, monitoring current investments, assisting in raising new funds, providing strategic advice, and assisting with management recruiting (Gorman & Sahlman, 1989). Key differences between venture capital firms are venture stage of interest, amount of assistance provided to the venture, venture capital firm size and geographic location (Elango, Fried, Hisrich, & Polonchek, 1995;

Freear, Sohl, & Wetzel, 1994). Although a venture capital firm's participation in management functions has been shown to positively effect venture and IPO performance (Wang, Wang, & Lu, 2002), the differences amongst both venture capital firms and ventures suggest that this effect may be contingent on other factors that require further research. Not surprisingly, venture capital firms have been shown to increase in value through successive investments and exits prior to their target ventures going public (Lam, 1991). The state of public financial markets also has a significant influence on the efforts of venture capital firms. For example, Gulati and Higgins (2003) have shown that in a cold market a ventures relationship with a prominent venture capital firms is beneficial to IPO success, whereas a hot market favors relationships with prominent investment banks.

Although most ventures attract a primary venture capital firm, other venture capital firms are often co-investors with less active roles. Venture capital firms tend to restrict their investments to a small geographic area to facilitate monitoring and advisory activities. Since many industries are regionally concentrated, firms in a particular region are likely to have a similar industry focus. Collaboration amongst venture capital firms has been shown to contribute to regional economic growth and development (Castilla, 2003).

The literature distinguishes independent from corporate venture capital, the former as the venture capital firm and the latter as a new venture investment vehicle for established corporations seeking to engage new markets and technologies (Roberts

& Berry, 1995). Researchers have compared the two forms (Chesbrough, 2000; Gompers & Lerner, 1998; Hellmann, 2002; Maula & Murray, 2001), as well as examined the specific objectives, structure and performance of corporate venture capital (Block & MacMillam, 1993, Block & Ornati, 1987; Chesbrough, 2002; Henderson & Lelux, 2002, Maula & Murray, 2001, Siegel, Siegel, & MacMillan, 1988, Winters & Murfin, 1988). The research finds that, historically, the performance (both positive and negative) of corporate venture capital investments has been comparable to that of independent venture capital investments and is likely to be higher when investments are in related industries. Compared to independent venture capitalists, corporate venture capitalists are more likely to invest in start-ups, particularly when they are in the same industry (Gompers, 2002), and are less averse to broad geographic scope (Gupta & Sapienza, 1992). Once again, the research questions focus on the types of investments and financial returns. The orientation of the research is primarily descriptive. Reasons for choices and non-financial factors that affect returns remain largely unexplored. The sample frame for my study does not include corporate venture capital, as data is not as readily available as for independent venture capital firms, most of whom are members of the Canadian Venture Capital Association (CVCA).

**Summary of Venture Capital Research**

Venture capitalists and venture capital financed companies represent a high-risk business with the potential for high return. Very successful investments are rare; the majority falls in the middle ground of adequate but not spectacular returns.

Venture capital firms are relatively idiosyncratic. Existing research that has been conducted predominantly from a financial and economics perspective is highly descriptive and sheds little light on reasons for their success and failure or the process by which venture capital firms provide their expertise and guidance.

A strength and a limitation of past research is that financial economic theory is implicit and is used as an organizing principle in much of the research on venture capital firm behavior (Fried & Hisrich, 1988), particularly with respect to investment decisions and liquidation strategies. While such research has been informative, the rational economic paradigm provides an incomplete explanation of venture capital firm behavior. Indeed, the assumptions inherent in much of financial economic theory with respect to social norms and expectations about behavior have resulted in management practices that create the behavior they predict (Ferraro, Pfeffer, & Sutton, 2005). It is necessary but challenging, therefore, to disentangle psychologically motivated behaviors from the behaviors that are institutionally imposed. For example, there is evidence that venture capitalists are not completely rational decision-makers (Sahlman & Stevenson, 1985). Moreover, a number of non-economic factors have been shown to predict the economically oriented behavior that past research has focused on. Harrison et al. (1997) have shown that trust is an important criteria in the investment decision; escalation of commitment may underlie the "living dead" phenomenon of ventures that are performing below expectations but are not liquidated (Ruhnka et al., 1992). Both emotional and cognitive conflict is evident in the management stage of the investment process and has been shown to have implications

for the venture capital firm's management actions and liquidation decisions (Higashide & Birley, 2002).

**Contribution to Venture Capital Research**

A general theoretical gap in the literature is the lack of understanding of factors influencing the relationship between venture capital firms and their portfolio companies. In particular, an important and relatively unexplored area is the relationship between the venture capitalist financed company and the venture capitalist, including the conditions that give rise to of cooperation and opportunism.

Cooperation theory (Deutsch, 1949a) suggests that opportunistic behavior is more likely to occur when partners believe their goals are competitive and less likely to do so when they view their goals as cooperative. Opportunism is a manifestation not only of self-interest but also arises from a perception that one's own self-interest is incompatible with that of others'. One potential source of opportunism is the temporal difference in goals of the two parties. The venture capitalists' interests are generally of a short-term nature with the objective of maximizing the value of their investment to liquidate at a stage in the venture's development when traditional financing sources, with more moderate expectations of financial return, are prepared to finance the venture. The entrepreneur, although potentially benefiting financially from the exit of the venture capitalist – particularly if an IPO is the exit strategy – has longer-term goals related to the continued growth and development of the business beyond the period of interest to the venture capitalist. Areas of mutual benefit are likely to

produce cooperation, whereas areas in which goals and priorities differ are likely to produce opportunistic behavior. For example, investments which are of long-term intrinsic value to the venture, but which are unlikely to be recognized and appreciated by incoming investors, are likely to cause disagreement between the venture capitalist and the entrepreneur.

The role of conflict in the relationship between venture capitalists and their portfolio companies has received only limited attention. In the only study that relates venture capitalists-venture conflict to the performance of the venture capital financed company, Higashide & Birley (2002) found that cognitive conflict, particularly with respect to corporate goals, can be beneficial, whereas affective conflict can negatively affect post-investment performance of the venture. Cable & Shane (1997), recognizing the conflict inherent in the venture capital- venture relationship, applied a prisoner's dilemma framework to theorize ways in which long term cooperation between entrepreneurs and venture capitalists can be promoted, despite the short term gains to be realized from self-interested behavior (i.e. opportunistic defection). Measures included communication, staged evaluation and capital payout, and penalties for non-cooperative behavior.

External and institutional factors provide a context for differences in venture capitalist-venture capitalist financed company managerial time horizon. In partnership with a venture capital firm, the venture is engaged both in building competencies for longer-term success, as well as establishing legitimacy in the corporate and financial

community. As Amit et al. (1998) demonstrate, venture capital firms owe their existence to the information asymmetries between financial markets and entrepreneurial ventures. An important task of the venture capital firm, if it is to liquidate its investment, is to reduce the information asymmetry in the markets that will assume the venture capital firm's investment. However, the timing of external expectations may conflict with the internal needs of the venture and create difficult tradeoffs in internal investments or even incentives for decoupling activity, while maintaining the impression of institutional conformity. These differences may be a source of disagreement between the venture capitalist and the venture capitalist financed company. The disagreements themselves may be counterproductive and diminish the relationship in ways that are difficult to repair. The financial market environment in which the venture capital firm operates and in which it will liquidate its investments is, therefore, likely to have a profound effect on its actions. In the event that the actors in the external environment are imperfectly informed of the needs of the venture capitalist financed company, priorities influenced by the external environment may not always serve the best interests of the venture. For example, the capital markets' bullish view of the automotive industry during the late 1990s encouraged firms to acquire automotive-related businesses at multiples that proved to be detrimental to the long-term health and performance of the acquiring companies (Fitzgerald, 2004). With the short timeframe in which venture capitalists prefer to liquidate their investment, there may be situations in which a venture capitalist financed company's acquiescence to the short-term incentives offered by capital

markets are not necessarily beneficial, and may even be harmful, to the successful development of the venture.

Whether the venture capital/venture relationship is fundamentally cooperative with occasional outbreaks of conflict, or inherently prone to conflict with cooperation dependent on a particular coincidence of factors, is an underlying question that this research will explore. One would naturally anticipate the two parties to approach the venture capital/venture relationship with expectations of mutual benefit and a framework of agreements designed to achieve shared goals through cooperative efforts. Fried and Hisrich (1995) describe the venture capitalist as a relationship investor or a "consultant with financial interest" that places a high degree of importance on their ability to work collaboratively with the ownership and management of their investments. The economic view of man suggests, however, that both parties will seek to maximize their benefit within the constraints imposed by their shared agreements and by their respective boundaries of acceptable behavior. Even if both parties enter into the relationship in good faith, situations will arise during the development of the venture that require one or the other to make choices about whether or not to honor the letter or spirit of prior agreements and to behave cooperatively. When contemplating a course of action that one party believes to be in their best interests, but that is unlikely to be agreed to by the other party, they may ignore the other's explicit or assumed preferences and execute their own preference surreptitiously. The maxim that it is easier to obtain forgiveness than permission might well apply in these situations. Such opportunistic action may be passively disguised

through non-disclosure or actively presented through deliberate falsification of information. For example, one venture interviewed during the preparation of this study described their clandestine efforts to continue what they believed to be necessary R&D efforts in spite of the venture capital firm's reluctance to continue to fund such activity. The venture capital firm believed that their interests and priorities were best served by the commercialization of existing technology, whereas the venture's management felt that further technical development was a necessary investment for long-term success. While such actions are anecdotally regarded as commonplace in venture capital – venture relationships, the conditions that give rise to such behavior are not clearly understood.

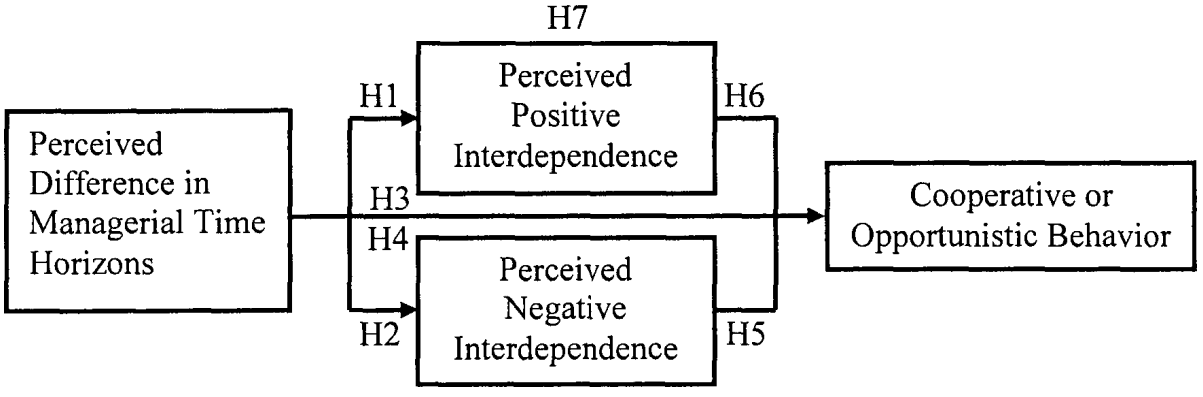
I find that the examination of the venture capital industry and of prior research, confirms its suitability as a context in which theory can be tested. Furthermore, it provides rich opportunity for subsequent research along the lines I have begun and is consistent with the need for more contextualized organizational research. (Rousseau & Fried. 2001).

**Development of Hypotheses**

Based on my review of prior literature on cooperation and managerial time horizon, I find two important and, as yet, unanswered, research questions. First, do differences in managerial time horizons between interdependent parties increase the likelihood of opportunistic behavior and reduce the level of cooperation? Second, is this relationship (if it exists) mediated by perceived goal interdependence? My

theoretical model to address these questions is illustrated in Figure 1 and described thereafter.

**Figure 2.1**
**Theoretical Model**




My independent variable is Perceived Difference in Managerial Time Horizons - the divergence in managerial time horizons of the respective parties. This is an important but under-researched factor that has a pervasive influence on management decision-making and organizational structures. Most business decisions are associated with expectations regarding both the consequences and the time frame in which they will occur. These timing expectations shape both the decisions that are made and the decision making processes that are employed. A person's sense of urgency, or lack of it, shapes the priority amongst decisions that need to be made as well as the choices that are seriously considered. As evidence of the effect of time horizon on collective decision processes, Okhuysen, Galinsky and Uptigrove (2003) have shown that the longer the time horizon of expected outcomes the greater the efficiency of negotiated agreements. If those making a decision have different expectations regarding the timing of the decision implementation and outcome, their criteria for selecting among

alternative decision options are likely to differ. For example, a long-term focus might favor investing in R&D, whereas a short-term focus might lean towards cutting costs or increasing production capacity to meet current demand. Research has shown that organizations are typically structured so that each unit has a specific time horizon associated with their activities and decisions (Jaques, 1990). For example, in a retail company, the executive group will typically focus on the development of the business over the next 3 to 5 years, whereas the managers of the individual stores will be more concerned with day-today operational matters. Organizational functions (i.e., marketing, sales, Manufacturing, R&D) also operate within different and distinctive time horizons. The decisions made, information used, and criteria applied will be appropriate to each situation. When two individuals or groups are jointly involved in decision-making, their respective time horizons will have significant influence on their interactions.

As either or both of the parties experience differences between the managerial time horizon with which they approach important decisions and that used by their partner, and because of the importance of time horizon in shaping decision-making, the associated difficulties in the collaborative decision making process will elicit several perceptions. An important perception, I suggest, is that a difference in managerial time horizons reflects an incompatibility (i.e. negative interdependence) in underlying goals. Conversely, perceptions of common managerial time horizons will facilitate the collaborative decision-making process and fuel a perception of compatibility (i.e. positive interdependence) in goals.

In practice, the distinctions between aligned and divergent time horizons, perceptions of positive and negative goal interdependence and cooperation and opportunism are neither clear cut nor pervasive. For some decisions, a difference in time horizons may not influence the options considered. In some areas the parties may share a common time horizon while differing in other areas. For some goals the parties may be positively interdependent, while in others they may not. Similarly, cooperative and opportunistic behavior will be selectively rather than universally applied. For managerial time horizon and positive or negative interdependence, it is the individual's perception that is more salient than an objective assessment. The behavioral response (i.e. cooperation or opportunism) is based on personal emotive and cognitive interpretations rather than external and objective rationale. For example, perception of a common time horizon may lead parties to infer other similarities and to bias in favor of the other as a result (e.g. an in-group bias). Conversely, the perception of divergent time horizons may cause one party to exclude the other from decision process as a means of avoiding conflict.

The variation in interdependency is most often scaled from low to high. However, Deutsch (1949, 1973, 1980) and Kelley and Thibaut (1978) make the distinction between positive and negative outcome interdependence. When there is positive outcome interdependence individuals believe that goal attainment by other group members facilitates movement towards their own goals. When there is negative outcome interdependence, individuals believe that successful goal attainment by other group members makes it less likely that they will also reach their own goals (van der

Vegt, Emans, & van de Vliert, 1999). Although 'outcome interdependence' and 'goal interdependence' have been used interchangeably, there are important differences that make it important to separate the two terms. Van der Vegt et al. (1999) define outcome interdependence as the manner in which team members believe their personal goals and rewards are related. With this perspective, outcome is an objective term that encompasses several different dimensions. Accordingly, I follow prior literature in treating goal interdependence as a subjective term and so focus on and treat positive and negative goal interdependence as perceptions of interacting individuals. Hence:

H1. In an interdependent relationship, one party's perceived alignment of managerial time horizons is associated with their perception of positive interdependence.

H2. In an interdependent relationship, one party's perceived difference in managerial time horizons is associated with their perception of negative interdependence.

One might argue that these hypotheses are tautological if perceived positive or negative interdependence is an inevitable outcome of the perceived alignment or difference in managerial time horizon alignment. However, either positive or negative interdependence are likely to be based on many other factors in addition to perceptions of managerial time horizon. Perceived interdependence is a judgment or determination based on an individual's interpretation of contextual information. With the reliance on different mental processes – observation, interpretation, and judgment

– the association is not entirely predictable. Also, variance in the association of these variables within the data set assembled for this research supports the non-tautology argument.

I am interested in the effect of individual perceptions on behavior, specifically the effect of perceptions of positive or negative goal interdependence on my dependent variables of cooperative and opportunistic behavior. Transaction-cost theorists define opportunism as "self-interest seeking with guile" (Williamson, 1979). Instead of cooperating (i.e., parties coordinating and modifying their actions to accommodate the interests of others), people may choose to selfishly pursue their own interests. This selfishness may be overt or it may be hidden. In situations where parties may recognize this course of action as potentially detrimental to their own interests, the pursuit of selfish interests may be conducted covertly and deceptively (Williamson, 1991).

Cooperative behavior should be differentiated from pro-social behaviors such as helpfulness, altruism and citizenship. While cooperation can be viewed as joint action for mutual benefit, pro-social behaviors suggest a willingness to help others without expectation of reciprocity equal to the contribution (Bar-Tal, 1976). Similarly, although opportunism is more likely to occur in a competitive context, it is not competition per se. The term competition is typically used to describe the self-interested struggle for scarce resources in which one party's win is another's loss. It is thus a descriptive and not a pejorative term. Opportunism, on the other hand, is

generally viewed as an anti-social behavior and implies sole or primary concern with one's own welfare, even to the detriment of others.

When parties conclude that there is a difference in agendas between parties, I theorize that either will seek methods other than cooperation to ensure that their needs are met. These methods may be overt or covert. The relative power position within the relationship is pertinent in determining the mode of action. By power position, I refer to the relative ability to control or influence the actions of others to promote one's goals (Buckley, 1967). In general, I would expect the party in the lower power position (i.e. management) to select covert means of achieving its goals, whereas the party in the higher power position (i.e. the venture capitalist) is better positioned to take overt action. In the low power position, confrontational approaches are less likely to produce desirable results (Tjosvold, Andrews, & Struthers, 1991). The lack of alternative courses of action increases the likelihood of opportunistic behavior. Hence:

H3. In an interdependent relationship, one party's perceived difference in managerial time horizons will be associated with opportunistic behavior on their part.

H4. In an interdependent relationship, one party's perceived alignment of managerial time horizons will be associated with cooperative behavior on their part.

In the theoretical model, perceptions of goal interdependence are hypothesized

to mediate the effect of differing managerial time horizons of the two parties on their propensity to engage in opportunistic behavior. Cooperation theory (Deutsch, 1967), as extensively described earlier in this chapter, suggests that cooperative and competitive behaviors between interdependent parties are directly related to the whether the parties perceive their goals as being positively or negatively interdependent. I theorize that differing managerial time horizons between interdependent parties are directly related to perceptions of positive and negative goal interdependence.

Recent research provides support for the mediating role of perceived interdependence. In a study examining the effects of shared vision on cooperative and competitive goals and opportunism in customer-supplier relationships in China, Wong et al. (2005) found that these partnerships are not inevitably threatened by opportunism. They theorized that, when partners believe that their goals are competitively but not cooperatively related, they are tempted to pursue their self-interests opportunistically, but that cognitive understandings and values of a shared vision help partners believe their goals are cooperatively related and reduce the motivation for opportunistic behavior. Their analysis suggested that shared vision can help partners develop cooperative goals that lead to low levels of opportunism. Hence:

H5. In an interdependent relationship, one party's perception of negative interdependence will be associated with opportunistic behavior on their part.

H6. In an interdependent relationship, one party's perception of positive interdependence will be associated with cooperative behavior on their part.

The treatment of perceived goal interdependencies as mediating variables, rather than as moderators, reflects their role as "the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest" (Baron & Kenny, 1986: 1173). Perception of positive or negative interdependence is the bridge linking awareness of latency (i.e. relative managerial time horizons) to manifest behavior. When dealing with a socially constructed and subjective reality (Berger, 1963; Berger & Luckmann, 1967) there are no theoretical arguments suggesting a direct relationship between context and behavior. It is the individual's perception and interpretation of the context that informs their decision as to whether and how to act. To do otherwise would be treating behavior as an autonomic response to environmental conditions. For perception of positive or negative interdependence to be a moderating influence there would need to be a clear and direct relationship between an individual's perception of context and their manifest behavior. I test Deutsch's (1949, 1973, 2003) assertion that perceptions of positive or negative goal interdependence provide a causal link between a disparity in managerial time horizons and opportunistic behavior. Hence:

H7. In interdependent relationships, one party's perception of goal interdependence mediates the relationship between their perception of divergence in managerial time horizons and cooperative or opportunistic behavior on their part.

**Control Variables**

The final element in my theoretical model addresses the parties' propensity, incentive and opportunity for opportunistic behavior and is represented in the analysis as control variables. In the interdependent relationship between venture capitalists and venture capital financed companies, the mutual screening and selection process is likely to result in cooperative behavior as the expected norm. Sometimes parties may feel at risk, but choose to get involved in a business relationship, because the payoff is high and they think they can ensure cooperation in the structure of the deal or through its implementation. Also, factors such as interpersonal differences or competing venture interests may result in some degree of competition or interfere with optimal cooperation. Nonetheless, both parties are likely to create expectations of mutual cooperation while entering into the relationship and this will be the expected default behavior.

The early stages of the investment process (i.e. search, screening, and evaluation) enable both parties to select a partner with whom they expect their combined efforts to produce mutual benefit. Nooteboom (1996) suggests that, when considering the factors affecting opportunistic versus cooperative behavior in an inter-firm relationship, it is important to pay attention to the *incentive* that either party has for opportunism, the *prospect* for opportunism, and the *propensity* for opportunism. Incentives relate to the payoff advantages and disadvantages associated with opportunistic behavior. Prospects for opportunism may be created through ineffective monitoring or infrequent communications. Propensity for opportunism suggests

consideration of individual characteristics, reputation and prior behavior. Since both parties will have engaged in careful assessment of the other, as suggested by the search, screening, and evaluation activities in the investment process (Fried & Hisrich, 1988), it is reasonable to assume that major factors relating to propensity for opportunism (i.e. individual characteristics, reputation, and prior behavior) will have been screened out and, therefore, the propensity for opportunism is less likely to be a major factor than the incentive and opportunity for opportunism. These factors relate to the contractual side of the relationship and, as noted by Fried and Hisrich (1988), are focal to the structuring stage of the investment process. Accordingly, when selecting control variables, I have focused on those factors that provided incentive or opportunity for opportunistic behavior.

In order to identify control variables, I carefully considered the prior literature. Particular attention was directed at research using cooperation and/or opportunism as dependent variables, although attention was also directed at research examining the role of time and time frame in the context of group decision-making. Of primary interest were the independent variables with a demonstrated relationship to cooperation or opportunism. From this review, a large number of independent variables were identified as affecting cooperation and opportunism. The use of control variables is uncommon in much of the cooperation literature, as the majority of the research has been conducted in controlled environments rather than organizations; therefore, contextual factors have been eliminated through the setting rather than through statistical analysis. Also, there is a tendency in the literature to test the effect

of multiple independent variables rather than isolate the effect of one of a few variables, and so little attention has been paid to the identification of control variables (e.g., Yilmaz & Hunt, 2001; Alper, Tjosvold, & Law, 1998).

Opportunism has been extensively investigated in the context of joint ventures and customer supplier relationships (Wathne & Heide, 2001; Deeds & Hill, 1999). Although this research is highly relevant to the investigation of the relationship between venture capitalists and venture capital financed companies, the venture capital context differs in two important respects. Firstly, these relationships are generally of a longer duration than the relationships in this study and are usually open-ended. Secondly, both parties realize the gains from the association continuously and concurrently. In contrast, the venture capitalist/venture relationship is generally of a short and defined duration, the realized gains are unique to each party and are neither continuous nor concurrent. The venture capitalist's gains are realized upon liquidation in the form of increase in value of their original investment. The venture's gains include the increase in value, but are more broadly related to the successful transition from inception to commercial viability. It is important, therefore, to respect the unique characteristics of the context when identifying control variables.

Identifying factors that create incentive or opportunity for opportunistic behavior is challenging, since there is a wide range of variables that have been empirically linked to the cooperation and opportunism. For example, Yilmaz and Hunt (2001) identified 39 factors from prior literature that have been shown to affect

cooperative behavior in organizations. They group these factors into four categories, namely, relational, task, organizational, and personal. Relational factors are those describing the characteristics of the interpersonal relationships and interactions between parties. They include trust, congruence of values, various characteristics of communications (e.g. frequency, modality, direction, and content), prior and anticipated behaviors, and the commitment of parties to the relationship (McAllister, 1995: Morgan & Hunt, 1994: Chatman & Barsade, 1995; Smith & Barclay, 1997; Heide & Miner, 1992; Seabright, 1993). Task factors characterize the nature of the activity around which interaction occurs. They include the extent to which the parties involved are interdependent with respect to task, goal and outcome, the complexity of the task, the incentives for cooperation, the identifiability/visibility of the task, and the extent to which the parties are personally accountable (Van De Ven, Delbecq, and Koenig, 1976; Tjosvold, 1984; Deutsch, 1973; Wagner, 1995). Organizational factors describe the organizational context within which cooperative behaviors may or may not emerge. They include the design and structure of the organization, organizational culture, reward system, control system, leadership style, rules and procedures, employee turnover, and number and accessibility of coworkers (Chatman & Bardsade, 1995; Axelrod, 1984; Anderson & Oliver, 1987; Podsakoff, MacKenzie, and Bommer, 1996; Galbraith & Nathanson, 1978; Kidwell & Bennett, 1993; Keller & Holland, 1983; Wagner, 1995). Personal factors describe individual attributes and characteristics such as collectivist orientation, cooperativeness, agreeableness, extraversion, external locus of control, social competence, empathy, past experience in teams, self-efficacy for teamwork, age, gender, education, and organizational tenure

(Wagner, 1995; Chatman & Barsade, 1995; Thorne, 1987; Eby & Dobbins, 1997; Argyle, 1991; Eisenberg & Miller, 1987; Burke, McKeen, and McKenna, 1990; Pullins, Fine, and Warren, 1996). More recent field research has examined the effect of identity confirmation and identity confirmation networks on cooperation (Milton and Westphal, 2005), controlling for personal ties, tenure similarity, age, race and gender similarity and supervisory status as likely antecedents to cooperation.

There has also been recent research spanning the fields of anthropology and psychology on genetic and cultural influences on cooperation (Fuentes, 2004; Hammerstein, 2003; Pierce & White, 1999). The majority of cooperation research has been focused on the behavior of individuals within teams. Researchers have also been interested in cooperation at the firm level, particularly in the context of joint ventures and strategic alliances (Clarke-Hill, Li and Davies, 2003; Deeds and Hill, 1998). The proposed research contributes to this body of work by examining interactions at a lower level of analysis and in the context of a relationship in which the relative contribution is less symmetrical with respect to type of contribution.

Factors affecting opportunism are not as numerous in the empirical literature as those affecting cooperation. Opportunism, defined as "self-interest seeking with guile" (Williamson, 1975, p. 6), has received significant attention in the context of transaction cost economics (TCE). Although self-interest seeking is a widely held assumption in economics, the additional notion of guile suggests intent to deceive. Indeed, Williamson (1985, p. 47) defines guile as "lying, stealing, cheating and

calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse." TCE theorists propose structural deterrents as the primary mechanisms to deter opportunistic behavior. These mechanisms are typically put into place during the negotiation of the deal and are designed to adjust the pay-off structure to reward cooperation and punish opportunism. These contractual safeguards include reporting and auditing requirements, governance and monitoring structures, intellectual property protection, and many others. They are designed to discourage ex ante opportunism by exacting ex post repercussions. Note that, in this research context, factors that inhibit opportunism are likely to encourage cooperation, since cooperation is the default behavior in a venture capital/venture relationship. Heide and Miner (1992) caution that cooperation should not be confused with compliance. For example, in a relationship in which one party is highly dependent upon the other, cooperative behavior may only be the result of limited alternatives. In their study of opportunism in biotechnology joint ventures, Deeds and Hill (1998) controlled for dependence on the partner since feelings of insecurity, helplessness, and lack of control by the dependent party could lead to attributions of opportunism. Their study differs from the proposed research in that their dependent variable was the perception of opportunism by the other party, whereas I propose to use self-reported opportunistic behavior. The balance of power in a venture capitalist/venture relationship usually rests with the venture capitalist and so dependence of the venture on the venture capitalist is assumed.

Subsequent theorists have taken exception to TCE on several fronts. Some

have questioned characterizing human nature in such a narrow and negative light (e.g. Ghoshal & Moran, 1996). Others have suggested that the formal and structured safeguards proposed by TCE are less effective in curbing opportunism and stimulating cooperation than relational factors such as trust and goal congruence (Deeds and Hill, 1998). The exercise of ex post deterrents is usually costly to both parties and often affects subsequent interactions (Das, 2004). Other mechanisms to decrease opportunism, such as equity investment by both parties (Schelling, 1963, Williamson, 1985), seek to discourage opportunism by reducing the benefit of non-cooperative behavior rather than punishing opportunism. Concern by the parties involved for the longevity of the relationship is also a deterrent to opportunistic behavior (Deeds and Hill, 1998) as there may be concerns about damaging their reputation. Thus, characteristics of individuals and relationships conducive to the creation of a healthy, long-term relationship are likely to be deterrents to non-cooperative or opportunistic behaviors. These characteristics would include many of the relational and personal factors identified by Wathne and Heide (2000) and described above. Although opportunism is generally regarded as having a negative impact on performance, the causal relationship may be reversed. A decline in performance of the venture may create friction between the two parties, e.g., through assignment of blame (Deeds and Hill, 2000). Opportunistic behavior may be undertaken as an act of retaliation or due to loss of confidence in the relationship, interpersonal differences or conflicting venture interests. It may be necessary, therefore, to control for perception of opportunistic behavior by the other party, venture performance and/or the performance of the relationship between the venture capitalist and the venture.

To capture meaningful differences in cooperation and opportunism predicted by differing managerial time horizons, I control for technological complexity, development stage and mode of venture capitalist involvement as affecting the level of opportunity for opportunistic behavior and trust, venture and relationship performance, and the level of equity investment by the ownership and management of the venture capital financed company.

The following is an explanation for the selection of the control variables.

**Technological Complexity**. In companies incorporating leading edge technology, there may be a significant knowledge gap between the venture capitalists and the venture's ownership and management regarding the complexity of development cycles. This gap may give rise to differing expectations regarding the temporal context of key investment decisions. Also, the inability to communicate effectively within the technical context of the venture may cause either party to consider it more expedient to act independently and covertly, rather than risk delayed or unfavorable decisions due to inadequate understanding of their perspective. Moreover, the asymmetry in technological expertise creates greater opportunity for the venture's management to obfuscate the reasons or explanations for their actions. I will control for technological complexity using similar measures that were employed in a study of the interactions of technology attributes and partner interdependence (Steensma & Corley, 2000). In this study, technological complexity is measured along the dimensions of imitatibility, uniqueness, uncertainty, and dynamism.

**Venture Development Stage**. The stage of development of the venture may also give rise to the hypothesized relationship between differing managerial time horizons and opportunistic behavior. In early development stages, as basic processes and technologies are being developed, there may be greater uncertainty with respect to timing of outcomes and the level of resources required. As the venture proceeds to commercialize its innovations process, technical uncertainly may be replaced by market uncertainty. Even though a similar level of uncertainty may characterize each stage, the venture capitalist's ability to manage those uncertainties is likely to become more influential as the venture proceeds towards commercialization, while the venture's ownership and management may be greater in the early development stage. Consequently, the differing time horizons of the two parties may shift in direction as the venture's development progresses. The increase power and control, as each party recognizes their greater ability to manage the uncertainties facing the venture, may encourage autonomous action. As the venture moves beyond initial market acceptance, there is a strong incentive for both parties to adopt a more unified and cooperative approach as they jointly prepare for refinancing of the venture. Since there are reasonable arguments for the stage of the ventures development to be the underlying cause of the variable relationship between differing time horizons and opportunistic behavior, I will control for the venture's stage of development using dummy variables for the three stages described above.

**Mode of Venture Capital Firm Involvement.** Although venture capitalists seldom maintain as hands-off a role as conventional financiers, a distinction can be

made between those firms that take an active role in the operational management of the venture as opposed to those who take advisory and/or governance roles. It is important to control for this variable, since the more direct involvement of the venture capital firm may have the effect of homogenizing their perspectives with those of the ownership and management of the venture. In technologically complex ventures, it may also reduce information asymmetry thereby reducing opportunity for opportunism.

**Venture and Relationship Performance**. As noted by Deeds and Hill (1998), perceptions by the two parties of the venture's performance and of the success of their relationship may influence opportunistic behavior. Differing perspectives on the venture's performance or on the working relationship may result in friction as well as cause either party to adjust the temporal context for their decisions. Loss of confidence in the other party through, for example, perceptions of opportunistic behavior, may result in decreased cooperation and engaging in opportunistic behaviors.

**Equity Investment**. Williamson (1985) suggests that the level of investment in a joint venture can act as a deterrent to opportunism. In the context of the venture capital/venture relationship, the degree to which the ownership and management of the venture directly benefit from the exit of the venture capital firm is most likely to influence their managerial time horizon. Even if the ownership and management plan to continue in their roles after the exit of the venture capital firm, the prospect of substantial increase in personal wealth can be expected to have a significant influence

over decisions that trade off short term gain versus long term sustainability. I will therefore control for equity held by ownership and management that is in the same class as that held by the venture capital firm.

# CHAPTER THREE

## Research Design and Description of Data

This research was designed to examine the relationship between perceived differences in managerial time horizon and the level of cooperation and opportunism between venture capitalists and the management of their portfolio companies. I hypothesize that perceptions of positive or negative interdependence mediate this relationship.

The basic premise of my dissertation is that managerial time horizons influence both the priority of decisions that need to be made and the criteria that are used to evaluate decision options. When interdependent parties have different managerial time horizons, this can become a source of conflict, resulting in perceptions that the outcome of their interdependence is a win-lose rather than a win-win situation. As a consequence, either party may perceive an incentive to forsake cooperation in favor of opportunistic or self serving behavior. All hypotheses were tested at the individual level of analysis using the perceptions and self-reported behaviors of respondent CEOs, or equivalent, of the venture capital financed companies. Sampling, data collection procedures, measures, and analysis are discussed within this chapter. Results are presented in Chapter Four. In Chapter Five, I discuss the conclusions, limitations of the study, and directions for future research.

## Sample and Data Collection Procedures

The study used cross-sectional data collected via a survey that participants

could complete either in writing or on-line. The description of the contextual setting, which was used to supplement the survey data and interpret the results, was based on 1) interviews of four partners in a diversified venture capital firm 2) four CEOs of early stage venture capital financed companies and 3) my prior experience as a management consultant in the industry.

While conducting preliminary research for this study, I held in-depth interviews with four partners of a diversified venture capital firm in Toronto. I also interviewed CEOs of four venture capital financed companies in food preparation, telecommunications, materials development, and software. The purpose of these interviews was to learn about the factors that influence their working relationship and decision processes, and to determine whether anecdotal evidence suggested that there is merit in investigating relations between managerial time horizons and cooperation. The interview questions are described in Appendix A. Care was taken to avoid direct questions such as "Do you ever mislead your investor" or "How important is the timing of your exit strategy when making decisions about company X". Rather, the interviews were based on open-ended questions such as "How do you deal with situations when you and your investor have conflicting opinions about the company's priorities?" or "What are the factors that influence your decisions about investments in your portfolio companies". These interviews confirmed the potential for differences in managerial time horizon between venture capital firms and the management of their portfolio companies, and evidenced both cooperative and opportunistic behaviors on the part of portfolio company management. The feedback from these interviews

suggested that there would be strong interest in the research and its practical applications. To ensure objectivity, none of those interviewed were included in the sample frame.

My prior experience was also of value in conducting the research and interpreting the results. This experience included several years working in a major consulting company advising CEO's of early stage companies and assisting partners of venture capital firms to redirect underperforming portfolio companies.

**Participants**

The sample frame for this study consisted of active venture capital investments in Canada. According to the Canadian Venture Capital Association (CVCA), in 2004 there were almost 1500 new venture capital investments valued at approximately $1.8 billion. This number includes multiple rounds of investment in one company and so does not reflect the total number of companies. Ontario-based companies receive one third of the total Canadian investments and almost half of the dollars invested. Nationally, information technology and communications account for half of the venture capital investments, followed by the life science and traditional sectors (i.e. manufacturing, retail, consumer products and services) which each account for about one fifth.

Assistance and support in collecting data was obtained from personal contacts and from the CVCA, whose 1000 members represent the majority of private equity

companies in Canada and have over $50 billion in capital under management. Prior interviews with the venture capital partners and CEOs of venture capital financed companies were helpful in securing the support of the CVCA by validating the importance of the research and its value to the Association and its members.

The nature of the venture capital/portfolio company relationship is sensitive. Both entities are private companies and are often operating in highly competitive environments. They are scrutinized by competitors, potential investors, future portfolio companies, suppliers, and others. If there are differences and sources of friction between the two, there is little to be gained (and potentially much to lose) by making those disagreements public, because of the potential for negative repercussions from current and future stakeholders. In order to secure willing participation and candid responses, the respondents were given assurance of confidentiality and the opportunity to maintain their anonymity.

The sampling frame was developed using a private data base maintained for the Canadian Venture Capital Association (CVCA). The original sample contained 825 companies that had received greater than $500,000 venture capital financing. This limit was based on the previously described interviews with venture capital firms who reported that the majority of their time and attention was on their larger investments. By selecting larger investments, I was able to ensure frequent and significant interaction between the venture capital firms and the company management and, therefore, greater opportunity for the management respondents to form

perceptions regarding their venture capitalist partner's time horizon and their mutual goal interdependence. A detailed screening of the list identified 350 companies that had ceased operations, changed location, been acquired, or gone public, leaving 475 for consideration. For many of these companies, the contact information was incorrect. Accordingly, I revised the list of companies by contacting or using online information supplied by all the private equity firms identified in the CVCA database. For each firm, I identified active portfolio companies and obtained accurate and up to date contact information. As a result of the reconstruction of the sampling frame, 66 companies were eliminated due their having ceased operations, been acquired or gone public, leaving 409 companies. The CEOs of the remaining companies were contacted by email and/or telephone to confirm their willingness to participate in the study. Potential respondents were made aware of the nature of the study and given assurances of confidentiality. Approximately 230 potential respondents responded to the email invitation or were contacted directly by telephone, and 166 agreed to participate. The CEO's of the remaining 179 companies did not respond to emails and could not to be reached by telephone. The willing respondents were given the option of completing a hard copy survey which was mailed to their place of business or completing an on-line survey that was hosted by the Richard Ivey School of Business. A copy of the survey and the cover letter are provided in Appendix A. After two follow-up contacts by email and telephone, a total 52 usable responses were obtained – 25 on-line and 27 written. Based on 52 responses from a sample of 409, the response rate was 12.7%.

Despite the low response rate, there are several characteristics of the participants that indicate the sample is representative of the larger population. Although social desirability bias is likely to discourage firms with negative perceptions of their venture capital firms, it was not possible to determine whether this was the case. However, the resulting composition of the sample would only make statistical tests with respect to opportunistic behavior more conservative. The final sample included CEOs of portfolio companies that were at different stages of development. Also, the percentage of equity held by management and company performance varied. The nature of these characteristics in the larger population and the distribution of the sample according to each are described in the following section.

Venture capital financing can occur at several stages in a company's development. The stage at which financing is introduced can affect the company's needs of the venture capital firm and the nature of their interactions. In early stage companies, particularly those employing sophisticated technology, the level of information asymmetry between the company management and the venture capital firm may make it easier for management to pursue its own priorities even if they diverge from those of the venture capital firm. As a company adds more resources and shifts to commercializing its technology within a more formalized organization, its actions are more transparent. Because it was important that these stages be represented in the sample, the respondents were asked to report on their company's stage of development. This was to examine the effect of stage of development on the relationship between managerial time horizon and cooperative/opportunistic behavior,

and to ensure that the sample contained a meaningful representation of development stages. A summary of the distribution of respondents by stage of development compared with the distribution for all reported venture capital investment (Canadian Venture Capital Association, 2007) is shown in Table 3.1. As shown, the distribution in the sample is similar to that for the population as a whole.

**Table 3.1: Sample Distribution by Stage of Development**

| Stage of Development | Percentage of Respondents | Industry Distribution |
|---|---|---|
| Pre-Commercial/Early Development – including one or more of:<br>a. None or very limited revenue<br>b. Primary focus on R&D<br>c. Developing process, product or service | (17%) | 9% |
| Commercial/Market Acceptance – including one or more of<br>a. Growing revenue from initial commercial activity<br>b. Focus on gaining market acceptance<br>c. Active sales and marketing efforts | (60%) | 61% |
| Consolidation/Formalization – including one or more of<br>a. Established market presence<br>b. Focus on sustaining growth<br>c. Building organizational capability | (23%) | 29% |

Given that (as discussed in Chapter 2) there are substantial differences in the technological sophistication between early stage companies, I included companies in the sample with various degrees of technological sophistication in either product or process technology. Again, this was for control purposes as well as to ensure adequate representation across the technology continuum. Prior research has shown that technological sophistication explains variations in partner interdependence (Steensma & Corley, 2000). The sample reflected a normal distribution of companies ranging from very low levels of technology sophistication to those applying complex leading

edge technologies. The construction of the scale to measure technological complexity is described in the section on measures later in this chapter.

All 4 of the CEOs who participated in the preliminary interviews conducted prior to data collection reported differences in the level and nature of involvement of the venture capital firms in their companies. Of 52 companies surveyed, there were only 5 companies in which the venture capital company was not substantially involved in board-level governance. The respondents were asked to self-report on their venture capital firm's level of board level involvement with respect to both the provision of advice and counsel and in the monitoring and control role (Westphal, 1999). For the 47 companies in which the venture capital firm was substantially involved in board-level governance, there was a high correlation (R=0.73) between the scores for provision of advice and counsel and those for a monitoring and control role. I employed the 7 point Likert scale, with 1 indicating no involvement and 7 indicating high involvement; the average for the monitoring and control role was 5.1, whereas the average for the advice and counsel role was 4.7. These statistics suggest that venture capital firms are seen by the management of their portfolio companies to be more engaged in monitoring the performance of the company than assisting management in developing strategy. There were only 4 of the 52 companies in which the venture capital firm played even a moderate role in day-to-day operations – predominantly in the finance area. Excluding companies with less than $500,000 investment might account for the high level of involvement in board-level governance and low involvement in operations that was observed. I conjecture that venture capital

firms are more likely to be involved in their larger investments and the companies requiring higher levels of financing are more likely to have sufficient in-house resources, so as not to need the involvement of the venture capital firm in their operations.

The percentage of equity controlled by management is an important characteristic of venture capital financed companies, since it reflects the ability of management to advocate and even enforce its priorities. A high percentage of management ownership is also a proxy for founder-led companies, since initial founders are more likely to retain a higher portion of the company's equity than is professional management. The preliminary interviews with the venture capital partners frequently surfaced their aversion to founder-led companies because of their personal experiences of uncooperative relationships with company founders. 'Founder syndrome' is a common term within the venture capital community that refers to the popular perception of negative or undesirable behavior on the part of the founder. The distribution of respondent companies by the amount of equity controlled by the senior management team is shown in Table 3.2 below.

**Table 3.2: Sample Distribution by Management Equity Held**

| Percentage of Equity Controlled by Sr. Management | Number of Respondents |
|---|---|
| 50% or more | 0 |
| Equal to or above 25% but less than 50% | 11 |
| Equal to or above 10% but less than 25% | 14 |
| Greater than 0% but less than 10% | 16 |
| None | 11 |
| TOTAL | 52 |

It is interesting, but not unexpected, to note that the level of management ownership appears to decrease according to the stage of company development. In all of the 9 companies in the Pre-Commercial/Early-Development stage, management controlled more than 10% of the equity, whereas this was the case in 12 of the 30 companies in the Commercial/Market Acceptance stage and only one of the companies in the Consolidation/Formalization stage. Dilution in ownership will occur as the portfolio company goes through additional rounds of financing. As a company progresses, dilution can be mitigated by either generating sufficient cash to finance its growth capital requirements or by substantially increasing its valuation between financing rounds. The more successful the company, the greater is its ability to maintain ownership control. My sample includes several levels of management ownership at each stage of development.

Considering the low response rate, it was important to ensure that the respondents were not biased towards better performing companies that may be less reluctant to disclose sensitive information. It was also important to identify whether

or not the performance of the respondent CEO's companies met the expectations of management and venture capital firms, since disagreement with respect to company performance may also be a source of conflict. An indication of this in the sample is the level of investor and management satisfaction with the performance of the company. Within my sample, 50% of the respondent CEOs perceived their venture capital firms to be satisfied with the performance of the company. The other 50% of venture capital firms were perceived by management as being neutral or dissatisfied with performance. In contrast, 60 % of the management respondents indicated satisfaction with the performance of the company, while 40 % were neutral or dissatisfied. Overall, management reported a higher level of satisfaction with their company's performance than the level of satisfaction they perceived from their venture capital firm. Of the 52 CEO respondents, 19 (60%) indicated a difference between their level of satisfaction with performance and the perceived level of satisfaction of their venture capital firm. In 29% of those cases the difference was in excess of 1.5 standard deviations from the mean.

Lastly, it was important to ensure that the sample was not biased in favor of CEOs who were either positively or negatively disposed to their venture capital firms. The former may be more willing to respond as the sensitivity of the questions is diminished. The latter may view the survey as an opportunity to vent their frustrations. The interviews with venture capital partners and CEOs of venture capital financed companies suggested that there was a wide variation in the level of satisfaction with the relationship between management of portfolio companies and their venture capital

firms. Comments made by the 4 CEOs ranged from vitriolic condemnation to effusive praise of their venture capital firm. The sample was consistent with the range of views expressed with CEOs providing responses along the full range of strong satisfaction to strong dissatisfaction with the working relationship with their venture capital firm. Overall, the respondents in the sample were at least somewhat satisfied with their working relationship with the venture capital firm. (i.e. a score of 5 or more on the 7 point Likert scale, with 1 representing strong disagreement with the statement "I am satisfied with the working relationship between the senior management team and our investor" and 7 representing strong agreement with the same statement). A minority of 31% voiced dissatisfaction with the relationship (i.e. a score of 3 or less).

**Measures**

Participants completed multi-item scales measuring managerial time horizon, goal interdependence, cooperation, opportunism, technological complexity, venture development stage, mode of venture capital firm involvement, satisfaction with venture performance, satisfaction with working relationship with the venture capital firm, and the level of equity held by management. Each of the measures used in the survey was tested for face validity with 2 local CEO's of early stage companies and a venture capital investor. Neither of the CEO's was included in the sample. Each measure is now described, including (where appropriate) inter-item correlations, reliability of the scales and their factor structure.

The range, mean and standard deviations for the measures used in the study are contained in Table 3.3.

**Table 3.3: Descriptive Statistics for All Measures**

| Measures | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Perceived Difference in Managerial Time Horizons (DIFFMTH) | 52 | 1.00 | 7.00 | 4.5096 | 1.45939 |
| Perceived Alignment in Managerial Time Horizons (SIMMTH) | 52 | 2.86 | 7.00 | 4.8077 | 1.11409 |
| Perceived Alignment/Difference in Managerial Time Horizons (MTH) | 52 | 2.18 | 7.00 | 4.3287 | 1.11880 |
| Cooperative Behavior (COOP) | 52 | 2.57 | 7.00 | 4.4808 | .99439 |
| Opportunistic Behavior (OPP) | 52 | 1.00 | 5.14 | 2.8352 | 1.14229 |
| Cooperative/Opportunistic Behavior(COOP/OPP) | 52 | 2.82 | 7.00 | 4.7439 | .91029 |
| Perceived Interdependence (INT) | 52 | 3.33 | 7.00 | 5.4038 | .75649 |
| Perceived Positive Interdependence (PGINT) | 52 | 2.00 | 7.00 | 4.8141 | 1.12103 |
| Perceived Negative Interdependence (NGINT) | 52 | 1.00 | 6.00 | 3.9936 | 1.33086 |
| Technological Complexity (TECH) | 52 | 1.67 | 6.56 | 4.5748 | 1.18506 |
| Involvement in Board Governance (BDGOV) | 52 | 1.00 | 7.00 | 5.3269 | 1.32059 |
| Operational Involvement (BDOPS) | 52 | 1.00 | 4.67 | 2.4423 | .90139 |
| Perceived Investor Satisfaction with Performance (INVSAT) | 52 | 1.00 | 7.00 | 4.2885 | 1.60069 |
| Management Satisfaction with Performance (MANSAT) | 52 | 1.00 | 7.00 | 4.5962 | 1.38987 |
| Management Satisfaction with Working Relationship (RELSAT) | 52 | 1.00 | 7.00 | 4.5385 | 1.76526 |
| Equity Controlled by Management (MANEQ) | 52 | 2.00 | 5.00 | 3.5192 | 1.05701 |

The frequency distributions for the measures are shown in Table 3.4. For each measure, the score on the 7 point Likert scale is shown for each quartile. For example, for perceived difference in managerial time horizon, 25% of the responses were scored

at 3.5 or less, 50% of the responses were scored at 4.62 or less, and 75% were scored at 5.75 or less. Skewness measures the degree and direction of asymmetry in the responses. A symmetric distribution, such as a normal distribution has a skewness of 0, and a distribution that is skewed to the left (e.g., when the mean is less than the median) has a negative skewness.

**Table 3.4: Frequency Distribution for All Measures**

| Measures | N | Percentiles | | | Skewness | Std. Error of Skewness |
|---|---|---|---|---|---|---|
| | | 25% | 50% | 75% | | |
| Perceived Difference in Managerial Time Horizons (DIFFMTH) | 52 | 3.50 | 4.623 | 5.75 | -0.287 | 0.33 |
| Perceived Alignment in Managerial Time Horizons (SIMMTH) | 52 | 4.00 | 5.00 | 5.57 | -0.319 | 0.33 |
| Perceived Alignment/Difference in Managerial Time Horizons (MTH) | 52 | 3.59 | 4.27 | 5.18 | 0.033 | 0.33 |
| Cooperative Behavior (COOP) | 52 | 3.75 | 4.53 | 4.98 | 0.078 | 0.33 |
| Opportunistic Behavior (OPP) | 52 | 1.89 | 2.79 | 3.68 | 0.463 | 0.33 |
| Cooperative/Opportunistic Behavior(COOP/OPP) | 52 | 4.06 | 4.69 | 5.35 | 0.036 | 0.33 |
| Perceived Interdependence (INT) | 52 | 5.00 | 5.33 | 6.00 | -0.095 | 0.33 |
| Perceived Positive Interdependence (PGINT) | 52 | 4.08 | 5.00 | 5.33 | -0.240 | 0.33 |
| Perceived Negative Interdependence (NGINT) | 52 | 3.00 | 4.17 | 5.00 | -0.533 | 0.33 |
| Technological Complexity (TECH) | 52 | 3.78 | 4.67 | 5.44 | -0.415 | 0.33 |
| Involvement in Board Governance (BDGOV) | 52 | 5.13 | 5.50 | 6.00 | -1.774 | 0.33 |
| Operational Involvement (BDOPS) | 52 | 1.83 | 2.42 | 3.00 | 0.485 | 0.33 |
| Perceived Investor Satisfaction with Performance (INVSAT) | 52 | 3.00 | 4.50 | 6.00 | -0.225 | 0.33 |
| Management Satisfaction with Performance (MANSAT) | 52 | 4.00 | 5.00 | 5.75 | -0.640 | 0.33 |
| Management Satisfaction with Working Relationship (RELSAT) | 52 | 3.00 | 5.00 | 6.00 | -0.478 | 0.33 |
| Equity Controlled by Management (MANEQ) | 52 | 3.00 | 4.00 | 4.00 | -0.052 | 0.33 |

The correlation matrix for the measures is shown in Table 3.5. There is a significant degree of multi-co-linearity amongst the control variables, which makes it difficult to statistically isolate relative effects. As expected, there are significant, and appropriately positive and negative, correlations between independent and dependent variables. Of some concern is the unexpectedly low correlation of -.571 between the

measures for cooperative behavior and opportunistic behavior. Since these represent contrasting behaviors, I would have expected a higher correlation. However, the low correlation is consistent with my survey design in that I did not assume that low score on questions dealing with cooperative behavior would necessarily imply opportunistic behavior. The low mean of 2.8 for opportunistic behavior compared with the mean of 4.5 for cooperative behavior supports this view and suggests that opportunistic behavior is far from the norm and is not only an expression of low cooperation. I believe that the high end of the range for opportunistic behavior of only 5.14 on a 7 point Likert scale results from a social desirability bias, since several follow-up interviews with a small sample of respondents confirmed that they had been reluctant to accurately report their opportunistic behavior. However, this bias in the data introduces a greater degree of conservatism to the data and strengthens conclusions that can be drawn from significant statistical results.

**Table 3.5: Correlation Matrix for All Measures**

| Measures | DiffMTH | SIMMMTH | MTH | COOP | OPP | COOP/OPP | INT | PGINT |
|---|---|---|---|---|---|---|---|---|
| Perceived Difference in Managerial Time Horizon (DIFFMTH) | 1 | | | | | | | |
| Perceived Alignment in Managerial Time Horizon (SIMMTH) | (.621)** | 1 | | | | | | |
| Perceived Difference in Managerial Time Horizons (MTH) | (.867)** | .928 | 1 | | | | | |
| Cooperative Behavior (COOP) | (.592)** | .758 | .762 | 1 | | | | |
| Opportunistic Behavior (OPP) | .621** | (.575) | (.655) | (.571) | 1 | | | |
| Cooperative Behavior(COOP/OPP) | (.670)** | .772 | .807** | .942 | (.813) | 1 | | |
| Perceived Interdependence (INT) | (.421)** | .579 | .567** | .639 | (.332) | .591** | 1 | |
| Perceived Positive Interdependence (PGINT) | (.632)** | .729 | .762** | .728 | (.571) | .745** | .704** | 1 |
| Perceived Negative Interdependence (NGINT) | .665** | (.585) | (.686)** | (.624) | .681 | (.713)** | (.428)** | (.645)** |
| Technological Complexity (TECH) | .317 | (.171) | (.258) | (.309) | .396 | (.379)** | -.030 | (.227) |
| Involvement in Board Governance (BDGOV) | (.247) | .332 | .328* | .507 | (.248) | .467** | .461** | .516** |
| Operational Involvement (BDOPS) | 0.057 | .053 | .007 | .157 | .196 | .028 | .110 | .092 |
| Perceived Investor Satisfaction with Performance (INVSAT) | (.427) | .564 | .560** | .572 | (.341) | .545** | .404** | .438** |
| Management Satisfaction with Performance (MANSAT) | (.353) | .486 | .476** | .433 | (.265) | .411** | .463** | .387** |
| Management Satisfaction with Working Relationship (RELSAT) | (.645) | .653 | .720** | .753 | (.650) | .794** | .475** | .696** |
| Equity Controlled by Management (MANEQ) | .073 | (.068) | (.078) | (.170) | (.169) | (.078) | (.055) | (.104) |

**Table 3.5: Correlation Matrix for All Measures (Cont)**

| Measures | NGINT | TECH | BDGOV | BDOPS | INVSAT | MANSAT | RELSAT | MANEQ |
|---|---|---|---|---|---|---|---|---|
| Perceived Difference in Managerial Time Horizon (DIFFMTH) | | | | | | | | |
| Perceived Alignment in Managerial Time Horizon (SIMMTH) | | | | | | | | |
| Perceived Difference in Managerial Time Horizons (MTH) | | | | | | | | |
| Cooperative Behavior (COOP) | | | | | | | | |
| Opportunistic Behavior (OPP) | | | | | | | | |
| Cooperative Behavior(COOP/OPP) | | | | | | | | |
| Perceived Interdependence (INT) | | | | | | | | |
| Perceived Positive Interdependence (PGINT) | | | | | | | | |
| Perceived Negative Interdependence (NGINT) | 1 | | | | | | | |
| Technological Complexity (TECH) | .282* | 1 | | | | | | |
| Involvement in Board Governance (BDGOV) | (.374)** | (.166) | 1 | | | | | |
| Operational Involvement (BDOPS) | .100 | .136 | .285* | 1 | | | | |
| Perceived Investor Satisfaction with Performance (INVSAT) | (.481)** | (.099) | .395** | (.006) | 1 | | | |
| Management Satisfaction with Performance (MANSAT) | (.390)** | .046 | .506** | (.024) | .723** | 1 | | |
| Management Satisfaction with Working Relationship (RELSAT) | (.655)** | (.291)* | .524** | .110 | .631** | .450** | 1 | |
| Equity Controlled by Management (MANEQ) | .016 | (.041) | (.201) | (.071) | .072 | .012 | (.079) | 1 |

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

**Perceived Differences in Managerial Time Horizons**

The independent variable perceived differences in managerial time horizons was measured using 11 items. A 7 point Likert scale was used with a high score reflecting alignment of managerial time horizons and low scores reflecting difference. Five items for which high scores represented perceived difference in managerial time horizon were reverse coded prior to analysis. Cronbach Alphas are 0.859 for items reflecting perceived alignment in managerial time horizon; .863 for items reflecting difference in managerial time horizon; and .897 for all items combined (with reverse coding of items reflecting perceived difference in managerial time horizon).

The specific statements for which the respondents were asked to express their agreement or disagreement were as follows:

- When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) (IM-1.1)
- Our investor's decisions are overly influenced by the timing of their own goals and objectives (Reverse Coded) (IM-1.2)
- Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) (IM-1.3
- Our investor and we share a common sense of priority (i.e. the order in which things should get done) (IM-1.4)
- When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results (Reverse Coded) (IM-1.5)
- Our investor and we are equally committed to the long-term development of the company (IM-1.6)
- Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable (Reverse Coded) (IM-1.7)

- When making decisions, our investor seldom looks beyond the period of their direct involvement (Reverse Coded) (IM-1.8)
- We are as committed as our investor to achieving performance objectives and milestones (IM-1.9)
- When thinking about the future of the business, our investor and we share a common time horizon (IM-1.10)
- When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes (IM-1.11)

Three factor analyses were conducted. The sample size is at the low end for meaningful results from factor analysis (Tabachnick & Fidell, 2001). I therefore included the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy as well as Bartlett's test of sphericity. Nonetheless, the results of the analysis, particularly the interpretation of the factors, should be viewed with caution. Firstly, I analyzed the items IM-1.1, IM-1.3, IM-1.4, IM-1.6, IM-1.10, and IM-1.11, which are worded for high scores representing perceived alignment of managerial time horizons. The inter-item correlation matrix is contained in Table 3.6. Appendix B contains the coding of the survey questions. The code for each question is also included in parentheses following each of the questions shown above.

**Table 3.6: Correlation Matrix for Perceived Alignment in Managerial Time Horizons**

| Survey Items | IM-1.1 | IM-1.3 | IM-1.4 | IM-1.6 | IM-1.10 | IM-1.11 |
|---|---|---|---|---|---|---|
| When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) - IM-1.1 | 1 | | | | | |
| Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) - IM-1.3 | .650 | 1 | | | | |
| Our investor and we share a common sense of priority (i.e. the order in which things should get done) - IM-1.4 | .686 | .457 | 1 | | | |
| Our investor and we are equally committed to the long-term development of the company - IM-1.6 | .448 | .481 | .328 | 1 | | |
| When thinking about the future of the business, our investor and we share a common time horizon - IM-1.10 | .538 | .462 | .427 | .594 | 1 | |
| When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes - IM-1.11 | .749 | .391 | .719 | .235* | .544 | 1 |

All significant at the 0.01 level except * significant at the 0.05 level.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. Table 3.7 presents the KMO and Bartlett's test for perceived alignment in managerial time horizon.

**Table 3.7: KMO and Bartlett's Test for Perceived Alignment in Managerial Time Horizons**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .751 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 161.945 |
| | df | 15 |
| | Sig. | .000 |

The KMO measure (Table 3.7) was 0.751 which exceeds the suggested minimum of 0.5, indicating that the sample size is sufficient for factor analysis. Bartlett's test of sphericity is used to test the null hypothesis that the scale items matrix are uncorrelated. The observed significance level of 0.000 was small enough to reject the hypothesis. It is concluded that the strength of the relationship among scale items is strong.

Only one component was extracted explaining 59.974 % of the variance (Tables 3.8 and 3.9).

**Table 3.8: Total Variance Explained for Perceived Alignment in Managerial Time Horizon**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.598 | 59.974 | 59.974 | 3.150 | 52.502 | 52.502 |
| 2 | .978 | 16.303 | 76.277 | | | |
| 3 | .600 | 10.003 | 86.279 | | | |
| 4 | .403 | 6.709 | 92.989 | | | |
| 5 | .269 | 4.489 | 97.478 | | | |
| 6 | .151 | 2.522 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

**Table 3.9: Factor Matrix for Perceived Alignment in Managerial Time Horizons**

| Survey Items | Factor 1 |
|---|---|
| When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) - IM-1.1 | .917 |
| Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) - IM-1.3 | .659 |
| Our investor and we share a common sense of priority (i.e. the order in which things should get done) - IM-1.4 | .765 |
| Our investor and we are equally committed to the long-term development of the company - IM-1.6 | .491 |
| When thinking about the future of the business, our investor and we share a common time horizon - IM-1.10 | .628 |
| When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes - IM-1.11 | .808 |

Extraction Method: Maximum Likelihood.

The inter-item correlation matrix for the items measuring perceived difference in managerial time horizon (i.e., IM-1.2, IM-1.5, IM-1.7, IM-1.8) are contained in Table 3.10.

**Table 3.10: Correlation Matrix for Perceived Differences in Managerial Time Horizons**

| Survey Items | IM-1.2 | IM-1.5 | IM-1.7 | IM-1.8 |
|---|---|---|---|---|
| Our investor's decisions are overly influenced by the timing of their own goals and objectives - IM-1.2 | 1 | | | |
| When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results - IM-1.5 | .741 | 1 | | |
| Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable - IM-1.7 | .467 | .451 | 1 | |
| When making decisions, our investor seldom looks beyond the period of their direct involvement - IM-1.8 | .681 | .717 | .605 | 1 |

All correlations significant at the 0.01 level.

Secondly, items IM-1.2, IM-1.5, IM-1.7,and IM-1.8, which measured perceived differences in managerial time horizons, were analyzed, yielding a KMO measure of .781, 0.000 *p* value on Bartlett's test of sphericity (Table 3.11) and a single component that explains 71% of the variance (Tables 3.12 and 3.13). Item IM-1.9 was not used in the analysis as it was viewed as an ambiguous indicator of time horizon by the CEOs who participated in the face validity testing of the survey. However, the data was still collected.

**Table 3.11: KMO and Bartlett's Test for Perceived Differences in Managerial Time Horizons**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .781 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 102.073 |
| | df | 6 |
| | Sig. | .000 |

**Table 3.12: Total Variance Explained for Perceived Differences in Managerial Time Horizons**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.845 | 71.134 | 71.134 | 2.501 | 62.531 | 62.531 |
| 2 | .624 | 15.611 | 86.745 | | | |
| 3 | .291 | 7.279 | 94.024 | | | |
| 4 | .239 | 5.976 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

**Table 3.13: Factor Matrix for Perceived Differences in Managerial Time Horizons**

| Survey Items | Factor 1 |
|---|---|
| Our investor's decisions are overly influenced by the timing of their own goals and objectives - IM-1.2 | .829 |
| When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results - IM-1.5 | .855 |
| Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable - IM-1.7 | .602 |
| When making decisions, our investor seldom looks beyond the period of their direct involvement - IM-1.8 | .849 |

Extraction Method: Maximum Likelihood.

Finally all items were tested together with items IM-1.2, IM-1.5, IM-1.4, and IM-1.8, which measure perceived differences in managerial time horizon, reverse coded. Table 3.14 shows the inter-item correlations for the combined scales. This analysis yielded a KMO measure of 0.808, 0.000 $p$ value on Bartlett's test of sphericity (Table 3.15) and two components explaining 68% of the variance (Tables 3.16 and 3.17).

**Table 3.14: Correlation Matrix for Perceived Alignment/Difference in Managerial Time Horizons (Combined Scales)**

| | Survey Items | IM-1.1 | IM-1.2® | IM-1.3 | IM-1.4 | IM-1.5® | IM-1.6 | IM-1.7® | IM-1.8® | IM-1.10 | IM-1.11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) - IM-1.1 | 1 | | | | | | | | | |
| | Our investor's decisions are overly influenced by the timing of their own goals and objectives - IM-1.2® | .524 | 1 | | | | | | | | |
| | Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) - IM-1.3 | .650 | .339 | 1 | | | | | | | |
| | Our investor and we share a common sense of priority (i.e. the order in which things should get done) - IM-1.4 | .686 | .456 | .457 | 1 | | | | | | |
| | When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results - IM-1.5® | .360 | .741 | .352 | .263 | 1 | | | | | |
| | Our investor and we are equally committed to the long-term development of the company - IM-1.6 | .448 | .452 | .481 | .328 | .560 | 1 | | | | |
| | Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable - IM-1.7® | .388 | .467 | .175 | .411 | .451 | .598 | 1 | | | |
| | When making decisions, our investor seldom looks beyond the period of their direct involvement - IM-1.8® | .460 | .681 | .285 | .215 | .717 | .645 | .605 | 1 | | |
| | When thinking about the future of the business, our investor and we share a common time horizon - IM-1.10 | .538 | .385 | .462 | .427 | .274 | .594 | .516 | .459 | 1 | |
| | When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes - IM-1.11 | .749 | .512 | .391 | .719 | .211 | .235 | .452 | .309 | .544 | 1 |

® - Reverse Coded

**Table 3.14: Correlation Matrix for Perceived Alignment/Difference in Managerial Time Horizons (Combined Scales) (Cont.)**

| | Survey Items | IM-1.1 | IM-1.2® | IM-1.3 | IM-1.4 | IM-1.5® | IM-1.6 | IM-1.7® | IM-1.8® | IM-1.10 | IM-1.11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sig. (1-tailed) | When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) - IM-1.1 | | | | | | | | | | |
| | Our investor's decisions are overly influenced by the timing of their own goals and objectives - IM-1.2® | .000 | | | | | | | | | |
| | Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) - IM-1.3 | .000 | .007 | | | | | | | | |
| | Our investor and we share a common sense of priority (i.e. the order in which things should get done) - IM-1.4 | .000 | .000 | .000 | | | | | | | |
| | When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results - IM-1.5® | .004 | .000 | .005 | .030 | | | | | | |
| | Our investor and we are equally committed to the long-term development of the company - IM-1.6 | .000 | .000 | .000 | .009 | .000 | | | | | |
| | Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable - IM-1.7® | .002 | .000 | .107 | .001 | .000 | .000 | | | | |
| | When making decisions, our investor seldom looks beyond the period of their direct involvement - IM-1.8® | .000 | .000 | .020 | .063 | .000 | .000 | .000 | | | |
| | When thinking about the future of the business, our investor and we share a common time horizon - IM-1.10 | .000 | .002 | .000 | .001 | .025 | .000 | .000 | .000 | | |
| | When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes - IM-1.11 | .000 | .000 | .002 | .000 | .067 | .047 | .000 | .013 | .000 | |

® - Reverse Coded

**Table 3.15: KMO and Bartlett's Test Matrix for Perceived Alignment/Difference in Managerial Time Horizons (Combined Scales)**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .808 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 331.715 |
| | df | 45 |
| | Sig. | .000 |

**Table 3.16: Total Variance Explained for Perceived Alignment/Difference in Managerial Time Horizons (Combined Scales)**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.216 | 52.163 | 52.163 | 4.826 | 48.256 | 48.256 |
| 2 | 1.554 | 15.542 | 67.705 | 1.257 | 12.568 | 60.824 |
| 3 | .876 | 8.762 | 76.467 | | | |
| 4 | .851 | 8.509 | 84.977 | | | |
| 5 | .449 | 4.494 | 89.471 | | | |
| 6 | .330 | 3.305 | 92.776 | | | |
| 7 | .255 | 2.547 | 95.322 | | | |
| 8 | .179 | 1.795 | 97.117 | | | |
| 9 | .162 | 1.621 | 98.738 | | | |
| 10 | .126 | 1.262 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

**Table 3.17: Factor Matrix for Perceived Alignment/Difference in Managerial Time Horizons (Combined Scales)**

| Survey Items | Factor | |
|---|---|---|
| | 1 | 2 |
| When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) - IM-1.1 | .804 | -.347 |
| Our investor's decisions are overly influenced by the timing of their own goals and objectives - IM-1.2® | .773 | .198 |
| Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) - IM-1.3 | .567 | -.184 |
| Our investor and we share a common sense of priority (i.e. the order in which things should get done) - IM-1.4 | .661 | -.474 |
| When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results - IM-1.5® | .666 | .477 |
| Our investor and we are equally committed to the long-term development of the company - IM-1.6 | .666 | .293 |
| Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable - IM-1.7® | .655 | .153 |
| When making decisions, our investor seldom looks beyond the period of their direct involvement - IM-1.8® | .755 | .491 |
| When thinking about the future of the business, our investor and we share a common time horizon - IM-1.10 | .651 | -.101 |
| When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes - IM-1.11 | .717 | -.501 |

Extraction Method: Maximum Likelihood.

While the interpretation of the two factor model (Table 3.17) should be interpreted with caution due to the small sample and the number of scale items, which reduces the power of this analysis, the factor loadings appear to separate the perceptions of managerial time horizon differences that are based on investor actions (Factor 1), from those which reflect judgments regarding common temporal perspectives (Factor 2).

Managerial time horizons are difficult to measure quantitatively, since most managers make a wide variety of decisions covering a range of time horizons.

Although it may be possible to isolate the set of decision that primarily relate to the manager's role and responsibilities, in practice I have to rely on the respondent to identify that decision set. The potential for inconsistent identification across all respondents would introduce a high level of unreliability to the data. Obtaining an objectively valid difference score using separate responses from dyads of interdependent parties is, therefore, unadvisable.

I do not assume that difference in the managerial time horizons is unidirectional. Although I have argued that the venture capital focus on the timing of exit supports a shorter-term time horizon than that of the ownership and management of the venture, there are arguments supporting the opposite. For example, a venture may be excessively focused on the immediate opportunities for its technology, whereas the venture capital firm may bring a broader and longer term perspective to the commercialization process. I use a single scale rather than a difference score. Substantive and methodological problems with polynomial regression and with difference scores have been well documented (Cronbach & Furby, 1970; Johns, 1981; Edwards, 1993; Edwards & Parry, 1994; Edwards, 2001).

**Cooperative Behavior**

The dependent variable, cooperation (COOP) was measured using 22 items each on a 7 point Likert scale. Opportunistic behavior is directly measured using 9 items based on the work of John (1984) and used in subsequent studies (e.g., Parkhe, 1993; Provan & Skinner, 1989; Wong, Tjosvold, & YU, 2005). Questions worded

such that a high score corresponded with opportunism, were reverse-coded prior to analysis. Cronbach alphas were 0.901 for items reflecting cooperative behavior; 0.807 for items reflecting opportunistic behavior; and 0.912 for all items (with reverse coding of items reflecting opportunistic behavior). Cooperation is a complex phenomenon since, in a relationship between two parties, they may be cooperative in some areas but not in others (Buckley & Casson, 1988). Therefore, following Heide and Miner (1992) and Kaufman and Stern (1988), I use scales to measure four dimensions of cooperation. *Flexibility* accounts for the degree to which each party adjusts their behavior to accommodate the needs of the others. *Information exchange* addresses the degree to which each party discloses information that may facilitate the other party's activities, as opposed to keeping all information proprietary. *Shared problem-solving* measures the degree to which the parties share responsibility for maintaining the relationship itself and for problems that arise from time to time. *Restraint in the use of power* is the degree to which each party typically refrains from exploiting each other and is willing to sacrifice short-term gains if they are at the expense of the other party. The theorized contrast between cooperation and opportunism was supported by a high correlation ($R^2$=0.571, $p$<0.01) between low scores on questions for which high scores represent cooperation, and high scores on questions form which high scores represent opportunism. Because of the problems with difference scores stated above, the use of a single scale for both the dependent and the independent variables is preferred.

The survey items designed to capture the continuum from opportunism to cooperation are as follows:

- We always provided our investor with a completely truthful picture of our business. (IM-1.12)
- We feel that it is O.K. to do anything within our means that will help us further our own interests (Reverse Coded) (IM-1.13)
- In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need (Reverse Coded) (IM-1.14)
- We have sometimes promised to our investor that we would do things without actually doing them later (Reverse Coded) (IM-1.15)
- Complete honesty does not always pay when dealing with our investor (Reverse Coded) (IM-1.16)
- Sometimes we present facts to our investor in such a way that we look better than we actually are (Reverse Coded) (IM-1.17)
- On occasion, we have to misrepresent our situation to our investor in order to protect our interests (Reverse Coded) (IM-1.18)
- Our investor is not always truthful with us (Reverse Coded) (IM-1.19)
- Sometimes we have to exaggerate our needs in order to get what we really need from our investor (Reverse Coded) (IM-1.20)
- Our investor is flexible in response to requests for changes. (IM-1.21)
- When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms. (IM-1.22)
- When unexpected events occur, our investor is open to modifying prior agreements (IM-1.23)
- When our investor has any information that might be helpful to us, they provide it (IM-1.24)
- Exchange of information with our investor takes place frequently and informally (IM-1.25)
- Our investor provides proprietary information if it can help us. (IM-1.26)

- Our investor and we keep each other informed about events or changes that may affect each other. (IM-1.27)
- In most aspects of our relationship our investor and we are jointly responsible for getting things done (IM-1.28)
- Problems that arise are treated by our investor as joint rather than individual responsibilities (IM-1.29)
- Our investor does not mind owing us favours (IM-1.30)
- Our investor shares responsibility for making sure that the relationship works for both of us (IM-1.31)
- Our investor does not make demands that might be damaging to us (IM-1.32)
- Our investor restrains the use of power in attempting to get their way (IM-1.33)

Items IM-1.29 to IM-1.33 were not used in the analysis. They were included in the survey for possible future use in the event that a dyadic data set (i.e. both management and investor) can be developed. Although the inter-item and inter-variable correlations support the theorized continuum between cooperation and opportunism, for the purpose of analyzing hypotheses 1-4, the scale was split apart to ensure clear distinction between the cooperation and opportunism constructs. As described earlier, I have defined cooperation as joint action for mutual benefit, whereas opportunism is the pursuit of self-interest with guile. The critical distinctions are between the pursuit of self-interest rather than mutual interest and, in the case of opportunism, the use of covert and deceptive behavior rather than willing accommodation (Williamson, 1991; Wathne & Heide, 2000).

The inter-item correlations are shown in Table 3.18.

**Table 3.18: Correlation Matrix for Cooperative Behavior**

| | Survey Items | IM-1.12 | IM-1.21 | IM-1.22 | IM-1.23 | IM-1.24 | IM-1.25 | IM-1.26 | IM-1.27 | IM-1.28 |
|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | We always provided our investor with a completely truthful picture of our business - IM-1.12 | 1 | | | | | | | | |
| | Our investor is flexible in response to requests for changes - IM-1.21 | .200 | 1 | | | | | | | |
| | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .163 | .551 | 1 | | | | | | |
| | When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .126 | .704 | .710 | 1 | | | | | |
| | When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .578 | .397 | .238 | .187 | 1 | | | | |
| | Exchange of information with our investor takes place frequently and informally - IM-1.25 | .310 | .367 | .260 | .122 | .641 | 1 | | | |
| | Our investor provides proprietary information if it can help us - IM-1.26 | .292 | .343 | .284 | .242 | .627 | .279 | 1 | | |
| | Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .639 | .560 | .426 | .543 | .636 | .382 | .550 | 1 | |
| | In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | .106 | .329 | .169 | .289 | .108 | .420 | .032 | .264 | 1 |

**Table 3.18: Correlation Matrix for Cooperative Behavior (Cont.)**

| | Survey Items | IM-1.12 | IM-1.21 | IM-1.22 | IM-1.23 | IM-1.24 | IM-1.25 | IM-1.26 | IM-1.27 | IM-1.28 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sig. (1-tailed) | We always provided our investor with a completely truthful picture of our business - IM-1.12 | | | | | | | | | |
| | Our investor is flexible in response to requests for changes - IM-1.21 | .080 | | | | | | | | |
| | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .126 | .000 | | | | | | | |
| | When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .189 | .000 | .000 | | | | | | |
| | When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .000 | .002 | .046 | .094 | | | | | |
| | Exchange of information with our investor takes place frequently and informally - IM-1.25 | .014 | .004 | .033 | .197 | .000 | | | | |
| | Our investor provides proprietary information if it can help us - IM-1.26 | .019 | .007 | .022 | .044 | .000 | .024 | | | |
| | Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .000 | .000 | .001 | .000 | .000 | .003 | .000 | | |
| | In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | .229 | .009 | .118 | .020 | .225 | .001 | .411 | .031 | |

The factor analysis of items IM-1.12 and IM-1.21 to IM-1.28 yielded a KMO measure of .689 and a Bartlett's test of sphericity with a $p$ value of 0.000 (Table 3.19).

**Table 3.19: KMO and Bartlett's Test for Cooperative Behavior**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .689 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 230.328 |
| | df | 36 |
| | Sig. | .000 |

In the attempt to extract 3 factors, no local minimum was found after 25 iterations. This may have been due to the sample size and the number of items in the scale.

### Opportunistic Behavior

The correlation matrix of items 2-9, which are worded to focus on opportunistic behavior, is shown in table 3.20.

## Table 3.20: Correlation Matrix for Opportunistic Behavior

| | Survey Items | IM-1.13 | IM-1.14 | IM-1.15 | IM-1.16 | IM-1.17 | IM-1.18 | IM-1.19 | IM-1.20 |
|---|---|---|---|---|---|---|---|---|---|
| Correlation | We feel that it is OK to do anything within our means that will help us further our own interests - IM-1.13 | 1 | | | | | | | |
| | In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need - IM-1.14 | .070 | 1 | | | | | | |
| | We have sometimes promised to our investor that we would do things without actually doing them later - IM-1.15 | .031 | .446 | 1 | | | | | |
| | Complete honesty does not always pay when dealing with our investor - IM-1.16 | -.165 | .107 | .142 | 1 | | | | |
| | Sometimes we present facts to our investor in such a way that we look better than we actually are - IM-1.17 | .238 | .357 | .332 | .438 | 1 | | | |
| | On occasion, we have to misrepresent our situation to our investor in order to protect our interests - IM-1.18 | .309 | .220 | .309 | .381 | .589 | 1 | | |
| | Our investor is not always truthful with us - IM-1.19 | -.054 | .407 | .010 | .573 | .259 | .228 | 1 | |
| | Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20 | -.026 | .430 | .364 | .587 | .663 | .552 | .589 | 1 |
| Sig. (1-tailed) | We feel that it is OK to do anything within our means that will help us further our own interests – IM-1.13 | | | | | | | | |
| | In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need - IM-1.14 | .310 | | | | | | | |
| | We have sometimes promised to our investor that we would do things without actually doing them later - IM-1.15 | .415 | .000 | | | | | | |
| | Complete honesty does not always pay when dealing with our investor - IM-1.16 | .121 | .226 | .158 | | | | | |
| | Sometimes we present facts to our investor in such a way that we look better than we actually are - IM-1.17 | .045 | .005 | .008 | .001 | | | | |
| | On occasion, we have to misrepresent our situation to our investor in order to protect our interests - IM-1.18 | .013 | .059 | .013 | .003 | .000 | | | |
| | Our investor is not always truthful with us - IM-1.19 | .353 | .001 | .472 | .000 | .032 | .052 | | |
| | Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20 | .426 | .001 | .004 | .000 | .000 | .000 | .000 | |

The factor analysis yielded a KMO measure of .645 and a *p* value of 0.000 in Bartlett's test of sphericity (Table 3.20)

**Table 3.21: KMO and Bartlett's Test for Opportunistic Behavior**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .645 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 157.553 |
| | *df* | 28 |
| | Sig. | .000 |

The 3 factor model reflected a slight distinction between truthfulness (e.g. complete honesty does not always pay when dealing with our investor), instrumental opportunistic behavior (e.g. sometimes we have to alter the facts slightly in order to get what we need) and self-protection (e.g. on occasion, we have to misrepresent our situation in order to protect our interests). The relatively low correlations between the scale items also suggest that opportunism has several dimensions and additional field work may be required to further refine the scale for this context in future research. (Tables 3.22 and 3.23).

**Table 3.22: Total Variance Explained for Opportunistic Behavior**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.374 | 42.174 | 42.174 | 1.753 | 21.914 | 21.914 |
| 2 | 1.401 | 17.517 | 59.691 | 1.839 | 22.983 | 44.898 |
| 3 | 1.087 | 13.586 | 73.277 | 1.272 | 15.894 | 60.792 |
| 4 | .838 | 10.477 | 83.754 | | | |
| 5 | .459 | 5.743 | 89.496 | | | |
| 6 | .391 | 4.891 | 94.387 | | | |
| 7 | .284 | 3.552 | 97.940 | | | |
| 8 | .165 | 2.060 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

**Table 3.23: Factor Matrix for Opportunistic Behavior**

| Survey Items | Factor | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| We feel that it is OK to do anything within our means that will help us further our own interests - IM-1.13 | .070 | -.068 | .218 |
| In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need - IM-1.14 | .999 | -.006 | -.001 |
| We have sometimes promised to our investor that we would do things without actually doing them later - IM-1.15 | .446 | -.065 | .393 |
| Complete honesty does not always pay when dealing with our investor - IM-1.16 | .111 | .710 | .209 |
| Sometimes we present facts to our investor in such a way that we look better than we actually are - IM-1.17 | .360 | .353 | .663 |
| On occasion, we have to misrepresent our situation to our investor in order to protect our interests - IM-1.18 | .222 | .348 | .583 |
| Our investor is not always truthful with us - IM-1.19 | .412 | .822 | -.267 |
| Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20 | .435 | .636 | .419 |

Extraction Method: Maximum Likelihood.

## Cooperative and Opportunistic Behavior

Inter-item correlations for items measuring both cooperative and opportunistic behavior are shown in the correlation matrix on the following four pages (Table 3.24).

## Table 3.24: Correlation Matrix for Combined Measure of Cooperative and Opportunistic Behavior

| | | IM-1.12 | IM-1.13® | IM-1.14® | IM-1.15® | IM-1.16® | IM-1.17® | IM-1.18® | IM-1.19® |
|---|---|---|---|---|---|---|---|---|---|
| Correlation | We always provided our investor with a completely truthful picture of our business - IM-1.12 | 1 | | | | | | | |
| | We feel that it is OK to do anything within our means that will help us further our own interests - IM-1.13® | .365 | 1 | | | | | | |
| | In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need - IM-1.14® | .272 | .065 | 1 | | | | | |
| | We have sometimes promised to our investor that we would do things without actually doing them later - IM-1.15® | .461 | .013 | .445 | 1 | | | | |
| | Complete honesty does not always pay when dealing with our investor - IM-1.16® | .372 | -.189 | .101 | .124 | 1 | | | |
| | Sometimes we present facts to our investor in such a way that we look better than we actually are - IM-1.17® | .346 | .220 | .355 | .317 | .423 | 1 | | |
| | On occasion, we have to misrepresent our situation to our investor in order to protect our interests - IM-1.18® | .574 | .303 | .217 | .303 | .374 | .587 | 1 | |
| | Our investor is not always truthful with us - IM-1.19® | .207 | -.089 | .409 | -.023 | .559 | .227 | .217 | 1 |
| | Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20® | .457 | -.052 | .430 | .349 | .575 | .652 | .548 | .572 |
| | Our investor is flexible in response to requests for changes - IM-1.21 | .200 | .230 | .425 | .173 | .371 | .311 | .261 | .521 |
| | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .163 | .125 | .272 | .216 | .406 | .366 | .481 | .494 |
| | When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .126 | .063 | .353 | .136 | .457 | .410 | .387 | .515 |
| | When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .578 | .196 | .201 | .185 | .361 | .091 | .249 | .421 |
| | Exchange of information with our investor takes place frequently and informally - IM-1.25 | .310 | .284 | .056 | .078 | .214 | .070 | .096 | .232 |
| | Our investor provides proprietary information if it can help us - IM-1.26 | .292 | .295 | .193 | .235 | .074 | .186 | .156 | .331 |
| | Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .639 | .308 | .272 | .177 | .523 | .331 | .514 | .460 |
| | In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | .106 | .239 | .075 | .053 | .189 | -.001 | -.031 | .090 |

® - Reverse Coded

**Table 3.24: Correlation Matrix for Combined Measure of Cooperative and Opportunistic Behavior (Cont.)**

| | | IM-1.20® | IM-1.21 | IM-1.22 | IM-1.23 | IM-1.24 | IM-1.25 | IM-1.26 | IM-1.27 | IM-1.28 |
|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20® | 1 | | | | | | | | |
| | Our investor is flexible in response to requests for changes - IM-1.21 | .421 | 1 | | | | | | | |
| | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .603 | .551 | 1 | | | | | | |
| | When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .575 | .704 | .710 | 1 | | | | | |
| | When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .401 | .397 | .238 | .187 | 1 | | | | |
| | Exchange of information with our investor takes place frequently and informally - IM-1.25 | .184 | .367 | .260 | .122 | .641 | 1 | | | |
| | Our investor provides proprietary information if it can help us - IM-1.26 | .311 | .343 | .284 | .242 | .627 | .279 | 1 | | |
| | Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .450 | .560 | .426 | .543 | .636 | .382 | .550 | 1 | |
| | In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | -.084 | .329 | .169 | .289 | .108 | .420 | .032 | .264 | 1 |

® - Reverse Coded

## Table 3.24: Correlation Matrix for Combined Measures of Cooperative and Opportunistic Behavior (Cont.)

| | | IM-1.12 | IM-1.13® | IM-1.14® | IM-1.15® | IM-1.16® | IM-1.17® | IM-1.18® | IM-1.19® |
|---|---|---|---|---|---|---|---|---|---|
| Sig. (1-tailed) | We always provided our investor with a completely truthful picture of our business - IM-1.12 | | | | | | | | |
| | We feel that it is OK to do anything within our means that will help us further our own interests - IM-1.13® | .004 | | | | | | | |
| | In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need - IM-1.14® | .027 | .325 | | | | | | |
| | We have sometimes promised to our investor that we would do things without actually doing them later - IM-1.15® | .000 | .463 | .001 | | | | | |
| | Complete honesty does not always pay when dealing with our investor - IM-1.16® | .004 | .092 | .240 | .192 | | | | |
| | Sometimes we present facts to our investor in such a way that we look better than we actually are - IM-1.17® | .006 | .060 | .005 | .012 | .001 | | | |
| | On occasion, we have to misrepresent our situation to our investor in order to protect our interests - IM-1.18® | .000 | .015 | .063 | .015 | .003 | .000 | | |
| | Our investor is not always truthful with us - IM-1.19® | .072 | .267 | .001 | .437 | .000 | .055 | .063 | |
| | Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20® | .000 | .359 | .001 | .006 | .000 | .000 | .000 | .000 |
| | Our investor is flexible in response to requests for changes - IM-1.21 | .080 | .053 | .001 | .112 | .004 | .013 | .032 | .000 |
| | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .126 | .190 | .027 | .064 | .002 | .004 | .000 | .000 |
| | When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .189 | .329 | .006 | .171 | .000 | .001 | .003 | .000 |
| | When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .000 | .084 | .078 | .097 | .005 | .263 | .039 | .001 |
| | Exchange of information with our investor takes place frequently and informally - IM-1.25 | .014 | .022 | .349 | .292 | .066 | .313 | .251 | .051 |
| | Our investor provides proprietary information if it can help us - IM-1.26 | .019 | .018 | .088 | .048 | .302 | .096 | .137 | .009 |
| | Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .000 | .014 | .027 | .107 | .000 | .009 | .000 | .000 |
| | In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | .229 | .045 | .300 | .355 | .093 | .498 | .414 | .265 |

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**Table 3.24: Correlation Matrix for Combined Measures of Cooperative and Opportunistic Behavior (Cont.)**

| | | IM-1.20® | IM-1.21 | IM-1.22 | IM-1.23 | IM-1.24 | IM-1.25 | IM-1.26 | IM-1.27 | IM-1.28 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sig. (1-tailed) | Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20® | | | | | | | | | |
| | Our investor is flexible in response to requests for changes - IM-1.21 | .001 | | | | | | | | |
| | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .000 | .000 | | | | | | | |
| | When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .000 | .000 | .000 | | | | | | |
| | When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .002 | .002 | .046 | .094 | | | | | |
| | Exchange of information with our investor takes place frequently and informally - IM-1.25 | .098 | .004 | .033 | .197 | .000 | | | | |
| | Our investor provides proprietary information if it can help us - IM-1.26 | .013 | .007 | .022 | .044 | .000 | .024 | | | |
| | Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .000 | .000 | .001 | .000 | .000 | .003 | .000 | | |
| | In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | .280 | .009 | .118 | .020 | .225 | .001 | .411 | .031 | |

® - Reverse Coded

The factor analysis for the scale items representing both cooperation and opportunism yielded a KMO measure of 0.645 and a p value of 0.000 on Bartlett's test of sphericity (Table 3.25).

**Table 3.25: KMO and Bartlett's Test for Combined Measures of Cooperative and Opportunistic Behavior**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .656 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 519.272 |
| | df | 136 |
| | Sig. | .000 |

The 6 factor model explained 79% of the variance. While the number of factors suggests the multiple dimensions underlying both cooperation and opportunism, the number of items in relation to the sample size makes more specific interpretation inadvisable (Tables 3.26 and 3.27).

**Table 3.26: Total Variance Explained for Combined Measures of Cooperative and Opportunistic Behavior**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 6.219 | 36.583 | 36.583 | 4.839 | 28.465 | 28.465 |
| 2 | 2.020 | 11.885 | 48.468 | 1.116 | 6.567 | 35.032 |
| 3 | 1.744 | 10.259 | 58.727 | 1.505 | 8.855 | 43.887 |
| 4 | 1.329 | 7.816 | 66.543 | 1.477 | 8.688 | 52.575 |
| 5 | 1.166 | 6.858 | 73.401 | 1.435 | 8.439 | 61.014 |
| 6 | 1.030 | 6.057 | 79.458 | 1.295 | 7.616 | 68.630 |
| 7 | .689 | 4.054 | 83.511 | | | |
| 8 | .646 | 3.802 | 87.314 | | | |
| 9 | .540 | 3.174 | 90.488 | | | |
| 10 | .403 | 2.373 | 92.861 | | | |
| 11 | .303 | 1.782 | 94.643 | | | |
| 12 | .255 | 1.502 | 96.145 | | | |
| 13 | .204 | 1.200 | 97.346 | | | |
| 14 | .162 | .956 | 98.302 | | | |
| 15 | .136 | .803 | 99.104 | | | |
| 16 | .093 | .547 | 99.651 | | | |
| 17 | .059 | .349 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

## Table 3.27: Factor Matrix for Combined Measures of Cooperative and Opportunistic Behavior

| Survey Items | Factor | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| We always provided our investor with a completely truthful picture of our business - IM-1.12 | .604 | | | | | .561 |
| We feel that it is OK to do anything within our means that will help us further our own interests - IM-1.13® | | | | | | .596 |
| In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need - IM-1.14® | .516 | .839 | | | | |
| We have sometimes promised to our investor that we would do things without actually doing them later - IM-1.15® | | | | | | |
| Complete honesty does not always pay when dealing with our investor - IM-1.16® | .743 | -.438 | .505 | | | |
| Sometimes we present facts to our investor in such a way that we look better than we actually are - IM-1.17® | | | | .467 | | |
| On occasion, we have to misrepresent our situation to our investor in order to protect our interests - IM-1.18® | .409 | | | .458 | | .462 |
| Our investor is not always truthful with us - IM-1.19® | .661 | | | | | |
| Sometimes we have to exaggerate our needs in order to get what we really need from our investor - IM-1.20® | .671 | | | .653 | | |
| Our investor is flexible in response to requests for changes - IM-1.21 | .559 | | | | .577 | |
| When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms - IM-1.22 | .439 | | | .489 | .408 | |
| When unexpected events occur, our investor is open to modifying prior agreements - IM-1.23 | .465 | . | | .412 | .591 | |
| When our investor has any information that might be helpful to us, they provide it - IM-1.24 | .802 | | -.581 | | | |
| Exchange of information with our investor takes place frequently and informally - IM-1.25 | .479 | | -.408 | | | |
| Our investor provides proprietary information if it can help us - IM-1.26 | .451 | . | -.469 | | | |
| Our investor and we keep each other informed about events or changes that may affect each other - IM-1.27 | .713 | - | | | | .402 |
| In most aspects of our relationship our investor and we are jointly responsible for getting things done - IM-1.28 | | | | | .423 | |

Extraction Method: Maximum Likelihood.
Values under 0.4 were suppressed.

**Perceived Positive and Negative Interdependence**

Perceived interdependence of goals was measured using scales for positive and negative interdependence that were developed in previous studies conducted in North America (Alper, et al, 1998, Tjosvold, Andrews, & Struthers, 1991), and are based on Deutsch's (1949a, 1949b, 1973) theory of cooperation. Items measuring perceived positive interdependence emphasize mutual goals, shared rewards, and common tasks. Those measuring perceived negative interdependence emphasize incompatible goals and rewards.

Perception of negative interdependence and perception of positive interdependence were each measured using 3 items. In order to test the ability of the scales to capture the dichotomous relationship between perceptions of negative and positive interdependence, I correlated the two scales, with reverse coding of the items for perception of negative interdependence. High negative correlation (-0.645) between items worded for high scores associated with perception of positive interdependence and items worded for high scores associated with perception of negative interdependence, indicated that the two perceptions are strongly divergent, but not mutually exclusive.

The specific statements measuring the perception of negative goal interdependence, for which the respondents were asked to express their agreement or disagreement (on an 7 point Likert scale with 1 being strongly disagree and 7 being strongly agree), were as follows:

- I believe that some of our investor's overall goals and objectives are NOT compatible with our goals and objectives (IM-2.1)
- If our investor achieves their overall goals and objectives, it will be at the expense of us achieving some of our goals and objectives. (IM-2.5)
- If we achieve our overall goals and objectives it will be at the expense of our investor achieving some of their goals and objectives. (IM-2.6)

Cronbach Alpha was 6.93. The inter-item correlations are shown in Table 3.28.

**Table 3.28: Correlation Matrix for Perceived Negative Interdependence**

| | Survey Items | IM-2.1 | IM-2.5 | IM-2.6 |
|---|---|---|---|---|
| Correlation | I believe that some of our investor's overall goals and objectives are NOT compatible with our goals and objectives - IM-2.1 | 1 | | |
| | If our investor achieves their overall goals and objectives it will be at the expense of us achieving some of our goals and objectives - IM-2.5 | .727 | 1 | |
| | If we achieve our overall goals and objectives, it will be at the expense of some of our investor's goals and objectives - IM-2.6 | .327 | .229 | 1 |
| Sig. (1-tailed) | I believe that some of our investor's overall goals and objectives are NOT compatible with our goals and objectives - IM-2.1 | | | |
| | If our investor achieves their overall goals and objectives it will be at the expense of us achieving some of our goals and objectives - IM-2.5 | .000 | | |
| | If we achieve our overall goals and objectives, it will be at the expense of some of our investor's goals and objectives - IM-2.6 | .009 | .051 | |

The factor analysis yielded a KMO measure of 0.551 which is at the margin of acceptability and a $p$ value of 0.000 for the Bartlett's test of sphericity (Table 3.29). The one factor model (Table 3.30 and 3.31) explains 63% of the variance.

**Table 3.29: KMO and Bartlett's Test for Perceived Negative Interdependence**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .551 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 42.599 |
| | df | 3 |
| | Sig. | .000 |

**Table 3.30: Total Variance Explained for Perceived Negative Interdependence**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 1.900 | 63.329 | 63.329 | 1.636 | 54.521 | 54.521 |
| 2 | .835 | 27.837 | 91.167 | | | |
| 3 | .265 | 8.833 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

**Table 3.31: Factor Matrix for Perceived Negative Interdependence**

| Survey Items | Factor 1 |
|---|---|
| I believe that some of our investor's overall goals and objectives are NOT compatible with our goals and objectives - IM-2.1 | .999 |
| If our investor achieves their overall goals and objectives it will be at the expense of us achieving some of our goals and objectives - IM-2.5 | .728 |
| If we achieve our overall goals and objectives, it will be at the expense of some of our investor's goals and objectives - IM-2.6 | .327 |

Extraction Method: Maximum Likelihood.

The specific statements relating to perception of positive goal interdependence, for which the respondents were asked to express their agreement or disagreement (on an 7 point Likert scale with 1 being strongly disagree and 7 being strongly agree), were as follows:

- I believe that, if we achieve our overall goals and objectives, our investors involvement will be a significant factor (IM-2.4).
- I believe that, if we are successful in achieving our overall goals and objectives, then our investor will be successful in achieving their goals and objectives (IM-2.7.

- I believe that our investor and we share common goals and objectives (IM-2.9).

Cronbach Alpha was .697. The inter-item correlations are shown in Table 3.31.

**Table 3.32: Correlation Matrix for Perceived Positive Interdependence**

| | Survey Items | IM-2.4 | IM-2.7 | IM-2.9 |
|---|---|---|---|---|
| Correlation | I believe that, if we achieve our overall goals and objectives, our investor's involvement will be a significant factor - IM-2.4 | 1 | | |
| | I believe that, if we are successful in achieving our overall goals and objectives, then our investor will be successful in achieving their overall goals and objectives - IM-2.7 | .169 | 1 | |
| | I believe that our investor and we share common overall goals and objectives - IM-2.9 | .517 | .287 | 1 |
| Sig. (1-tailed) | I believe that, if we achieve our overall goals and objectives, our investor's involvement will be a significant factor - IM-2.4 | | | |
| | I believe that, if we are successful in achieving our overall goals and objectives, then our investor will be successful in achieving their overall goals and objectives - IM-2.7 | .116 | | |
| | I believe that our investor and we share common overall goals and objectives - IM-2.9 | .000 | .020 | |

As with the measure for perception of negative goal interdependence, the factor analysis yielded a low KMO measure of 0.555, which is at the margin of acceptability, and a *p* value of 0.000 for the Bartlett's test of sphericity (Table 3.33). The one factor model explains 56% of the variance (Tables 3.34 and 3.35).

**Table 3.33: KMO and Bartlett's Test for Perceived Positive Interdependence**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .555 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 19.558 |
| | df | 3 |
| | Sig. | .000 |

**Table 3.34: Total Variance Explained for Perceived Positive Interdependence**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 1.673 | 55.763 | 55.763 | 1.275 | 42.513 | 42.513 |
| 2 | .860 | 28.678 | 84.441 | | | |
| 3 | .467 | 15.559 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

**Table 3.35: Factor Matrix for Perceived Positive Interdependence**

| Survey Items | Factor 1 |
|---|---|
| I believe that, if we achieve our overall goals and objectives, our investor's involvement will be a significant factor - IM-2.4 | .553 |
| I believe that, if we are successful in achieving our overall goals and objectives, then our investor will be successful in achieving their overall goals and objectives - IM-2.7 | .306 |
| I believe that our investor and we share common overall goals and objectives - IM-2.9 | .936 |

Extraction Method: Maximum Likelihood.

The measurement of control variables is described in the following section.

## Control Variables

*Interdependence* (INT) was measured using two questions indicating the degree to which achievement of goals required combined efforts. Respondents completed a 7 point Likert scale to indicate the extent to which they agreed with each statement, with 1 indicating strong disagreement and 7 indicating strong agreement.

- I believe that we need the skills and efforts of our investor to achieve our overall goals and objectives (IM-2.2)
- I believe that our investor needs our skills and effort to meet their overall goals and objectives (IM-2.3)

The mean of the results on this measure was 5.4 and the standard deviation was 0.7 indicating overall agreement with the previous statements. However, the mean for question 1 was 4.2, whereas the mean for question 2 was 6.0, reflecting managements' view that their investor was more dependent on them to achieve their goals and objectives than vice versa. True interdependence would be indicated by high scores on both questions. A limitation of this study is the use of management's perceptions for this measure, since pre-study interviews with both venture capitalists and CEOs suggested that management underestimates the value of the venture capitalist's contribution. The Cronbach Alpha was -.-31 due to a negative average covariance among the items. This measure was excluded from the analysis, as it appears to have been interpreted by the respondents as a mutually exclusive pair of statements. A more reliable response may have been obtained with a single, more direct statement regarding mutual interdependence.

*Propensity for Opportunistic Behavior* (POB) was measured using a single item:

- We feel that it is OK to do anything within our means that will help us further our own interests (IM-1.13)

This question had very low factor loadings when combined with questions dealing with opportunism and low correlation with other scale items. It was intended to surface predisposition to opportunistic behavior but, judging from its low mean (2.5 on the 1-7 Likert Scale) and low standard deviation (1.6), it may have been too direct to capture this. It was not used in the analysis.

*Technological Complexity* (TECH) was measured using 9 items based on Steensma & Corley's (2000) categories of uniqueness, inimitability, uncertainty, and dynamism. Uniqueness captures the extent to which the technology differs from current technology and is reflected in items IM-3.3, IM-3.4, and IM-3.9; imitability captures the difficulty of technical imitation and is reflected in items IM-3.1 and IM 3.2; uncertainty captures the risk inherent in the technology and is reflected in items IM-3.5 and IM-3.6; dynamism captures the rate of change in the technology field and is reflected in items IM-3.7 and IM-3.8. Cronbach Alpha is .859. This captured both the level of technology employed as well as its importance to the success of the business

- It is difficult for our competitors to duplicate our technology (IM-3.1)
- We have a substantial lead over our competitors with respect to our technology (IM-3.2)
- Our technology is different from that employed by our competitors (IM-3.3)
- We are the only company in our industry employing this technology (IM-3.4)
- There is some risk that the technology will not perform as expected. (IM-3.5)
- There are some important properties of the technology that we do not yet fully understand (IM-3.6)
- Our technology is undergoing significant change and development (IM-3.7)
- Advances in our technology are occurring frequently (IM-3.8)
- Our technology is difficult to explain to the average person (IM-3.9)

The inter-item correlation matrix is shown in Table 3.36.

**Table 3.36: Correlation Matrix for Technological Complexity**

| | Survey Items | IM-3.1 | IM-3.2 | IM-3.3 | IM-3.4 | IM-3.5 | IM-3.6 | IM-3.7 | IM-3.8 | IM-3.9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | It is difficult for our competitors to duplicate our technology - IM-3.1 | 1 | | | | | | | | |
| | We have a substantial lead over our competitors with respect to our technology - IM-3.2 | .688 | 1 | | | | | | | |
| | Our technology is different from that employed by our competitors - IM-3.3 | .552 | .740 | 1 | | | | | | |
| | We are the only company in our industry employing this technology - IM-3.4 | .514 | .642 | .711 | 1 | | | | | |
| | There is some risk that the technology will not perform as expected - IM-3.5 | .583 | .441 | .342 | .396 | 1 | | | | |
| | There are some important properties of the technology that we do not yet fully understand - IM-3.6 | .583 | .520 | .445 | .406 | .793 | 1 | | | |
| | Our technology is undergoing significant change and development - IM-3.7 | .314 | .184 | .246 | .083 | .272 | .378 | 1 | | |
| | Advances in our technology are occurring frequently - IM-3.8 | .455 | .296 | .445 | .252 | .420 | .614 | .571 | 1 | |
| | Our technology is difficult to explain to the average person - IM-3.9 | .544 | .430 | .507 | .326 | .358 | .527 | .641 | .584 | 1 |

**Table 3.36: Correlation Matrix for Technological Complexity (Cont.)**

| | Survey Items | IM-3.1 | IM-3.2 | IM-3.3 | IM-3.4 | IM-3.5 | IM-3.6 | IM-3.7 | IM-3.8 | IM-3.9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sig. (1-tailed) | It is difficult for our competitors to duplicate our technology - IM-3.1 | | | | | | | | | |
| | We have a substantial lead over our competitors with respect to our technology - IM-3.2 | .000 | | | | | | | | |
| | Our technology is different from that employed by our competitors - IM-3.3 | .000 | .000 | | | | | | | |
| | We are the only company in our industry employing this technology - IM-3.4 | .000 | .000 | .000 | | | | | | |
| | There is some risk that the technology will not perform as expected - IM-3.5 | .000 | .001 | .007 | .002 | | | | | |
| | There are some important properties of the technology that we do not yet fully understand - IM-3.6 | .000 | .000 | .000 | .001 | .000 | | | | |
| | Our technology is undergoing significant change and development - IM-3.7 | .012 | .096 | .039 | .280 | .025 | .003 | | | |
| | Advances in our technology are occurring frequently - IM-3.8 | .000 | .016 | .000 | .036 | .001 | .000 | .000 | | |
| | Our technology is difficult to explain to the average person - IM-3.9 | .000 | .001 | .000 | .009 | .005 | .000 | .000 | .000 | |

The factor analysis yielded a KMO measure of .790 and a p value of 0.000 on Bartlett's test of Sphericity (Table 3.37). The 2 factor model explained 69% of the variance (Tables 3.38 and 3.38) and appeared to separate the rate of change in technology (Factor 2) from the level of complexity (Factor 1).

## Table 3.37: KMO and Bartlett's Test for Technological Complexity

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .790 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 276.008 |
| | df | 36 |
| | Sig. | .000 |

## Table 3.38: Total Variance Explained for Technological Complexity

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.787 | 53.188 | 53.188 | 4.370 | 48.551 | 48.551 |
| 2 | 1.452 | 16.134 | 69.322 | 1.104 | 12.266 | 60.817 |
| 3 | .938 | 10.427 | 79.749 | | | |
| 4 | .502 | 5.583 | 85.332 | | | |
| 5 | .391 | 4.341 | 89.673 | | | |
| 6 | .307 | 3.416 | 93.089 | | | |
| 7 | .306 | 3.398 | 96.486 | | | |
| 8 | .192 | 2.128 | 98.615 | | | |
| 9 | .125 | 1.385 | 100.000 | | | |

Extraction Method: Maximum Likelihood.

## Table 3.39: Factor Matrix for Technological Complexity

| Survey Items | Factor | |
|---|---|---|
| | 1 | 2 |
| It is difficult for our competitors to duplicate our technology - IM-3.1 | .785 | -.031 |
| We have a substantial lead over our competitors with respect to our technology - IM-3.2 | .810 | -.354 |
| Our technology is different from that employed by our competitors - IM-3.3 | .789 | -.241 |
| We are the only company in our industry employing this technology - IM-3.4 | .679 | -.375 |
| There is some risk that the technology will not perform as expected - IM-3.5 | .630 | .130 |
| There are some important properties of the technology that we do not yet fully understand - IM-3.6 | .738 | .232 |
| Our technology is undergoing significant change and development - IM-3.7 | .457 | .580 |
| Advances in our technology are occurring frequently - IM-3.8 | .625 | .485 |
| Our technology is difficult to explain to the average person - IM-3.9 | .687 | .370 |

Extraction Method: Maximum Likelihood.

*Board Involvement* (BDGOV) was measured using two items to identify the level of venture capital firm involvement in board governance. One aspect addressed the strategic advisory role and the other the monitoring and control role (Westphal, 1999).

- Board Governance - Oversight (i.e. monitoring performance and ensuring accounting and other control systems are in place) (IM-5.1)
- Board Governance - Strategic (i.e. providing strategic advice and counsel) (IM-5.2)

Cronbach Alpha was .733. The high mean of 5.3 (with 1 indicating no involvement and 7 indicating high involvement) suggests that the majority of venture capital firms in the sample are involved in their portfolio companies through active board representation. Also, the results are skewed, as the raw data indicates only 5 companies in the sample for which the venture capital firm is less than moderate board involvement (i.e. 1 or 2 on either or both of the two modes of involvement), compared to 38 companies in which the board involvement was at the high end of the scale (i.e. 6 or 7 on either or both of the two modes of involvement).

*Operational Involvement* (BOPS) was measured using 6 items to identify the level of involvement of the venture capital firm in the company's operational matters. The areas of operational involvement were as follows:

- Business operations – R&D (IM-5.3)
- Business operations – Manufacturing (IM-5.4)
- Business operations – Sales and Marketing (IM-5.5)
- Business operations – Finance (IM-5.6)

- Business operations – Human Resources (IM-5.7)
- Business operations – Information systems (IM-5.8)

Cronbach Alpha was .729. As anticipated, there was very little overall indication of venture capital involvement in operations. The means and standard deviations for the scale items are shown in Table 3.40.

**Table 3.40: Descriptive Statistics for Operational Involvement**

| Survey Items | Mean | Std. Deviation |
|---|---|---|
| Business operations – R&D - IM-5.3 | 2.27 | 1.358 |
| Business operations – Manufacturing – IM-5.4 | 1.67 | 1.013 |
| Business operations – Sales and Marketing - IM-5.5 | 2.88 | 1.492 |
| Business operations - Finance - IM-5.6 | 3.45 | 1.701 |
| Business operations – Human Resources - IM-5.7 | 2.49 | 1.377 |
| Business operations – Information systems - IM-5.8 | 1.69 | .990 |

The area with the highest level of involvement was finance. The mean of 3.45 (on a scale where 1 indicates no involvement and 7 indicated high involvement) is indicative of a moderate level of involvement. Other areas predominantly received none or 'less than moderate' venture capital firm involvement.

*Performance Satisfaction* (PERFSAT) was measured using two items to respectively measure the level of investor (INVSAT) and management (MANSAT) satisfaction with the performance of the business.

- Our company's performance meets the expectations of our investor (IM-6.1)
- Our company's performance meets the expectations of the company's management team (IM-6.2)

Overall, investor satisfaction with performance was slightly lower than management satisfaction (mean of 4.3 versus 4.6). The range within the sample was from 1 (strongly disagree) to 7 (strongly agree).

*Relationship satisfaction* (RELSAT) – one item was used to measure the level of management's satisfaction with the working relationship with their venture capital firm:

- I am satisfied with the working relationship between the senior management team and our investor(s) (IM-6.3)

The mean of responses was 4.5; the standard deviation was 1.7; and the range of responses was from 1 to 7 with one meaning strong disagreement with the statement and 7 indicating strong agreement with the statement. I correlated this measure with the amount of difference between management and investor satisfaction in performance to see how important disagreement on performance was to the satisfaction with the working relationship. The correlation coefficient of -0.25 (i.e. the greater the difference in satisfaction in performance the lower the satisfaction with the working relationship) suggests that there is a relationship but that there are other significant factors.

*Management Equity* (MANEQ) was measured using a nominal scale to measure management's level of ownership. The scale was:

1. 50% or more
2. Equal to or above 25% but less than 50%
3. Equal to or above 10% but less than 25%
4. Greater than 0% but less than 10%
5. None

As noted earlier, 21% of respondents reported 25-50% management ownership; 27% reported 10-25% ownership; 31% reported 0-10% ownership; and 21% reported no management ownership. None reported more than 50% management ownership.

*Development Stage* (DEVST) was measured using a nominal scale to determine the venture's stage of development and is based on the organizational lifecycle literature (Phelps, Adams, & Bessant, J, 2007). The three stages used were:

1. Pre-Commercial/Early Development – including one or more of:
   a. None or very limited revenue
   b. Primary focus on R&D
   c. Developing process, product or service

2. Commercial/Market acceptance – including one or more of
   a. Growing revenue from initial commercial activity
   b. Focus on gaining market acceptance
   c. Active sales and marketing efforts

3. Consolidation/Formalization – including one or more of
   a. Established market presence
   b. Focus on sustaining growth
   c. Building organizational capability

**Data Analysis Plan**

The theoretical model was tested using a series of linear regressions. Ideally, I would have used path analysis or structural equation modeling. However, the sample

size was insufficient to obtain meaningful results from these methods. Initial regressions were conducted to test the relationship between perceived alignment and differences in managerial time horizons and cooperative and opportunistic behavior. Once the basic relationship had been tested, I conducted further regressions, including the control variables (Perceived Interdependence, Technological Complexity, Board Governance Involvement, Operational Involvement, Stage of Development, Investor Satisfaction with Performance, Management Satisfaction with Performance, Management Satisfaction with Working Relationship, and Equity Controlled by Management).

Mediation of perception of goal interdependence was tested using the four steps suggested by Baron and Kenny (1986) and Judd and Kenny (1981):

1. Show correlation between independent variable (i.e., Perceptions of Alignment or Difference in Managerial Time Horizon) and dependent variable (i.e., Cooperative or Opportunistic Behavior) using a regression equation with Cooperative or Opportunistic behavior as the criterion and perceived alignment or differences in managerial time horizon as the predictor.

2. Show correlation between the independent variable and the mediator (i.e. perceptions of positive or negative goal interdependence) in a regression equation with perception of positive or negative goal interdependence as the predictor and perceived alignment or difference in managerial time horizon as the criterion.

3. Show that the mediator (perception of positive interdependence) affects the dependent variable (cooperative behavior) with cooperative behavior as the predictor and perceived difference in managerial time horizon and cooperative behavior as the predictors.

4. Complete mediation is indicted by zero effect of perceived difference in managerial time horizons on cooperative behavior in the step 3 regression.

The analysis was conducted using both the separate scales for perceptions of managerial time horizon (i.e. alignment and differences) and cooperative behavior and opportunistic behavior. The combined scales which treat both independent (i.e. the range of perceived difference to alignment of managerial time horizon) and dependent variables (i.e. the range of opportunism to cooperation) as continuums were also used.

In the following chapter I describe the results of my analysis.

# CHAPTER FOUR

## Results

The purpose of the study is to test the relationship between perceptual differences in managerial time horizon and the level of cooperation and opportunism between venture capitalists and the management of their portfolio companies. Based on Deutsch's Theory of Cooperation (Deutsch, 1949, 1973, 2001), I also hypothesized that perceptions of positive or negative interdependence would mediate this relationship. In this chapter, I present the results of the analysis.

I first provide a description of the variables used in the study, and follow with a series of regression analyses that test the relationship between perceived alignment and differences in managerial time horizons and cooperative and opportunistic behavior. I then proceed to test for the mediation by perceived positive and negative interdependence in those relationships.

## Managerial Time Horizon and Behavior

Tables 4.1 and 4.2 present multiple regression results for models predicting that perceived differences in managerial time horizon would be associated with opportunistic behavior (H3) and that perceived alignment of managerial time horizons would be associated with cooperative behavior (H4).

**Table 4.1a: Model Summary for Perceived Difference in Managerial Time Horizons on Opportunistic Behavior (H3)**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .613(a) | .375 | .363 | .91185 |

a Predictors: (Constant), Perceived Difference in Managerial Time Horizons

**Table 4.1b: ANOVA for Perceived Difference in Managerial Time Horizons on Opportunistic Behavior (H3)**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 24.973 | 1 | 24.973 | 30.035 | .000(a) |
| | Residual | 41.573 | 50 | .831 | | |
| | Total | 66.546 | 51 | | | |

a Predictors: (Constant), Perceived Difference in Managerial Time Horizons
Dependent Variable: Opportunistic Behavior

**Table 4.1c: Coefficients for Perceived Difference in Managerial Time Horizons on Opportunistic Behavior (H3)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | .673 | .414 | | 1.624 | .111 | -.159 | 1.505 |
| | Perceived Difference in Managerial Time Horizons | .479 | .087 | .613 | 5.480 | .000 | .304 | .655 |

Dependent Variable: Opportunistic Behavior

**Table 4.1d: Model Summary for Perceived Difference in Managerial Time Horizons and Cooperative Behavior (H3)**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .593(a) | .352 | .339 | .80871 |

Predictors: (Constant), Perceived Difference in Managerial Time Horizons

**Table 4.1e: ANOVA for Perceived Difference in Managerial Time Horizons on Cooperative Behavior (H3)**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 17.729 | 1 | 17.729 | 27.108 | .000(a) |
| | Residual | 32.701 | 50 | .654 | | |
| | Total | 50.430 | 51 | | | |

a Predictors: (Constant), Perceived Difference in Managerial Time Horizons
Dependent Variable: Cooperative Behavior

**Table 4.1f: Coefficients for Perceived Difference in Managerial Time Horizons on Cooperative Behavior (H3)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 6.303 | .367 | | 17.152 | .000 | 5.565 | 7.041 |
| | Perceived Difference in Managerial Time Horizons | -.404 | .078 | -.593 | -5.207 | .000 | -.560 | -.248 |

Dependent Variable: Cooperative Behavior

H3 was supported. As perceived differences in managerial time horizon increases, opportunistic behavior increases ($b$ =0.613, $p < .01$) and cooperative behavior decreases ($b$ =-0.593, $p < .01$).

**Table 4.2a: Model Summary for Perceived Alignment of Managerial Time Horizons on Cooperative Behavior (H4)**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .758(a) | .575 | .567 | .65461 |

a Predictors: (Constant), Perceived Alignment of Managerial Time Horizons

**Table 4.2b: ANOVA for Perceived Alignment of Managerial Time Horizons on Cooperative Behavior**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29.004 | 1 | 29.004 | 67.685 | .000(a) |
| | Residual | 21.426 | 50 | .429 | | |
| | Total | 50.430 | 51 | | | |

a Predictors: (Constant), Perceived Alignment of Managerial Time Horizons
Dependent Variable: Opportunistic Behavior

**Table 4.2c: Coefficients for Perceived Alignment of Managerial Time Horizons on Cooperative Behavior (H4)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 1.226 | .406 | | 3.022 | .004 | .411 | 2.042 |
| | Perceived Alignment of Managerial Time Horizons | .677 | .082 | .758 | 8.227 | .000 | .512 | .842 |

Dependent Variable: Cooperative Behavior

**Table 4.2d: Model Summary for Perceived Alignment of Managerial Time Horizons on Opportunistic Behavior (H4)**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .575(a) | .330 | .317 | .94410 |

a Predictors: (Constant), Perceived Alignment of Managerial Time Horizons

**Table 4.2e: ANOVA for Perceived Alignment of Managerial Time Horizons on Opportunistic Behavior (H4)**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 21.980 | 1 | 21.980 | 24.661 | .000(a) |
| | Residual | 44.566 | 50 | .891 | | |
| | Total | 66.546 | 51 | | | |

a Predictors: (Constant), Perceived Alignment of Managerial Time Horizons
Dependent Variable: Opportunistic Behavior

**Table 4.2f: Coefficients for Perceived Alignment of Managerial Time Horizons on Opportunistic Behavior (H4)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 5.668 | .585 | | 9.684 | .000 | 4.493 | 6.844 |
| | Perceived Alignment of Managerial Time Horizons | -.589 | .119 | -.575 | -4.966 | .000 | -.828 | -.351 |

Dependent Variable: Opportunistic Behavior

H4 was similarly supported. As perceived alignment in managerial time horizons increases, cooperative behavior increases ($b$ =0.758, $p < .01$) and cooperative behavior decreases ($b$ =-0.575, $p < .01$). This confirms my hypothesis that alignment

in managerial time horizon is positively associated with cooperative behavior and negatively associated with opportunistic behavior. My analysis suggests that opportunistic behavior is less likely to occur when the managerial time horizons are aligned and more likely to occur when there are differences. Cooperative behavior is more likely to occur when there is alignment in managerial time horizon and less likely then there are differences. Since causal arguments cannot be supported with this cross sectional data, the recursive arguments might also be made.

**Supplementary Analysis**

As a supplementary analysis, I also conducted a linear regression of variables derived from the combined scales for perceived alignment and differences in managerial time horizon against the combined scales of cooperative behavior and opportunistic behavior, treating each pair as a continuum rather than as separate variables. The survey items for opportunistic behavior and differences in managerial time horizon were reverse-coded. For the combined variable perceptions of managerial time horizon, a low value represents perceived differences in managerial time horizons and a high value represents perceived alignment in managerial time horizons. For the combined variable cooperative/opportunistic behavior, a high value represents cooperative behavior and a low value represents opportunistic behavior. Consistent with hypothesis 3 and 4, I expected that, using these variables, perceptions of managerial time horizon would be positively associated with cooperative/opportunistic behavior. Results displayed in Table 4.5 support this and provide further confirmation of hypotheses H3 and H4.

**Table 4.3a: Model Summary for Perceptions of Managerial Time Horizon on Cooperative/Opportunistic Behavior (Integrated Scales) (H3, H4)**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .807(a) | .652 | .645 | .55676 |

a Predictors: (Constant), Perceptions of Managerial Time Horizon

**Table 4.3b: ANOVA for Perceptions of Managerial Time Horizon on Cooperative/Opportunistic Behavior (Integrated Scales) (H3, H4)**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29.021 | 1 | 29.021 | 93.621 | .000(a) |
| | Residual | 15.499 | 50 | .310 | | |
| | Total | 44.520 | 51 | | | |

a Predictors: (Constant), Perceptions of Managerial Time Horizon
Dependent Variable: Cooperative/Opportunistic Behavior (Integrated Scales)

**Table 4.3c: Coefficients for Perceptions of Managerial Time Horizon on Cooperative/Opportunistic Behavior (Integrated Scales) (H3, H4)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 1.790 | .311 | | 5.750 | .000 | 1.165 | 2.416 |
| | Perceptions of Managerial Time Horizon | .674 | .070 | .807 | 9.676 | .000 | .534 | .814 |

Dependent Variable: Cooperative/Opportunistic Behavior (Integrated Scales)

As perception of managerial horizons increases towards greater alignment, cooperative/opportunistic behavior increases towards greater cooperative behavior ($b$ =0.807, $p < .01$). This analysis supports hypotheses H3 and H4 with differences in management time horizons and alignment of managerial time horizon being reliable predictors of opportunistic and cooperative behavior, respectively.

**Inclusion of Control Variables**

To examine the impact of opportunity, incentive and propensity for opportunistic behavior on the relationship between perceptions of managerial time horizons and cooperative/opportunistic behavior, I regressed managerial time horizons, perceived interdependence, technological complexity, board governance involvement, operational involvement, stage of development, and investor satisfaction with performance, management satisfaction with performance, management satisfaction with working relationship, and equity controlled by management on cooperative/opportunistic behavior. Table 4.4 shows the results of this regression.

**Table 4.4a: Model Summary of Perceptions of Managerial Time Horizons, Perceived Interdependence, Technological Complexity, Board Governance Involvement, Operational Involvement, Stage of Development, Investor Satisfaction with Performance, Management Satisfaction with Performance, Management Satisfaction with Working Relationship, and Equity Controlled by Management on Cooperative/Opportunistic Behavior**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .807(a) | .652 | .645 | .55676 |
| 2 | .866(b) | .750 | .740 | .47643 |
| 3 | .883(c) | .780 | .766 | .45197 |

a Predictors: (Constant), Perceptions of Managerial Time Horizons
b Predictors: (Constant), Perceptions of Managerial Time Horizons, Management Satisfaction with Working Relationship
c Predictors: (Constant), Perceptions of Managerial Time Horizons, Management Satisfaction with Working Relationship, Stage of Development(Pre-Commercial)

**Table 4.4b: ANOVA of Perceptions of Managerial Time Horizons, Perceived Interdependence, Technological Complexity, Board Governance Involvement, Operational Involvement, Stage of Development, Investor Satisfaction with Performance, Management Satisfaction with Performance, Management Satisfaction with Working Relationship, and Equity Controlled by Management on Cooperative/Opportunistic Behavior**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29.021 | 1 | 29.021 | 93.621 | .000(a) |
| | Residual | 15.499 | 50 | .310 | | |
| | Total | 44.520 | 51 | | | |
| 2 | Regression | 33.398 | 2 | 16.699 | 73.569 | .000(b) |
| | Residual | 11.122 | 49 | .227 | | |
| | Total | 44.520 | 51 | | | |
| 3 | Regression | 34.715 | 3 | 11.572 | 56.646 | .000(c) |
| | Residual | 9.805 | 48 | .204 | | |
| | Total | 44.520 | 51 | | | |

a Predictors: (Constant), Perceptions of Managerial Time Horizons
b Predictors: (Constant), Perceptions of Managerial Time Horizons, Management Satisfaction with Working Relationship
c Predictors: (Constant), Perceptions of Managerial Time Horizons, Management Satisfaction with Working Relationship, Stage of Development(Pre-Commercial)
Dependent Variable: Cooperative/Opportunistic Behavior

**Table 4.4c: Coefficients of Perceptions of Managerial Time Horizons, Perceived Interdependence, Technological Complexity, Board Governance Involvement, Operational Involvement, Stage of Development, Investor Satisfaction with Performance, Management Satisfaction with Performance, Management Satisfaction with Working Relationship, and Equity Controlled by Management on Cooperative/Opportunistic Behavior**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | Tolerance | VIF | B | Std. Error |
| 1 | (Constant) | 1.790 | .311 | | 5.750 | .000 | 1.165 | 2.416 | | |
| | Coefficients of Perceptions of Managerial Time Horizons | .674 | .070 | .807 | 9.676 | .000 | .534 | .814 | 1.000 | 1.000 |
| 2 | (Constant) | 1.881 | .267 | | 7.038 | .000 | 1.344 | 2.418 | | |
| | Coefficients of Perceptions of Managerial Time Horizons | .403 | .086 | .482 | 4.685 | .000 | .230 | .575 | .482 | 2.077 |
| | Management Satisfaction with Working Relationship | .239 | .054 | .452 | 4.391 | .000 | .130 | .349 | .482 | 2.077 |
| 3 | (Constant) | 2.035 | .261 | | 7.806 | .000 | 1.511 | 2.559 | | |
| | Coefficients of Perceptions of Managerial Time Horizons | .382 | .082 | .458 | 4.666 | .000 | .217 | .547 | .477 | 2.097 |
| | Management Satisfaction with Working Relationship | .241 | .052 | .455 | 4.662 | .000 | .137 | .345 | .481 | 2.077 |
| | Stage of Development (Pre-Commercial) | -.424 | .167 | -.173 | -2.539 | .014 | -.760 | -.088 | .984 | 1.017 |

Dependent Variable: Cooperative/Opportunistic Behavior

In my earlier analysis, the regression of perception of managerial time horizons on cooperative/opportunistic behavior produced an R Square of .652 and standardized beta coefficient for of .807 ($p < .01$). Inclusion of the control variables (perceived interdependence, technological complexity, board governance involvement,

operational involvement, stage of development, investor satisfaction with performance, management satisfaction with performance, management satisfaction with working relationship, and equity controlled by management ) increased the R Square to .808. However, the only two control variables that were significant were management satisfaction with the working relationship and the pre-commercial stage of development. The overall satisfaction with the working relationship had a standardized beta coefficient of .380 ($p < .01$). It is not surprising that high levels of cooperation are associated with satisfaction regarding the working relationship, but the analysis is not sufficient to indicate whether satisfaction with the relationship is a predictor or is an outcome of cooperative behavior. The dummy variable which identified companies in the pre-commercial stage of development was significant at the .05 level, with a standardized beta coefficient of -.307, suggesting that cooperative behavior is less likely in very early stages of a company's development.

In order to test whether perceptions of positive or negative interdependence mediated the relationships between perceptions of differences in managerial time horizons and opportunistic behavior and between alignment in managerial time horizons and cooperative behavior, I followed the steps suggested by Baron and Kenny (1986).

Tables 4.5 and 4.6 present the regression results for models predicting that perceived alignment and differences in managerial time horizons would be positively associated with perception of positive and negative goal interdependence respectively.

**Table 4.5a: Model Summary for Perceived Alignment in Managerial Time Horizons and Perceived Positive Interdependence**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .729(a) | .531 | .522 | .77513 |

a Predictors: (Constant), Perceived Alignment in Managerial Time Horizons

**Table 4.5b: ANOVA for Perceived Alignment in Managerial Time Horizons and Perceived Positive Interdependence**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 34.050 | 1 | 34.050 | 56.673 | .000(a) |
| | Residual | 30.041 | 50 | .601 | | |
| | Total | 64.092 | 51 | | | |

a Predictors: (Constant), Perceived Alignment in Managerial Time Horizons
Dependent Variable: Perceived Positive Interdependence

**Table 4.5c: Correlations for Perceived Alignment in Managerial Time Horizons and Perceived Positive Interdependence**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 1.288 | .481 | | 2.680 | .010 | .323 | 2.253 |
| | Perceived Alignment in Managerial Time Horizons | .733 | .097 | .729 | 7.528 | .000 | .538 | .929 |

Dependent Variable: Perceived Positive Interdependence

Hypothesis H1, which predicted an association between perceived alignment of managerial time horizons and perception of positive goal interdependence, was supported. As perceived alignment of in managerial time horizons increases, perceived positive interdependence increases ($b$ =0.729, $p < .01$).

**Table 4.6a: Model Summary for Perceived Differences in Managerial Time Horizons and Perceived Negative Interdependence**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .665(a) | .443 | .432 | 1.00325 |

a Predictors: (Constant), Perceived Differences in Managerial Time Horizons

**Table 4.6b: ANOVA for Perceived Differences in Managerial Time Horizons and Perceived Negative Interdependence**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 40.006 | 1 | 40.006 | 39.747 | .000(a) |
| | Residual | 50.325 | 50 | 1.007 | | |
| | Total | 90.331 | 51 | | | |

a Predictors: (Constant), Perceived Differences in Managerial Time Horizons
Dependent Variable: Perceived Negative Interdependence

**Table 4.6c: Model Summary for Perceived Differences in Managerial Time Horizons and Perceived Negative Interdependence**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 1.257 | .456 | | 2.757 | .008 | .341 | 2.172 |
| | Perceived Differences in Managerial Time Horizons | .607 | .096 | .665 | 6.305 | .000 | .414 | .800 |

Dependent Variable: Perceived Negative Interdependence

Hypothesis H2, which predicted an association between perceived differences in managerial time horizon and perceptions of negative interdependence, was also supported. As perceptions of differences in managerial time horizon increase, perceived negative interdependence increases ($b$ =0.665, $p < .01$). These results confirm my theoretical argument that alignment in managerial time horizons is positively associated with perception of positive goal interdependence and that differences in managerial time horizon are positively associated with perceptions of negative goal interdependence.

For the test of mediation, it is not sufficient to correlate the mediator with the dependent variable, since both the mediator and the dependent variable may be correlated, because they are both caused by the independent variable (Baron & Kenny,

1986). The independent variables perceived alignment or differences in managerial time horizons must, therefore, be controlled for establishing the effect of the perception of positive and negative interdependence on cooperative and opportunistic behavior. Table 4.7 presents the results for H5, which predicts that perception of negative interdependence is associated with opportunistic behavior.

**Table 4.7a: Model Summary of Perceived Differences in Managerial Time Horizons and Perceptions of Negative Interdependence on Opportunistic Behavior**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .681(a) | .464 | .453 | .84476 |
| 2 | .714(b) | .509 | .489 | .81626 |

a Predictors: (Constant), Perceptions of Negative Interdependence
b Predictors: (Constant), Perceptions of Negative Interdependence, Perceived Differences in Managerial Time Horizons

**Table 4.7b: ANOVA of Perceived Differences in Managerial Time Horizons and Perceptions of Negative Interdependence on Opportunistic Behavior**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 30.865 | 1 | 30.865 | 43.251 | .000(a) |
| | Residual | 35.681 | 50 | .714 | | |
| | Total | 66.546 | 51 | | | |
| 2 | Regression | 33.899 | 2 | 16.949 | 25.439 | .000(b) |
| | Residual | 32.647 | 49 | .666 | | |
| | Total | 66.546 | 51 | | | |

a Predictors: (Constant), Perceptions of Negative Interdependence
b Predictors: (Constant), Perceptions of Negative Interdependence, Perceived Differences in Managerial Time Horizons
Dependent Variable: Opportunistic Behavior

**Table 4.7c: Coefficients of Perceived Differences in Managerial Time Horizons and Perceptions of Negative Interdependence on Opportunistic Behavior**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | .501 | .374 | | 1.340 | .186 | -.250 | 1.252 |
| | Perceptions of Negative Interdependence | .585 | .089 | .681 | 6.577 | .000 | .406 | .763 |
| 2 | (Constant) | .144 | .398 | | .361 | .720 | -.656 | .944 |
| | Perceptions of Negative Interdependence | .421 | .115 | .491 | 3.660 | .001 | .190 | .652 |
| | Perceived Differences in Managerial Time Horizons | .224 | .105 | .286 | 2.134 | .038 | .013 | .435 |

Dependent Variable: Opportunistic Behavior

**Table 4.7d: Excluded Variables of Perceived Differences in Managerial Time Horizons and Perceptions of Negative Interdependence on Opportunistic Behavior**

| Model | | Beta In | t | Sig. | Partial Correlation | Collinearity Statistics |
|---|---|---|---|---|---|---|
| 1 | Perceived Differences in Managerial Time Horizons | .286(a) | 2.134 | .038 | .292 | .557 |

a Predictors in the Model: (Constant), Perceptions of Negative Interdependence
Dependent Variable: Opportunistic Behavior

H5 is supported. As perceptions of negative interdependence increases, opportunistic behavior increases ($b$ =0.491, $p < .01$). H7 is partially supported. In the regression of perceived differences in managerial time horizon on opportunistic behavior (Table 4.9), the beta coefficient for perceived differences in managerial time horizons was 0.613 ($p < .01$). In the regression of perceived negative interdependence on opportunistic behavior, controlling for perceived differences in managerial time horizons the beta coefficient for perceived differences in managerial time horizons is reduced and less significant ($b$ =0.286, $p < .05$). The reduction in the beta coefficient

for perceived differences in managerial time horizons and the higher beta coefficient for perceived negative interdependence ($b$ =0.491, $p < .01$) suggests partial mediation.

Table 4.8 presents the results for the regression of perceived positive interdependence on cooperative behavior controlling for perceived alignment in managerial time horizons.

**Table 4.8a: Model Summary for Perceived Alignment in Managerial Time Horizons and Perceptions of Positive Interdependence on Cooperative Behavior**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .758(a) | .575 | .567 | .65461 |
| 2 | .800(b) | .640 | .626 | .60844 |

a Predictors: (Constant), Perceived Alignment in Managerial Time Horizons
b Predictors: (Constant), Perceived Alignment in Managerial Time Horizons, Perceptions of Positive Interdependence

**Table 4.8b: ANOVA for Perceived Alignment in Managerial Time Horizons and Perceptions of Positive Interdependence on Cooperative Behavior**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29.004 | 1 | 29.004 | 67.685 | .000(a) |
| | Residual | 21.426 | 50 | .429 | | |
| | Total | 50.430 | 51 | | | |
| 2 | Regression | 32.290 | 2 | 16.145 | 43.612 | .000(b) |
| | Residual | 18.140 | 49 | .370 | | |
| | Total | 50.430 | 51 | | | |

a Predictors: (Constant), Perceived Alignment in Managerial Time Horizons
b Predictors: (Constant), Perceived Alignment in Managerial Time Horizons, Perceptions of Positive Interdependence
Dependent Variable: Cooperative Behavior

**Table 4.8c: Coefficients for Perceived Alignment in Managerial Time Horizons and Perceptions of Positive Interdependence on Cooperative Behavior**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | Lower Bound | Upper Bound | B | Std. Error |
| 1 | (Constant) | 1.226 | .406 | | 3.022 | .004 | .411 | 2.042 |
| | Perceived Alignment in Managerial Time Horizons | .677 | .082 | .758 | 8.227 | .000 | .512 | .842 |
| 2 | (Constant) | .800 | .403 | | 1.984 | .053 | -.010 | 1.611 |
| | Perceived Alignment in Managerial Time Horizons | .434 | .112 | .487 | 3.888 | .000 | .210 | .659 |
| | Perceptions of Positive Interdependence | .331 | .111 | .373 | 2.979 | .004 | .108 | .554 |

Dependent Variable: Cooperative Behavior

**Table 4.8d: Excluded Variables for Perceived Alignment in Managerial Time Horizons and Perceptions of Positive Interdependence on Cooperative Behavior**

| Model | | Beta In | t | Sig. | Partial Correlation | Collinearity Statistics |
|---|---|---|---|---|---|---|
| 1 | Perceptions of Positive Interdependence | .373(a) | 2.979 | .004 | .392 | .469 |

a Predictors in the Model: (Constant), Perceived Alignment in Managerial Time Horizons
Dependent Variable: Cooperative Behavior

Hypothesis H6 predicts an association between perceptions of positive interdependence and cooperative behavior. This hypothesis is supported. As perceptions of positive interdependence increases, cooperative behavior increases ($b$ =0.373, $p < .01$). H7, however, is not supported as the beta coefficient for perceived alignment in managerial time horizons ($b$ =0.487, $p < .01$) is greater than that for perceived positive interdependence ($b$ =0.373, $p < .01$). This is not sufficient to support hypotheses H7 and provide empirical confirmation of Deutsch's (1949) theory of cooperation. Full mediation would require that the coefficient for perceived alignment in managerial time horizon be reduced to zero. Partial mediation would require perception of positive goal interdependence to have had a significantly greater

standardized beta coefficient than perceived alignment in managerial time horizon (Baron & Kenny, 1986). Even though the beta coefficient for perceived alignment in managerial time horizons is reduced from 0.758 ($p < .01$), when regressed alone against cooperative behavior, it still has a stronger association than perceived positive interdependence when both are regressed against cooperative behavior.

**Summary**

Consistent with my theoretical model, my analysis confirms several key relationships. Firstly, perceived alignment and differences in managerial time horizons are associated with cooperative and opportunistic behavior. Perceived alignment in managerial time horizons are positively associated with cooperative behavior and negatively associated with opportunistic behavior. Perceived differences in managerial time horizons are positively associated with opportunistic behavior and negatively associated with cooperative behavior. The psychological mechanism through which this takes effect is not as clearly demonstrated. The relationship between perceived differences in managerial time horizon and opportunistic behavior is partly mediated by perceived negative interdependence. However, there is not enough evidence to support the mediating role of perceptions of positive goal interdependence in the relationship between alignment in managerial time horizon and cooperative behavior. These results are discussed in the following chapter.

# CHAPTER FIVE

## Discussion and Implications for Future Research

In this chapter, I draw conclusions from the research findings, examine the limitations of the study, and make suggestions for future research. I conclude with implications for new ventures and venture capital companies.

## Major Findings and Conclusions

This research makes four major contributions: confirmation that differences in managerial time horizon are a real phenomena in the relationship between venture capital firms and the management of their portfolio companies; the introduction of opportunism to the research on cooperation; demonstration of the association between perceived alignment and differences in managerial time horizons and cooperative and opportunistic behavior; and the testing of Deutsch's Theory of cooperation (Deutsch, 1949, 1973, 2001) in a field setting. Each is discussed in the following section

First, the research reported in this study provides empirical support for the anecdotally observed and theoretically supported perspective that differences in managerial time horizon exist between venture capital firms and their portfolio companies. These differences are, however, not universal. The number of new venture company respondents that reported differences in managerial time horizon with their venture capital investors was almost equivalent to the number of companies that reported shared managerial time horizons. In the latter case, it is not clear whether the two parties are aligned around the timing of the venture capital firm's exit or around the longer term development of the company. Results lead me to believe

that there are examples of each. There was a very low correlation (-0.078) between the amount of equity held by management and managerial time horizon. This ambiguous relationship may be explained by noting that, while a high level of management equity may act as an incentive to maximize company value at the time of the venture capital firm exit, it also may provide a greater ability for management to steer decisions favoring the longer term development of the company.

Second, this study contributes to research on cooperation by contrasting cooperative with opportunistic behavior, rather than conflict or competition with which cooperation is more usually paired. I used game theoretic arguments (i.e., win-win versus win-lose) to suggest that opportunism was a clearer antithesis of cooperation than other comparators. In particular, it contributes to the research on cooperation and opportunism in relations between venture capital firms and the management of their portfolio companies, by examining the role of managerial time horizons in joint decision making and priority setting. I have shown that divergence of managerial time horizons is an important factor in the working relationship between interdependent parties, such as venture capital firms and the management of their portfolio companies. A particular strength of this research is the attention to control variables, which are an essential expression of the contextual conditions within which the theories are tested. By conducting this study in a field setting, I was able to test existing measurement instruments in a complex environment and gain insights into data collection and measurement instruments that will be valuable in future research.

Third and most importantly, another finding of this research is the clear association between perceived differences in managerial time horizon and cooperative behavior. I theorized that cooperation would be strongly associated with perceived alignment in managerial time horizon and that opportunism would be strongly associated with differences in managerial time horizon. Both perspectives were supported, although causal arguments can not be established with the cross-sectional data used within this study. It is logical to argue that perceived differences in managerial time horizon precede behavior that circumvents the undesired consequences of this misalignment. However, one can also argue that the willful and secretive exercise of managements own priorities may cause the venture capital firm to attempt to enforce its own priorities and therefore cause management's perceptions of time horizon difference.

Fourth, this study set out to test Deutsch's theory of cooperation (Deutsch, 1949, 1973) in a field setting. A key element of this theory is that perceptions of positive or negative goal interdependence mediate the relation between perceptions of alignment and differences in managerial time horizons and cooperative and opportunistic behavior. The data suggested that perceptions of negative interdependence partially mediated the positive relation between perceptions of differences in managerial time horizons and opportunistic behavior, but was unable to provide support for the mediating role of perceived positive goal interdependence in the relationship between perceived alignment of managerial time horizon and cooperative behavior. One of the challenges of testing theory in a field setting is the

need to statistically control for, rather than experimentally eliminate, other potentially influential variables. Unfortunately the power of statistical tests declines with the number of variables included in the study and with decreases in the sample size. I suspect that the expected result of the mediation tests was confounded by the size of the sample and the complexity of the context rather than the theory. In the relationship between venture capital firms and the management of their portfolio companies, there are likely to be several key factors that influence management's judgment as to whether the relationship is positively and negatively interdependent. There is the opportunity in future research to develop a more comprehensive view of the additional factors that influence this judgment. The analysis suggests that, in practice, positive and negative interdependence are not mutually exclusive, further supporting the importance of factors additional to managerial time horizon, as some of these might support positive interdependence while others support negative interdependence.

**Limitations of the Research**

There are several limitations which should be kept in mind when interpreting this research study. First, it is important to realize that there are several restrictions on the extent to which results can be generalized. I have described the many unique aspects of the context in which this research was conducted, with the objective of providing researchers with the information required to transfer my findings into other contexts. As noted, the influence of managerial time horizon and perceived differences in their management time horizons on decision making can be considered

in a wide variety of contexts. For example, I have mentioned the "short-termism" of public companies in the United States, the decision horizons associated with management tiers in organizations, and the temporal perspectives of joint venture partners. When applying my findings to these and other contexts, it is important to make detailed comparisons between the context being used and the salient characteristics of the venture capital firm/portfolio company relationship. For example, the managerial time horizons of two parties in a joint venture may be more reflective of their respective organizations strategy and culture than timing of exit. When transferring my research findings to other situations, researchers should carefully evaluate the comparability of those settings and participants (Fried & Rousseau, 2001). Meanings ascribed to particular observations and the constructs they are presumed to reflect might shift in different settings, roles, or cultural frames of reference. Providing evidence of commonalities and differences in the contexts enhances generalizability and provides a greater appreciation of the research limitations and how the findings may be applied in other settings (Locke, 1986).

Second, limitations in the data introduce influences the generalizability of this research. Although I produced Kaiser-Meyer-Olkin (KMO) measures and conducted Bartlett's test of sphericity on the variables to ensure sufficient sample size for the power of the selected statistical tests, the size of the sample is smaller than had been hoped for. This reflects the very real problem in collecting data in this domain. Respondents were time constrained, having multiple responsibilities and demanding work lives. Several of those contacted expressed skepticism about the relevance of

academic research and each commented that the general idiosyncrasy of new ventures and the uniqueness of their own situation precluded generalizability. This may have contributed to the low response rate. Although I was interested in management's perceptions and management's behavior, using one-sided data in a dyadic relationship limited the ability to obtain confirmatory data and an alternative perspective. Future research should include development of sample frames and design of instruments for collecting data from both management and their venture capital investors. While it would have been desirable to have done so for this study, the majority of the CEO's contacted prior to the survey were reluctant to disclose the name and contact information of their primary investor. I concluded that there might be less than forthright responses to the more sensitive questions if there was any suspicion that that their responses would be communicated to their investors. Because I employed a private database, which only provided contact information of the companies and not for the venture capital firms, I was required to obtain the venture capital information through the companies. With the benefit of hindsight, it may have been more effective and less time consuming to have started with the venture capital firms and had them identify their portfolio companies. This would facilitate the creation of dyadic samples, provide more accurate and updated company information, and establish additional contacts for longitudinal research. Since my theoretical model was based on behavioral response to managements' perceptions of managerial time horizon and goal interdependence, the one-sided collection of data did not present a problem. However the collection of data from the venture capital firm's perspective would have provided additional insights and opportunities for analysis.

I also limited the study by requiring respondents to participate via written and online surveys. I designed the survey to be completed in less than 10 minutes and indicated to the respondents that it would require 10-15 minutes to complete. I selected this timing, based on feedback from interviews with potential respondents prior to the study. Interviewees indicated that an expectation of more than 15 minutes would discourage their participation and suggested that they would be more likely to complete the survey if the actual time to completion was less than that indicated. Follow up with a six respondents as well as off-line tests with several colleagues indicated that it took between 8-10 minutes to complete the survey. Using a survey as a collection tool limited the study in two respects: first, by limiting the amount of information that could be collected to that which could be shared in an 8-10 minute time interval, I was constrained in the number of measured variables and in the complexity of the scales used to represent them; second, the responses may have been influenced by recent events and not accurately portray the state of the relationship between the CEOs and their venture capital firms. For example, I had no control over the conditions under which the survey was completed and there was the risk that responses were influenced by the respondent's current mood or recent interactions with their investor. Third, the data was cross-sectional. Causal arguments may be hypothesized but cannot be empirically tested.

Fourth, the study was limited by the absence of field-tested instruments for several of the variables in the study (most notably, for opportunistic behavior and managerial time horizons). The low Cronbach's Alpha for the measures of perception

of interdependence suggests that there is room for improvement in the scales. The uncertain effectiveness of the measure in consistently capturing this variable may have contributed to the inability of the study to detect the mediating relationship between perceived alignment in managerial time horizons and cooperative behavior. The factor analyses of the scales for cooperation, opportunism, and managerial time horizon indicate that there may be opportunity for refinement of the scales to better capture the underlying dimensions of each construct. The small sample size may have also contributed to the ambiguous results for both the effect of control variables and the mediating role of perceptions of positive and negative interdependence. The development of questions to capture opportunistic behavior was particularly challenging and not entirely satisfactory since, based on several low inter-item correlations and the three factor extraction, this construct is more complex than was anticipated.

Finally, the low sample size may have contributed to the non-significance of the majority of control variables. The identification of potential control variables is an important element of the contextualization of the research and the non-significance of the control variables should not be interpreted as discounting the relevance of the context to the findings.

**Suggestions for Future Research**

As noted, this research study is a beginning and has been effective in identifying challenges, areas for improvement and principles for guiding future

research. I have several suggestions for future research. My first pertains to the use of dyadic data. Since the area of interest is the relationship between two parties, it is valuable to collect data from both groups. The identification and co-option of dyads can be facilitated by building the sample frame through initial contact with the venture capital firms, rather than the portfolio companies. By doing so, the researcher can obtain more complete information on both parties while ensuring that the information in the sample frame is complete and accurate. Extra care and attention will be needed to ensue that both parties feel assured that the data and information they provide will be held in the strictest confidence. When collecting data, care should be taken to avoid common method bias, ideally with triangulation between methods (Campbell & Fiske, 1959).

Second, I suggest conducting longitudinal rather than cross-sectional research. In order to encourage participation and candid responses, I allowed the responses to remain anonymous, thereby limiting my ability to match future data with the same respondent. While the anonymity in this study may have helped provide more forthright responses, it precluded my being able to examine downstream consequences, such as IPO performance, within the sample population. Longitudinal research will increase the value of the research to both academics and practitioners, by providing the ability to make causal arguments and examine performance implications. It will also enable integration with prior research that has successfully linked conflict types to post-investment performance (Higashide & Birley, 2002).

Third, a more detailed understanding of the salience of managerial time horizon to the various decisions that are made during a company's formative stages is required. Some decisions, such as the recruiting of key personnel or the selection of management information systems, may be significantly different depending on the time horizon within which they are made. Other decisions, such as the hiring of lower-level personnel, may not be greatly affected. Also, it is important to identify those decisions for which differences in managerial time horizon are more likely to cause significant conflict between venture capital firms and the management of their portfolio companies, because there are decisions that are independent of time horizon and other decisions that are strongly influenced by the timing of their outcomes. There is existing literature in venture capitalist's time allocation that may be helpful in distinguishing those activities that are influenced by time horizon from those that are not (Gifford, 1997). It may be necessary, however, to re-examine venture capitalist's time allocation since the significant losses experiences during the dotcom crash of the late 1990's are likely to have had an effect on surviving firms' priorities and behavior. The distinction between the two will allow more granularity as well as the ability to contribute to the body of research on decision making. Research can inform a more refined understanding of the decision-based interactions of venture capital firms and the management of their portfolio companies. One of the benefits of the more refined understanding is the ability to construct an objective and quantitative measure of managerial time horizon. Despite the previously noted methodological difficulties with difference scores (Cronbach & Furby, 1970; Johns, 1981; Edwards, 1993; Edwards & Parry, 1994; Edwards, 2001), relying on individual perceptions is also

subject to methodological challenges, as the interpretation of behavioral cues which form the basis of perceptions may vary significantly between subjects. For example, where one person may attribute a venture capital firm's priorities to favor its exit timing, another may view it as a prudent emphasis on short-term performance. While an individual's perceptions and judgments may influence their behavior, it is valuable to examine their validity.

Lastly, the positioning of opportunism as an antithesis to cooperation was supported in the data. Mixed inter-item colinearity in the scales suggests that there is a need for further refinement of the constructs and associated measures and to establish more clearly the presence of convergent and discriminant validity of the constructs (Campbell & Fiske, 1959). The factor analysis suggested several underlying dimensions of opportunistic behavior, although the nature of those dimensions is not clear. One of the challenges encountered in this study was identifying the various ways in which opportunistic behavior is specifically enacted in the context of the venture capital firm/portfolio company relationship. In order to identify these relationships, I elected to use broad statements based on the pre-study interviews with the 4 CEOs of venture capital financed companies. These statements may not have been consistently interpreted by the respondents. In future research, the accurate measure of opportunistic behavior may require the researcher to develop and test more comprehensive scales that specifically capture behaviors of opportunism in this context. The theorized continuum between cooperation and opportunism should also be further validated in the refinement of the constructs and associated measures.

This study focused on opportunistic and cooperative behavior by management. I argued that the lower power position of management provided great incentive for covert action. This argument needs to be tested with dyadic data that captures the perspectives and behaviors of both venture capital firm and the management of the portfolio company. Research that builds a catalogue of relevant behaviors by both parties that reflect cooperation and opportunism would help to develop our understanding of these constructs and provide greater opportunity to investigate the multiple factors that influence them.

**Implications for Organizations**

CEOs participated in this study because they thought doing so would result in practical and useful findings that would help them improve their effectiveness and the performance of their organizations. The primary finding of benefit to both CEOs and venture capital firms is the relevance and importance of managerial time horizon. The strong association between perceived alignment and differences in managerial time horizons and cooperative and opportunistic behavior suggests that both parties pay explicit attention to their respective time horizons. The benefit of doing so is likely to contribute towards the level of cooperation in their working relationship and in their ability to benefit from each parties experience and expertise.

There are several opportunities for managers to avoid conflict with their venture capital firm based on differing time horizons:

- *Selecting a Venture Capital Partner*: During the selection process management should develop an understanding of the venture capital firm's track record in this regard. Direct discussion with the prospective venture capital firms as well as soliciting opinion form current and prior portfolio companies should be an integral part of the *selection* and *screening* process.
- *Structuring an Agreement*: Once the partner firm is selected, when structuring the agreement between the two parties management should pay particular attention to the decision areas over which the venture capital firm wishes to maintain control.
- *Managing the relationship*: When managing the relationship on a day-to-day basis, management should consider of the implication of time horizon on key decisions. It is important to understand the trade-offs between taking a short term versus a longer term perspective on these decisions and the implications for the development of the business.

By being pro-active, there is greater opportunity to develop options that satisfy the needs of both parties, rather than create a situation that precipitates deceit and subterfuge.

It appears that the opportunity for conflict is greater in pre-commercial stage companies. This may be due to the higher level of information asymmetry between the venture capital firm and the portfolio company at this stage. When faced with a

decision partner who is less informed, it may be tempting to follow the maxim that it is easier to ask for forgiveness than permission. However, in the long term interest of an effective and satisfying working relationship, it may be more advisable to reduce information asymmetry through education and information exchange, as a better informed venture capital partner may be in a stronger position to identify ways in which it can positively contribute to the development of the business.

Managerial time horizon plays an important role in shaping decisions and is a potential source of conflict between venture capital firms and the managers of their portfolio companies. Perceived alignment and differences in managerial time horizons is strongly associated with cooperative and opportunistic behavior, and there is enough evidence to suggest that perceptions of negative interdependence are the psychological mechanism through which differences in managerial time horizons and opportunistic behavior are related. Cooperative relationships are characterized by the ready exchange of information and resources. In order to increase the benefit from the venture capital firms experience and expertise, CEOs seeking venture capital should consider the managerial time horizon of prospective venture capital firms, pay close attention to the time horizon implications for key decisions, and identify and reconcile conflicting decision preferences resulting from differences in managerial time horizon. Although other factors contribute to and detract from the success of a venture capital financed company, the attention to time horizon is likely to enable venture capital financed companies to obtain greater leverage from the experience and expertise of their venture capital financiers.

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# APPENDIX A –SURVEY

# Survey Cover Letter

This questionnaire is part of a study on cooperation between active investors in new ventures and the ventures' senior management teams. The results will be used for research and to provide feedback to participants about how they can optimize their combined efforts to increase the likelihood of venture success. The questions that follow ask you to describe your experience and perceptions regarding the interactions between your "investor", that is the individual(s) who principally represents the interests and perspective of your private equity investor(s), and "senior management", that is the executives primarily responsible for the development and implementation of your company's strategy.

You are receiving this questionnaire having previously indicated your willingness to be involved in this study. By participating, you will be contributing to research and may be helping private equity investors as well as management of new ventures that require start-up capital. You will also learn about factors that may help you in future financing partnerships. You may decide not to participate, not to answer any questions, or to withdraw at any time.

*Anonymity & Confidentiality*

The information you provide will be kept completely confidential. Under no circumstances will any of your responses be revealed to anyone other than the two principal researchers whose names appear at the bottom of this page. Please answer the question as honestly as possible. *There are no right or wrong answers.* Your forthright answers will contribute to the validity of the study and therefore to what can be gained for research and for practical application. The study involved a large number of firms and is designed to develop its findings from average responses rather than the responses of any single individual. Your responses will be combined with those of many others and only used in an aggregate form.

As a participant, you will have access to the summarized findings from this survey, but not to individual questionnaire data. If you wish to see the results of this study, a summary of the preliminary findings will be sent to you in the fall of 2007.

*Who Should Complete the Questionnaire*

You have been identified as the most senior member of the management team who is regularly in communication with the representative(s) of your private equity investors. If this is not the case, please do not complete the questionnaire. We would greatly appreciate you contacting Matthew Lynall (mlynall@ivey.uwo.ca) if you have been incorrectly identified.

*Completing the Questionnaire*

Please read each statement carefully, but don't spend too much time deciding on the answer – your first response is usually the most valid. Some questions may seem similar; this is deliberate. The questionnaire is designed so that you can complete it quickly. It should take about 10-15 minutes.

If you would like to add further information or comments, please feel free to do so at the end of the questionnaire.

When you have completed the questionnaire, please return it
using the enclosed stamped, self-addressed envelope.

## SECTION ONE –WORKING RELATIONSHIP BETWEEN MANAGEMENT AND INVESTOR

**This section addresses the working relationship between your investor and the company's senior management team. Please read each of the following statements and indicate the extent to which you agree or disagree by circling the number that best corresponds with your response. In particular, think about interactions with your investor when making important plans and decisions.**

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | STRONGLY DISAGREE | DISAGREE | DISAGREE SOMEWHAT | NEUTRAL | AGREE SOMEWHAT | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|---|---|
| 1. When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Our investor's decisions are overly influenced by the timing of their own goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Our investor and we share a common sense of priority (i.e. the order in which things should get done) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Our investor and we are equally committed to the long-term development of the company | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. When making decisions, our investor seldom looks beyond the period of their direct involvement | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. We are as committed as our investor to achieving performance objectives and milestones | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. When thinking about the future of the business, our investor and we share a common time horizon | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. We always provided our investor with a completely truthful picture of our business | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | STRONGLY DISAGREE | DISAGREE | DISAGREE SOMEWHAT | NEUTRAL | AGREE SOMEWHAT | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|---|---|
| 13. We feel that it is OK to do anything within our means that will help us further our own interests | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. We have sometimes promised to our investor that we would do things without actually doing them later | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Complete honesty does not always pay when dealing with our investor | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. Sometimes we present facts to our investor in such a way that we look better than we actually are | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. On occasion, we have to misrepresent our situation to our investor in order to protect our interests | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. Our investor is not always truthful with us | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. Sometimes we have to exaggerate our needs in order to get what we really need from our investor | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Our investor is flexible in response to requests for changes. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. When unexpected events occur, our investor is open to modifying prior agreements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. When our investor has any information that might be helpful to us, they provide it | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. Exchange of information with our investor takes place frequently and informally | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Our investor provides proprietary information if it can help us. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. Our investor and we keep each other informed about events or changes that may affect each other. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. In most aspects of our relationship our investor and we are jointly responsible for getting things done | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. Problems that arise are treated by our investor as joint rather than individual responsibilities | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | STRONGLY DISAGREE | DISAGREE | DISAGREE SOMEWHAT | NEUTRAL | AGREE SOMEWHAT | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|---|---|
| 30. Our investor does not mind owing us favours | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. Our investor shares responsibility for making sure that the relationship works for both of us | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. Our investor does not make demands that might be damaging to us | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. Our investor restrains the use of power in attempting to get their way | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## SECTION TWO – ALIGNMENT OF MANAGEMENT AND INVESTOR OBJECTIVES

This section addresses how you perceive the alignment of your investor's goals and objectives with those of your company's senior management team. Please read carefully each of the following statements and indicate the extent to which you agree or disagree by circling the number that best corresponds with your response.

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | STRONGLY DISAGREE | DISAGREE | DISAGREE SOMEWHAT | NEUTRAL | AGREE SOMEWHAT | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|---|---|
| 1. I believe that some of our investor's overall goals and objectives are NOT compatible with our goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I believe that we need the skills and efforts of our investor to achieve our overall goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I believe that our investor needs our skills and effort to meet their overall goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I believe that, if we achieve our overall goals and objectives, our investor's involvement will be a significant factor | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. If our investor achieves their overall goals and objectives it will be at the expense of us achieving some of our goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. If we achieve our overall goals and objectives, it will be at the expense of some of our investor's goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7. I believe that, if we are successful in achieving our overall goals and objectives, then our investor will be successful in achieving their overall goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I believe that if our investor and we collaborate we will be better able to achieve our respective overall goals and objectives than if we didn't collaborate | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I believe that our investor and we share common overall goals and objectives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## SECTION THREE –TECHNOLOGICAL COMPLEXITY OF PRODUCTS OR PROCESSES

This section addresses the level of technology that is employed in your company's products and/or processes. Please read carefully each of the following statements and indicate the extent to which you agree or disagree by circling the number that best corresponds with your response. Please note that technology might refer to intellectual property as well as product, organizational or process capability.

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | STRONGLY DISAGREE | DISAGREE | DISAGREE SOMEWHAT | NEUTRAL | AGREE SOMEWHAT | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|---|---|
| 1. It is difficult for our competitors to duplicate our technology | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. We have a substantial lead over our competitors with respect to our technology | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Our technology is different from that employed by our competitors | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. We are the only company in our industry employing this technology | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. There is some risk that the technology will not perform as expected. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. There are some important properties of the technology that we do not yet fully understand | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Our technology is undergoing significant change and development | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Advances in our technology are occurring frequently | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Our technology is difficult to explain to the average person | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## SECTION FOUR – CURRENT STAGE OF DEVELOPMENT OF YOUR COMPANY

This section addresses the life cycle stage of your company. Which of the following most accurately describes the current stage of development of your company? Please select one only by ticking the appropriate box.

1. ☐ Pre-Commercial/Early Development – including one or more of:
   d. None or very limited revenue
   e. Primary focus on R&D
   f. Developing process, product or service
2. ☐ Commercial/Market acceptance – including one or more of
   d. Growing revenue from initial commercial activity
   e. Focus on gaining market acceptance
   f. Active sales and marketing efforts
3. ☐ Consolidation/Formalization – including one or more of
   d. Established market presence
   e. Focus on sustaining growth
   f. Building organizational capability

## SECTION FIVE – GOVERNANCE ROLE OF YOUR INVESTOR

Thus section addresses the nature of your investor's involvement in the governance and management of the company. Please circle the appropriate number to indicate the level of involvement in each of the areas listed.

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | NO INVOLVE-MENT ↓ | | | MODERATE INVOLVE-MENT ↓ | | | HIGH INVOLVE-MENT ↓ |
|---|---|---|---|---|---|---|---|
| 1. Board Governance - Oversight (i.e. monitoring performance and ensuring accounting and other control systems are in place) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Board Governance - Strategic (i.e. providing strategic advice and counsel) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Business operations – R&D | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Business operations - Manufacturing | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Business operations – Sales and Marketing | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Business operations - Finance | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Business operations – Human Resources | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Business operations – Information systems | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## SECTION SIX – COMPANY AND WORKING RELATIONSHIP PERFORMANCE

This section addresses the overall performance of the company and your level of satisfaction with the working relationship between your investor and the company's management team. Please note that the use of the term performance may refer to whatever metric is most appropriate given the nature and stage of development of the company (i.e., meeting R&D milestones rather than revenue may be more appropriate in a pre-commercial company)

| *PLEASE CIRCLE THE APPROPRIATE NUMBER TO THE RIGHT OF EACH QUESTION* | STRONGLY DISAGREE | DISAGREE | SOMEWHAT DISAGREE | NEUTRAL | SOMEWHAT AGREE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|---|---|
| 1. Our company's performance meets the expectations of our investor | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Our company's performance meets the expectations of the company's management team | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I am satisfied with the working relationship between the senior management team and our investor(s) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## SECTION SEVEN – MANAGEMENT EQUITY POSITION

This Section addresses the level of management ownership of the company.

Please provide an estimate of the percentage of total equity owned by the senior management team by ticking the appropriate box.

1. ☐ 50% or more
2. ☐ Equal to or above 25% but less than 50%
3. ☐ Equal to or above 10% but less than 25%
4. ☐ Greater than 0% but less than 10%
5. ☐ None

# APPENDIX B – CODING OF SURVEY QUESTIONS

## Coding of Survey Questions

The following is a description of the survey items associated with each of the measured variables

**Perceived Alignment/Differences in Managerial Time Horizon (MTH)**

| | |
|---|---|
| IM-1.1 | When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) |
| IM-1.2 | Our investor's decisions are overly influenced by the timing of their own goals and objectives – Reverse Coded |
| IM-1.3 | Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) |
| IM-1.4 | Our investor and we share a common sense of priority (i.e. the order in which things should get done) |
| IM-1.5 | When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results – Reverse Coded |
| IM-1.6 | Our investor and we are equally committed to the long-term development of the company |
| IM-1.7 | Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable – Reverse Coded |
| IM-1.8 | When making decisions, our investor seldom looks beyond the period of their direct involvement – Reverse Coded |
| IM-1.9 | We are as committed as our investor to achieving performance objectives and milestones (Note: Not used in the analysis) |
| IM-1.10 | When thinking about the future of the business, our investor and we share a common time horizon |
| IM-1.11 | When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes |

**Perceived Alignment in Managerial Time Horizons (SIMMTH)**

| | |
|---|---|
| IM-1.1 | When making decisions, our investor and we usually have similar expectations regarding the timing of decision outcomes (e.g. realized results, timing of activity, achieving milestones) |
| IM-1.3 | Our investor and we share a common sense of urgency (i.e. the need to get things done within a specific timeframe) |
| IM-1.4 | Our investor and we share a common sense of priority (i.e. the order in which things should get done) |
| IM-1.6 | Our investor and we are equally committed to the long-term development of the company |
| IM-1.10 | When thinking about the future of the business, our investor and we share a common time horizon |
| IM-1.11 | When setting performance objectives and milestones our investor and we seldom disagree with respect to timing of outcomes |

**Perceived Differences in Managerial Time Horizon (DIFFMTH)**

| | |
|---|---|
| IM-1.2 | Our investor's decisions are overly influenced by the timing of their own goals and objectives |
| IM-1.5 | When making decisions, our investor tends to trade off the long-term development of the company in favor of short-term results |
| IM-1.7 | Our investor expects us to deliver results in a shorter timeframe than we think is possible or advisable |
| IM-1.8 | When making decisions, our investor seldom looks beyond the period of their direct involvement |

**Cooperative and Opportunistic Behavior (COOP/OPP)**

| | |
|---|---|
| IM-1.12 | We always provided our investor with a completely truthful picture of our business |
| IM-1.13 | We feel that it is OK to do anything within our means that will help us further our own interests |
| IM-1.14 | In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need – Reverse Coded |
| IM-1.15 | We have sometimes promised to our investor that we would do things without actually doing them later – Reverse Coded |
| IM-1.16 | Complete honesty does not always pay when dealing with our investor – Reverse Coded |
| IM-1.17 | Sometimes we present facts to our investor in such a way that we look better than we actually are – Reverse Coded |
| IM-1.18 | On occasion, we have to misrepresent our situation to our investor in order to protect our interests – Reverse Coded |
| IM-1.19 | Our investor is not always truthful with us – Reverse Coded |
| IM-1.20 | Sometimes we have to exaggerate our needs in order to get what we really need from our investor – Reverse Coded |
| IM-1.21 | Our investor is flexible in response to requests for changes |
| IM-1.22 | When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms. |
| IM-1.23 | When unexpected events occur, our investor is open to modifying prior agreements |
| IM-1.24 | When our investor has any information that might be helpful to us, they provide it |
| IM-1.25 | Exchange of information with our investor takes place frequently and informally |
| IM-1.26 | Our investor provides proprietary information if it can help us |
| IM-1.27 | Our investor and we keep each other informed about events or changes that may affect each other |
| IM-1.28 | In most aspects of our relationship our investor and we are jointly responsible for getting things done |
| IM-1.29 | Problems that arise are treated by our investor as joint rather than individual responsibilities (Note: Not used in the analysis) |
| IM-1.30 | Our investor does not mind owing us favours (Note: Not used in the analysis) |
| IM-1.31 | Our investor shares responsibility for making sure that the relationship works for both of us (Note: Not used in the analysis) |

IM-1.32 Our investor does not make demands that might be damaging to us (Note: Not used in the analysis)

IM-1.33 Our investor restrains the use of power in attempting to get their way (Note: Not used in the analysis)

**Cooperative Behavior (COOP)**

IM-1.12 We always provided our investor with a completely truthful picture of our business

IM-1.21 Our investor is flexible in response to requests for changes

IM-1.22 When some unexpected situation arises, our investor would rather work out a new deal than hold us to the original terms.

IM-1.23 When unexpected events occur, our investor is open to modifying prior agreements

IM-1.24 When our investor has any information that might be helpful to us, they provide it

IM-1.25 Exchange of information with our investor takes place frequently and informally

IM-1.26 Our investor provides proprietary information if it can help us

IM-1.27 Our investor and we keep each other informed about events or changes that may affect each other

IM-1.28 In most aspects of our relationship our investor and we are jointly responsible for getting things done

**Opportunistic Behavior (OPP)**

IM-1.14 In dealings with our investor, we sometimes we have to alter the facts slightly in order to get what we need

IM-1.15 We have sometimes promised to our investor that we would do things without actually doing them later

IM-1.16 Complete honesty does not always pay when dealing with our investor

IM-1.17 Sometimes we present facts to our investor in such a way that we look better than we actually are

IM-1.18 On occasion, we have to misrepresent our situation to our investor in order to protect our interests

IM-1.19 Our investor is not always truthful with us

IM-1.20 Sometimes we have to exaggerate our needs in order to get what we really need from our investor

**Propensity for Opportunistic Behavior (POB)**

IM-1.13 We feel that it is OK to do anything within our means that will help us further our own interests (IM-1.13) (Note: Not used in the analysis)

**Interdependence (INT)**

IM-2.2 I believe that we need the skills and efforts of our investor to achieve our overall goals and objectives

IM-2.3 I believe that our investor needs our skills and effort to meet their overall goals and objectives

**Perception of Positive Goal Interdependence (PGINT)**

IM-2.4 I believe that, if we achieve our overall goals and objectives, our investor's involvement will be a significant factor

IM-2.7 I believe that, if we are successful in achieving our overall goals and objectives, then our investor will be successful in achieving their overall goals and objectives

IM-2.8 I believe that if our investor and we collaborate we will be better able to achieve our respective overall goals and objectives than if we didn't collaborate

IM-2.9 I believe that our investor and we share common overall goals and objectives

**Perception of Negative Goal Interdependence (NGINT)**

IM-2.1 I believe that some of our investor's overall goals and objectives are NOT compatible with our goals and objectives

IM-2.5 If our investor achieves their overall goals and objectives it will be at the expense of us achieving some of our goals and objectives

IM-2.6 If we achieve our overall goals and objectives, it will be at the expense of some of our investor's goals and objectives

**Technological Complexity (TECH)**

IM-3.1 It is difficult for our competitors to duplicate our technology

IM-3.2 We have a substantial lead over our competitors with respect to our technology

IM-3.3 Our technology is different from that employed by our competitors

IM-3.4 We are the only company in our industry employing this technology

IM-3.5 There is some risk that the technology will not perform as expected

IM-3.6 There are some important properties of the technology that we do not yet fully understand

IM-3.7 Our technology is undergoing significant change and development

IM-3.8 Advances in our technology are occurring frequently

IM-3.9 Our technology is difficult to explain to the average person

**Stage of Development (DEVST)**

IM-4.1 1_Pre-Commercial/Early Development

2_Commercial/Market acceptance

3_Consolidation/Formalization

**Board Governance Involvement (BDGOV)**

IM-5.1 Board Governance - Oversight (i.e. monitoring performance and ensuring accounting and other control systems are in place)

IM-5.2 Board Governance - Strategic (i.e. providing strategic advice and counsel)

**Business Operations Involvement (BOPS)**

IM-5.3 Business operations – R&D

IM-5.4 Business operations - Manufacturing

IM-5.5 Business operations – Sales and Marketing

IM-5.6 Business operations - Finance

IM-5.7 Business operations – Human Resources

IM-5.8 Business operations – Information systems

**Satisfaction with Performance and Working Relationship (INVSAT, MANSAT, RELSAT)**

IM-6.1 Our company's performance meets the expectations of our investor (INVSAT)

IM-6.2 Our company's performance meets the expectations of the company's management team (MANSAT)

IM-6.3 I am satisfied with the working relationship between the senior management team and our investor(s) (RELSAT)

**Management Equity Position (MANEQ)**

IM-7.1 1 - 50% or more

2 - Equal to or above 25% but less than 50%

3 - Equal to or above 10% but less than 25%

4 - Greater than 0% but less than 10%

5 - None

# Appendix C: Pre-Study Interview Questions

## Pre-Study Interview Questions

These interviews were relatively unstructured. Open ended questions were used to start discussion. Sample questions are shown below.

### Venture Capital Partners

1. What are the factors that influence your decisions about investments in your portfolio companies?
2. When you are making decisions with your portfolio company management about strategic priorities, major investments or resource allocations, how far in the future are looking?
3. Are there characteristics of companies that make it particularly challenging to maintain an effective working relationship?
4. Is there a trade-off between optimizing the development and performance of your portfolio companies for your exit strategy and building a foundation for the company's longer term future?
5. How do you ensure that what you've agreed to actually gets done, particularly when there's some difference of opinion about direction and priorities?
6. Are there aspects to the relationships with your portfolio companies that would characterize them as either win-win or win-lose situation?

### CEOs

1. How do you deal with situations when you and your investor have conflicting opinions about the company's priorities?
2. How would you characterize the working relationship between you and your investor?
3. When you are making decisions about strategic priorities, major investments or resource allocations, how far in the future are you looking?
4. Do you every experience trade-offs between building a foundation for the company's longer term future and meeting your investor's exit strategy requirements?
5. How important is your investor to your company's success? In what ways?
6. Are there aspects of the relationship with your investor that would characterize it as either a win-win or a win-lose situation?

# Appendix D: Ethics Approval

IVEY

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## Use of Human Subjects – Ethics Approval Notice

| | | |
|---|---|---|
| Principal Investigator: | Fernando Olivera | Review Number: 006/06 BREB |
| Re: | PhD Candidate Matthew Lynall | |
| Protocol Title: | Cooperation & Opportunism in Venture Capital Financed Companies | |
| Approval Date: | April 25, 2006 | End Date: April 25, 2007 |

This is to notify you that the Ivey School of Business Expedited Research Ethics Board (BREB) has granted expedited approval to the above named research study on the date noted above.

The BREB is a sub-REB of the University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB), which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario.

This approval shall remain valid until the end date noted above assuming timely and acceptable responses to the BREB's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the BREB except when the change(s) involve only logistical or administrative aspects of the study. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the BREB:

a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) all adverse and unexpected experiences or events that are both serious and unexpected;
c) new information that may adversely effect the safety of the subjects or the conduct of the study.

If these changes require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information must be submitted to this office for approval.

Members of the BREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to such studies when they are presented to the BREB.

Signature:
Craig Dunbar, Associate Dean, Faculty Relations & Research
Chair, Business Expedited Research Ethics Board (BREB)

*This is an official document. Please retain the original in your files.*