VALUATION BIASES AND DYSFUNCTIONAL JOINT VENTURE PERSISTENCE: A MODEL AND DECISION-MAKING ANALYSIS

Abstract

Even when superior alternatives have emerged, managers often stick to their established organizational forms. Such dysfunctional persistence appears inconsistent with rational decision-making. We advance the theoretical analysis of strategic decisions beyond assuming opportunistic behaviour of managers by showing how individual (i.e. psychological), interpersonal (i.e. social), organizational and project-specific influences may bias decisions regarding ongoing operations in the case of joint ventures (JVs). In particular, biases may lead to an overvaluation of predicted net benefits, and thus the continuation of a JV beyond its optimal termination time. Based on the escalation of commitment concept we present a conceptual framework that shows how these biases can lead to dysfunctional persistence with JVs.

Keywords: Behavioural Decision-making, Cognitive Biases, Escalation of Commitment, Joint Venture, Persistence

INTRODUCTION

When establishing a new business operation, investors have to select an organizational form: choices range from wholly-owned enterprises, to joint ventures (JVs), to licensing, to spot market transactions (e.g. Buckley and Casson, 1998). This choice of ownership mode is a strategic one: it concerns the allocation of the resources of a firm to a new venture and the control over these resources. JVs are often chosen because they provide a high degree of flexibility and limit financial commitment in view of uncertainty. As such, JVs may take a transitional stage in a firm's internationalization process (e.g. Reuer, 2000).

This flexibility, however, can only be realized if the organizational form is actually changed when better alternatives become available (e.g. Makino et al., 2007). Such organizational change may involve buying out the partner(s), selling the venture to the partner(s) or a third party or closing it down (e.g. Reuer, 2000). For instance, JVs that had been established to overcome restrictions on foreign ownership, as in China or Vietnam (e.g. Meyer and Nguyen, 2005; Nippa et al., 2007), would be expected to be changed once the respective restrictions have been removed.

However, recent research indicates that some JVs are retained despite missing performance targets, mounting losses or ongoing exploitation by one of the owners (Delios et al., 2004; Inkpen and Ross, 2001; Patzelt and Shepherd, 2008; Serapio and Cascio, 1996). This tendency to keep JVs operating beyond their optimal termination time has been attributed to the phenomenon of escalation of commitment (Staw, 1976), which may arise from four types of determinants: project characteristics such as the operation's expected benefits, psychological influences such as self-justification pressures, social determinants like external justification pressures, and parent-level organizational determinants such as corporate political support (Staw and Ross, 1987).

This literature has, however, shortcomings: First, with rare exceptions (Patzelt and Shepherd, 2008), research lacks clarity in defining and conceptualizing dysfunctional JV persistence. Second, while specific causes of dysfunctional JV persistence are suggested, few studies explore the causal relationships between these determinants. Third, the underlying decision-making logic that may lead to dysfunctional JV persistence has not been modelled, despite frequent calls from scholars (e.g. Barnett, 2008; Buckley et al., 2007; Cuypers and Martin, 2007; Hutzschenreuter et al., 2007; Li et al.,

2009; Tallman and Shenkar, 1994). By definition, dysfunctional JV persistence would not arise under the assumptions of fully-informed, rational decision-makers that aim to optimize the firm's performance. Hence, dysfunctional JV persistence occurs as a result of bounded rationality causing systematic discrepancies in valuations made by internal decision-makers and by independent evaluators. However, previous research rarely elaborates this important difference to explain *why* internal decision-makers often seem to ignore economically superior options.

We argue that dysfunctional JV persistence is caused by valuation biases arising from the ways human beings evaluate projects based on complex information. For instance, learning objectives are often a key motive for JVs (e.g. Mowery et al., 1996; Simonin, 1997), yet they are hard to value (Simonin, 1997). At the same time, learning continuously generates new information about the value of the venture itself (Inkpen, 1997). Decision-makers, however, often lack the tools to value the costs and benefits of newly created knowledge in a JV. What is more, they even tend to overvalue the net benefits associated with learning, especially if biases like a firm's dominant logic (i.e. the way things are done or perceived in a firm) suggest that JVs are a preferred way to obtain new knowledge.

Our model takes the following basic structure: First, we identify a number of sources of biases at the individual, interpersonal and organizational level that lead decision-makers to overvalue the net benefits of their past decisions (i.e., primary biases). Second, we explore the importance of JV project characteristics as moderators of the a) direction and/or the b) size of the primary biases. Third, we argue that longer planning horizons and real options analysis in decision-making systems may also increase the impact of the primary biases.

We offer several contributions: First, building on existing research, we provide a sharp conceptualization of JV persistence benchmarked against rational decision-making that would determine an optimal time of termination. Second, we develop a conceptual framework that integrates insights from the escalation of commitment concept and behavioural decision-making theory with a basic economic decision model and shows the interaction between key variables influencing managerial valuations. Third, we use our theoretical reasoning to extend the critical perspective in the growing literature on real options (Adner and Levinthal, 2004; Barnett, 2008; Cuypers and Martin, 2007, 2009). Fourth, we derive testable propositions from our framework as starting points for

empirical research and for providing advice to JV managers.

TOWARDS AN UNDERSTANDING OF DYSFUNCTIONAL JV PERSISTENCE

Businesses may stick to past decisions with respect to their structures and strategies, even when objective analysis would suggest organizational change. According to Delios et al. (2004, p. 457), "[c]asual observation provides numerous examples of alliances that continue for years despite failing to accomplish partner objectives." For example, Global One, a strategic alliance of Deutsche Telekom, France Telecom, and Sprint was created in 1994 and experienced years of losses, turmoil and conflict before it was finally terminated in 2000 (Delios et al., 2004; Inkpen and Ross, 2001). Similarly, General Motors and Daewoo Motors made long-lasting and costly attempts to revitalize their South Korean JV in the final stages of their collaboration, while neutral observers recognized the futility of these efforts (Serapio and Cascio, 1996). Similar examples emerged in our own research interviews with top managers. For example, a major European steel company upheld its Chinese US$ 1.4 billion JV even though it continuously failed to meet profit expectations and the local Chinese partner founded a competing JV with a Japanese partner.[1] Likewise, Danone experienced a long series of conflicts and lawsuits since the foundation of its partnership with Wahaha in China in 1996 and resided in "peace negotiations" for a very long time, before finally ending it in 2009 (Peng et al., forthcoming). Similar persistence has frequently emerged on corporate level strategies that were prolonged and eventually led to even larger losses, notably Texas Instruments' eventual sale of its PC business after losing US$660 million (Kotler, 1996), RCA's loss of US$575 million after trying to establish the video disc (Nutt, 1990) or Daimler's attempts to create a truly global operation (Hawranek and Hornig, 2007).

One possible cause of such persistence is the cementation of organizational structures and, as a result, organizational inertia (Hannan and Freeman, 1984). In the case of JVs, inertia have been associated especially with initial conditions such as equity stakes, technology transfer or shared marketing channels (Doz, 1996; Yan, 1998). Moreover, high levels of familiarity and the development of trust between the partners (Gulati, 1995) may favour the continuation of existing relationships rather than ending them (Patzelt and Shepherd, 2008). Such inertia may have positive consequences,

for instance, when they help overcoming temporary conflicts and crises. Yet, inertia may also lead to an over-commitment of resources and, in turn, to the neglect of superior alternatives due to hysteresis caused by sunk (Bowman and Hurry, 1993) and switching costs (Weiss and Anderson, 1992; Benito et al., 2009). For instance, Weiss and Anderson (1992) show that manufacturers often do not terminate relationships with sales representatives due to high switching costs, even in the case of growing dissatisfaction.

Yet, these costs explain only part of the phenomenon: the causes arise in managerial decision-making processes themselves. Several authors thus argue that it is necessary to integrate managerial decision-making rationales that underlie decisions to switch or persist (e.g. Barnett, 2008; Buckley et al., 2007; Cuypers and Martin, 2007; Hutzschenreuter et al., 2007; Li et al., 2009; Tallman and Shenkar, 1994). Our paper adapts this view and explores why decision-makers may stick with a JV even when an objective independent observer would infer that it has become inferior.

DEFINING DYSFUNCTIONAL JV PERSISTENCE

Since March and Simon's (1958) seminal work, 'persistence' has been defined broadly as the continuation of an existing course of action. The concept has been applied and refined in the organizations literature, mostly focusing on the absence of structural change or strategic redirection. 'Dysfunctional persistence' is understood as maintaining or increasing commitment to a specific failing strategic action (McNamara et al., 2002), such as the operation of a JV with the existing partner firm. Patzelt and Shepherd (2008, p. 1229) thus operationalize 'dysfunctional JV persistence' as a "manager's likelihood to allocate further resources to an underperforming alliance", based on the concept of escalation of commitment (Delios et al., 2004; Inkpen and Ross, 2001; Staw, 1976). However, these studies do not analyze the decision-making and assessment rationale of a JV itself. We focus on specific decisions taken (or not taken) and thus need to incorporate the decision making context, especially the information available (Tyles and Steesma, 1995), and the decision making rationale (Cuypers and Martin, 2007), i.e., decision-making based on the valuation of the net benefits of a JV. These ideas are integrated in our definition of dysfunctional JV persistence:

'The continuation of a JV in a situation where the valuation of the net benefits of a JV based on

information available to decision-makers at the time suggests that the ownership arrangement be changed or the venture be terminated.'

Our study focuses on the processes of decision-making that may lead to a deviation from the theoretical full-information rational solution. In particular, we make the following assumptions:

- First, decision-makers aim to take decisions in the best interest of their firm, as suggested by stewardship theory (Davis et al., 1997).
- Second, decision-makers evaluate not only the past performance of their investment but, more importantly, they have to assess expected future performance as a currently underperforming JV may turn profitable in the future. In consequence, we have to account for bounded rationality and uncertainty (Simon, 1959).
- Third, decision-makers evaluate and predict costs and benefits of all decision alternatives and select the profit-maximizing alternative based on information available at the time.
- Fourth, decision-makers periodically reassess their initial decision (Kogut and Kulatilaka, 2004) in the form of periodical strategic planning processes or in response to new information.

These four assumptions imply that decision-makers would – as a rule – choose the alternative with the highest expected relative performance. Thus, economic models show that, under similar assumptions, organizational forms are chosen that promise the highest expected return on investment (e.g. Buckley and Casson, 1998). In practice, decision-makers may use, for instance, the net present value (NPV) of expected future cash flows, possibly incorporating the NPV of real options, as a key decision parameter. The decision whether or not to continue a JV would then depend on meeting a minimum value of the decision parameter, essentially whether expected future revenues exceed expected future (opportunity) costs. For parsimony, we assume that decision-makers undertake periodical reviews using all relevant information available to them at the time to estimate and predict the net benefits for each of the decision alternatives.

Figure 1 illustrates how the net benefits of a JV may evolve over time. As long as they are higher than those of the best alternative, decision-makers should stick to the JV. In the illustration, the relative net benefits turn negative at t_4, suggesting that the JV ought to be discontinued in period four. This analysis provides a reference point against which we have to assess when a JV becomes

dysfunctional persistent. The thin line illustrates the possible evaluation by a decision-maker subject to biases that we shall explore later. It highlights that even small differences in valuations can lead to an overvaluation of the net benefits of a JV and, hence, to a substantive prolongation of its life time.

****** Figure 1 about here ******

Each assessment depends on valuations of future cash flows, which may include opportunities that were not thought of when the JV was originally set up. Decision-makers may try to incorporate such benefits by employing analytical tools such as real options. However, even complex analytical tools require insertion of values for outcomes under unknown future states of the world for which only a 'qualified guess' may be available. This concern has been noted in particular for real options models, which require estimating values and probabilities of outcomes for which little verifiable information is available and for which the duration may be indefinite (e.g. Adner and Levinthal, 2004; Barnett, 2008; Kogut and Kulatilaka, 2004).

In the absence of verifiable information allowing definite valuation of assets, managers attain some discretion over the values that are entered into decision support systems (Inkpen and Ross, 2001; Weiss and Anderson, 1992). Dysfunctional persistence may thus be caused by biases that assign higher values to established courses of action compared to the proposed alternatives. Hence, based on our definition of dysfunctional JV persistence, our baseline proposition is:

Proposition 1. Dysfunctional JV persistence is caused by an overvaluation of the net benefits of a JV.

While advanced governance and monitoring systems may prevent opportunistic behaviour, they do not necessarily resolve suboptimal decisions caused by systematic biases (e.g. Westphal and Bednar, 2005). Our conceptual framework, which will be presented in the next section of the paper, addresses these issues by suggesting that the interplay between different sources of biases may lead to an overvaluation of the net benefits of a JV, regardless of the valuation model used to assess a JV.

CAUSES OF DYSFUNCTIONAL JV PERSISTENCE

What determines the direction and the size of valuation biases? We argue that a number of pressures at the individual, interpersonal and organizational level are likely to lead decision makers to develop a

more positive view of a project, and thus to overestimate benefits and to underestimate costs. Whereas individual pressures are rooted in psychological biases, interpersonal pressures derive from social needs for conformance and organizational pressures from the need to conform to the surrounding organization (Staw and Ross, 1987). These primary biases suggest an alignment of valuations with internal and external expectations. As we argue below, they are likely to favour overvaluation and JV continuation.

In a second step, we explore factors that may increase the size of biases. Biases are constrained by rules and procedures for setting values to be entered into cost-benefits analyses. If these values are well known (or generated with established procedures) then the primary biases are unlikely to have a substantive impact. On the other hand, uncertainty regarding these values increases the possibility of primary biases to impact on final outcomes. The more degrees of freedom decision makers have when setting values to be entered in their decision models, the more likely the primary biases are likely to impact on actual decisions. The escalation of commitment literature (Staw and Ross, 1987) suggests that these degrees of freedom depend on project level determinants. In addition, we argue that decision making tools aimed to add more rigour to the analysis may in fact increase the impact of primary biases, especially for projects with long planning horizons or for projects operating under high degrees of uncertainty.

In our discussion of primary biases, we distinguish three levels, the individual, the interpersonal and the organizational level. At the individual level, we focus on the psychological phenomenon of 'status quo bias' (Samuelson and Zeckhauser, 1988). On the interpersonal level we discuss 'groupthink' (Janis, 1982) and 'mimetic isomorphism' (DiMaggio and Powell, 1983), and on the organizational level we focus on an organization's 'dominant logic' (Prahalad and Bettis, 1986). These effects are likely to complement each other. As for project level determinants, we investigate the JV's objectives and the types of investment required to achieve these objectives. These variables are predicted to have both a direct effect on overvaluation of the net benefits of a JV and to moderate the relationship between the primary biases and this overvaluation. Finally, we investigate possible moderating effects of decision support systems (i.e. planning horizons and real options analysis) on the effect of primary biases (see Figure 2).

****** Figure 2 about here ******

Individual Level Determinants

Individual decision makers are subject to psychological effects such as self-justification pressures (Staw and Ross, 1987). Behavioural decision theory identifies cognitive biases that favour individuals' perceptions of past decisions relative to competing new alternatives (e.g. Das and Teng, 1999). These effects have been explained as 'cognitive dissonance' (Festinger, 1957), 'status quo bias' (Samuelson and Zeckhauser, 1988) or 'self-serving bias' (Campbell and Sedikides, 1999).

Such individual biases may affect strategic decisions. For instance, 'divestiture aversion' (Thaler, 1980) has been shown to induce investors to overvalue an investment object if they own it compared to the same object if they had to acquire it. In other words, individual psychological processes lead decision-makers to overvalue the current state versus an alternative future state as they experience "the pain of giving it [the current state] up." (Kahneman et al., 1991, p. 197) This may lead them to hold on to or even increase their commitment to prior decisions even when they are apparently failing (Staw, 1976). Individuals experiencing a failed decision that cannot easily be revised are thus prone to suffer from psychological costs of facing that failure. They may justify their past decisions by staying to their course and even allocating further resources to it to reduce their psychological costs and to protect them from having to address their failure (ibid.).

This bounded rational behaviour has also been observed in alliance research. For example, Tyler and Steensma (1998) find that executives are more likely to focus on opportunities (e.g. learning, exposure to related markets) than on possible costs and threats when assessing alliances that had been successful in the past – independent of the current performance of the alliance. Selective information processing may thus result from individuals' preference for things to stay the same, i.e. to preserve the 'status quo'. To self-justify such a focus on the status quo, Samuelson and Zeckhauser (1988) suggest that the natural drive for internal consonance leads managers to "discard or mentally suppress information that indicates a past decision was an error (since such information would conflict with his or her self-image as a good decision maker)" (p. 39). Hence, the managers in Tyler and Steensma's (1998) study may have actively sought and overvalued opportunity-based information (e.g. market potential), but disregarded and undervalued threat-based information (e.g. technology

drain). Consonance-seeking may thus prevent managers from actively searching for dissonance-creating information. Together, the arguments suggest that status quo biases by individual decision-makers can affect JV decisions by creating the desire to collect confirming and to discard disconfirming information and, thus, to overvalue the net benefits of a JV:

Proposition 2. The more individual decision-makers are affected by status quo biases, the more likely they overvalue the net benefits of a JV.

Interpersonal Level Determinants

Pressures for conformity arise not only inside the individual. They may also originate in the interpersonal, social environment of a decision-maker. For example, group involvement may influence individual assessments in ways that constrain the individual's rational decision-making capability (e.g. Bazerman et al., 1984). Group level phenomena such as 'groupthink' (Janis, 1982) or 'pluralistic ignorance' (Westphal and Bednar, 2005) may create pressures to conform to opinions held by the group or its opinion leaders. This may easily create inertia and repress criticism from outside but also from inside the group (Levy, 2001). For instance, overly strong group cohesion may increase tendencies to persist with decisions (Westphal and Bednar, 2005) and induce escalating commitment, independent of the decision situation (Whyte, 1993). JV managers who belong to such cohesive groups (e.g. top management team) may be constrained in the rationality of their decision-making. Individuals who experience that a previously made decision may have failed are hence not only subject to psychological (i.e. individual) costs of failure, but also to social (i.e. interpersonal) costs of that perceived failure.

In consequence, decision-makers may defend their JV with an overly positive valuation of its potential benefits if such a valuation corresponds to the expectations or interests of relevant individuals or groups inside their organization. In contrast, negative feedback may be ignored because it creates dissonant cognition, leading managers stick to a failing JVs (Delios et al., 2004). Consequently, we suggest that the pressure for social conformity arising inside the firm increases the likelihood that JV managers would overvalue the net benefits of their JV:

Proposition 3. The more decision-makers are subject to external pressures in- and outside the firm,

the more likely they overvalue the net benefits of a JV.

Organizational Level Determinants

In organizations, memories are frequently institutionalized as schemes and judgments that become normative orders of groups or of the whole organization (Yiu and Makino, 2002). Over time, this collective memory may develop into organizational inertia and thus create a 'dominant logic' (Prahalad and Bettis, 1986) of how decision-makers in the organization make decisions. Such a dominant logic guides resource allocation, sets the terms of organizational politics and establishes routines and capabilities that shape the formation and implementation of strategies (Washington and Ventresca, 2004). In stable contexts, reusing knowledge may facilitate decisions. Yet, decision-makers have been observed to reuse old knowledge, even in the presence of new facts (Carlile, 2004). In other words, decision-makers may reuse knowledge even when it no longer ensures optimal decisions (Levitt and March, 1988).

Similarly, alliance research suggests that strategies that have repeatedly been successful in the past may be (over)exploited as firms design future growth strategies, for example, when choosing between alliances and acquisitions (Kale et al., 2002). Hence, the more successful prior alliances a company has, the more likely it would establish decision processes that cement this mode as a dominant logic. This dominant logic would then also influence whether an alliance is continued. JVs that are consistent with a firm's dominant logic are more likely to persist than those that depart from it (Lampel and Shamsie, 2000).

A dominant logic may be resistant to change, even in the event of contrary evidence. For instance, Côté et al. (1999) observe that firms tend to preserve their dominant logic regarding acquisition strategies until a crisis, or series of crises, exposes its flaws. Similarly, Delios et al. (2004) found that senior executives tend to become socially bound to failing alliances that attained almost mythical status within their companies. Dominant logic within an organization thus influences how decision-makers evaluate the benefits of continuing a JV. In particular they are more likely to overvalue the net benefits of a JV the more it is supported by an existing dominant logic:

Proposition 4. The more a JV is consistent with the firm's dominant logic, the more likely decision-

makers overvalue the net benefits of a JV.

Project Level Determinants

The specific nature of a JV sets the context in which the valuation is undertaken. These project determinants have been proposed in the escalation of commitment literature (Delios et al., 2004; Inkpen and Ross, 2001; Staw and Ross, 1987). In our context, they include in particular the types of expected benefits of a JV, and the investments needed to realize those benefits. Some outcomes and investments are more difficult to value than others, and this ambiguity increases with the planning horizon. This has two consequences. First, it provides more leeway for managerial discretion that is likely to aggravate biases that arise elsewhere, notably the primary biases discussed above. More specifically, if decisions are based on values of 'hard' assets then these may be proxied by market values, which limits the discretion of individual decision makers. Yet, with respect to 'soft' elements like human or social capital and knowledge, decision-makers do not have such clear benchmarks. In this case, their primary biases are likely to be amplified, which increases the likelihood of an overvaluation of the net benefits of a JV and thus dysfunctional JV persistence. Second, we expect that the project characteristics also directly influence the likelihood of overvaluation, in line with earlier studies that report overvaluation of intangible assets such as knowledge or social capital in JVs. In this section we discuss for each of the characteristics the direct and moderating effects.

Expected benefits of the JV

JVs generate benefits for their parents in several forms. The resource-based view and the organizational capability perspective suggest that JVs are important vehicles for exploiting and exploring a firm's pool of resources and capabilities (Meyer et al., 2009). In particular, JVs facilitate the transfer of tacit knowledge (Inkpen and Crossan, 1995), which makes them an attractive organizational form for accessing knowledge from JV partners (Dhanaraj et al., 2004; Lyles and Salk, 1996). However, such intangible benefits of knowledge accumulation are difficult to measure, and the processes by with they are created are complex and poorly understood (Nielsen and Nielsen, 2009). Researchers have proposed (a) to measure benefits through the "*relative scope* of a firm *i* in an

alliance *j*" (Khanna et al., 1998, p. 195), (b) to proxy technological capabilities by patents (Mowery et al., 1996) or (c) to estimate knowledge acquisition through questionnaire surveys (Lyles and Salk, 1996). Yet, it remains difficult to measure tacit knowledge flows in a reasonably precise manner (Simonin, 1997, 1999).

The operationalization and measurement of the benefits of knowledge creation is generally inhibited by their tacitness. For example, when sharing and exploiting each others' tacit resources and capabilities, cooperating firms need considerable time to identify and realize the true value of these assets and capabilities (Madhok and Tallman, 1998). Managers may even retain a poorly performing JV because they want to "learn why performance is less than satisfactory" (Inkpen, 1997, p. 361). Such thinking may be typical for cooperative relationships because synergistic quasi-rents may only be generated at later periods when the partners have enhanced the mutual understanding of their value-creation processes (Madhok and Tallman, 1998).

The expectation of future knowledge creation and innovation may inflate the value assigned to continuation, which increases the likelihood of overvaluation (Adner and Levinthal, 2004). For example, Inkpen finds that managers often stay in a JV because they assume that "the more tacit the knowledge, the greater the likelihood that the knowledge is valuable" (Inkpen, 1998, p. 74). However, empirical evidence of tacit knowledge positively contributing to JV performance is ambiguous (Dhanaraj et al., 2004), which suggests that decision-makers may tend to overestimate the positive effects of learning on JV performance (Inkpen, 2002). Therefore, we propose:

> *Proposition 5a. The more a JV's expected value creation is in form of knowledge creation the more likely is an overvaluation of the net benefits of a JV.*

The leeway that decision makers gain as result of the ambiguities in the valuation of the goal achievement not only makes overvaluation more likely (a direct effect), but it also interacts with the primary effects. More specifically, it increases discretion and managerial leverage, which magnifies the potential effects of primary biases on the valuation of the net benefits. For example, it is easier for decision makers to conform to external pressures when they have more valuation leeway, allowing adjusting valuations to the perceived pressures. The more decision-makers in the parent firms expect

benefits to derive from learning and knowledge creation, the more they are likely to follow their primary biases when preparing a decision. Thus, we propose:

Proposition 5b. The more a JV's expected value creation is in knowledge creation, the more likely individual, interpersonal and organizational biases lead to an overvaluation of the net benefits of a JV.

Social ties are an important means to facilitate knowledge transfers and, thus, value creation in JVs (Adler and Kwon, 2002; Dhanaraj et al., 2004; Inkpen and Tsang, 2005). For example, closer personal contacts and intensive social exchange between JV partners may facilitate the efficient transfer of complex information and tacit knowledge (Adler and Kwon, 2002). However, this process of developing trust and its outcomes – for example, social capital (Tsai and Ghoshal, 1998) – may be subject to causal ambiguity because of its high complexity and specific contingencies (Dyer and Singh, 1998). This contributes to overvaluation as causal ambiguity exacerbates the challenge of quantifying the economic effects of decisions and actions (Reed and DeFillippi, 1990).

Social capital is widely believed to benefit businesses because it creates trust between partners and thus reduces transaction costs such as monitoring and contract enforcement costs. Therefore, many firms prefer partnering with other firms they know from prior successful collaboration (Gulati, 1995), even though empirical evidence of the performance effects of partnering with a known partner is inconclusive (Goerzen, 2007; Nippa et al., 2007; Pangarkar, 2009). While the benefits of social capital are widely appreciated, they are neither measurable nor is the process of their creation well understood. In fact, managers have been found to overvalue their existing social capital (Adler and Kwon, 2002; Granovetter, 1973). Therefore, we conjecture that managers find it equally challenging to objectively assess potential future social capital that is to be created by a JV. Like the overvaluation of existing social capital, we expect an upward bias in the valuation of future social capital creation:

Proposition 6a. The more a JV's expected value creation is in form of social capital creation the more likely is an overvaluation of the net benefits of a JV.

The creation of value in a JV is harder to predict when social capital constitutes a major part of

the expected value creation, similar to the effects of expected knowledge creation. This lack of precise estimates increases the discretion of managers valuing the JV benefits, and thus their leverage to influence the overall outcome of the analysis. Therefore, the biases arising from individual, interpersonal and organizational determinants are more likely to influence the outcome of the valuation. Therefore, we predict that – in addition to the direct effect – social capital objectives positively moderate the relationship between the primary biases and the valuation of the net benefits of a JV:

> *Proposition 6b. The more a JV's expected value creation is in social capital creation, the more likely individual, interpersonal and organizational biases lead to an overvaluation of the net benefits of a JV.*

JV investments

The benefits of a project are conditional on investments in its setting up and maintaining the JV (Adler and Kwon, 2002; Buckley and Casson, 1998; White and Lui, 2005). In a JV, these investments often involve knowledge transfers and the creation of assets that specifically complement those of the partner (Dyer and Singh, 1998). Such partner-specific investments create interdependencies between the partners for key resources such as absorptive capacity (Kumar and Nti, 1998; Mowery et al., 1996) and human resource management systems (Pucik, 1988) or R&D facilities (Westney, 1988). Due to their tacit and partner-specific nature, these resources are often costly (or even impossible) to redeploy to new areas of activity (e.g. Adler and Kwon, 2002; Dhanaraj et al., 2004). If the JV was dissolved, they would thus be lost, and hence resemble sunk costs.

Partner-specific JV investments are incurred both during the initial set-up and as recurrent expenses (e.g. Adler and Kwon, 2002). A reassessment of a JV thus has to consider not only expected future revenues but also future costs. However, past sunk cost should be disregarded. In practice, such decisions may be influenced by the connection between future partner-specific investments and earlier partner-specific investments, which can lead to "a cumulative (snowball) effect" (Dyer and Singh, 1998, p. 672). Similarly, recurrent costs arise when reciprocal relationship-specific investments are used to create inter-organizational trust and social capital (e.g. Adler and Kwon, 2002). By this means,

managers face conflicting pressures: On the one hand, they have to invest continuously in partner-specific assets to generate the benefits envisaged for the JV. On the other hand, they have to value these costs in their periodical reassessment of a venture. Recurrent costs are likely to vary over time and may not be feasible to fully specify *ex ante* in JV contracts. Moreover, it may not be possible to exactly measure these costs, especially in the case of intangible contributions. Scholarly studies often have chosen indirect approaches to proxy these costs (Zollo and Winter, 2002; White and Lui, 2005).[2]

These types of scholarly approaches do however not lend themselves naturally to application in managerial decision-making. For example, a JV that combines knowledge from two or more partners may over time become dominated by indivisible bundles of intangible assets with limited marketability if sold separately (Buckley and Casson, 2001; Rivoli and Salorio, 1996). From the perspective of the parent firms, investments that are needed to generate these bundles of intangible assets (e.g. generated knowledge or social capital) could only be recovered by selling the JV as a going concern, including its intangible assets. However, the market value is likely to be lower than the going concern value because buyers are not able to assess the intangible assets and they are less likely to create similar synergies with their own operations. This is likely to result in a discounted selling price (Buckley and Casson, 2001). If this logic were foreseeable and calculable *ex ante*, the economic cost-benefit analysis could account for it. Yet, decision-making tools do often not appropriately incorporate this logic (Barnett, 2008), nor do they not account for indirect or recurrent costs associated with JVs (Contractor, 2001). This leads decision-makers to undervalue future costs of irreversible partner-specific JV investments that are needed to gain benefits like learning or social capital creation. Thus, we propose:

> *Proposition 7a. The more a JV's value creation is dependent on future partner-specific investments, the more likely is an overvaluation of the net benefits of a JV.*
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> *Proposition 8a. The more a JV's value creation is dependent on future tacit investments, the more likely is an overvaluation of the net benefits of a JV.*

However, the nature of future costs not only directly affects their valuation in an ex ante analysis; it also provides greater discretion for managers deciding valuations. Uncertainties in the

valuation of cost variables increase managerial leverage and therefore the impact of biases in valuation caused by individual, interpersonal and organizational determinants. Thus, we predict that – in addition to the direct effect – the partner-specificity and the tacitness of future costs moderate the relationship between the aforementioned sources of biases and the valuation of the net benefits of the JV.

Proposition 7b. The more a JV's value creation is dependent on future partner-specific investments, the more likely individual, interpersonal and organizational biases lead to an overvaluation of the net benefits of a JV.

Proposition 8b. The more a JV's value creation is dependent on future tacit investments, the more likely individual, interpersonal and organizational biases lead to an overvaluation of the net benefits of a JV.

Decision Support Systems

Decision makers use decision support models like net present value (NPV) analysis to assess investment opportunities. Equation 1 shows a simple illustration of a NPV, which incorporates the estimated benefits (*B*) and costs (*C*), a constant discount rate (*r*), and the final value (*FV*). If the investment is expected to be terminated at a certain point in time (in this example *t*=3), then *FV* would correspond to the value of the assets being sold off at that point in time; else it reflects the estimated values of the ongoing operation:[3]

$$NPV = (B\text{-}C)_0 + \frac{(B\text{-}C)_1}{(1+r)} + \frac{(B\text{-}C)_2}{(1+r)^2} + \frac{(B\text{-}C)_3}{(1+r)^3} + \frac{FV}{(1+r)^3} \quad (1)$$

This equation illustrates which variables influence the decision process: namely, the forecasted cash flow (benefits minus costs) several years into the future, the discount rate and planning horizon at which a final value is obtained. For JVs envisaged as temporary, the final value would the sell-by date; else it would be a date from which onwards a steady-state assumption for future cash flows is deemed acceptable. In the interest of adding precision to the decision making process, models may be extended further in the future, which allows inserting precise values for various cash flow components.

However, intangibility of benefits and costs can undermine precision intended by extending

the analysis further into the future. The challenges of estimating intangible costs and benefits are magnified when trying to value them for a point in the future. The further in the future costs or benefits are expected to occur, the less information is available to enable precise estimates. Therefore, decision makers have more leeway in choosing values to be entered into their decision model for years far in the future, regardless of the respective valuation model used. By implication, JVs scheduled to be temporary require only a short planning horizon and thus can be assessed more precisely than a JV with a long or indefinite expected life time. This leads us to propose the following moderating effect:

Proposition 9. The longer the planning horizon of a JV, the more likely individual, interpersonal and organizational biases lead to an overvaluation of the net benefits of a JV.

Basic analyses such as NPV have been criticized for being too deterministic and for failing to incorporate opportunities that may only emerge at a later stage. Thus, scholars have advocated real options analysis to incorporate some of the contingencies of investment projects. Real options analysis allows investors to strategically benefit from uncertainty by creating options such as to invest in a complementary project or to abandon a project early. Thus, real options analysis adds a value for the option, weighted by its estimated probability, into the calculation of a NPV. This logic has been advocated as a tool to enhance decisions to choose a JV over other modes (Chi and McGuire, 1996; Kogut and Kulatilaka, 2004; Li and Rugman, 2007) and decisions when to exercise an option and to terminate a JV (Chi, 2000; Li et al., 2008).

However, JV managers seldom just ‘wait and see’ (as in the case of financial investors), but rather ‘act and see’ by actually managing their respective JV and thereby actively reducing the uncertainty affecting their JV (Cuypers and Martin, 2009). Furthermore, JV managers are able to increase a JV’s upside potential if there is no given time for the termination of the JV (in fact, the value of an option increases with its duration). Without such a specific end point, it is almost always possible to argue that future events may turn favourable and bring the option back ‘in the money’, making it impossible to formally prove ‘failure’ of a JV. This endogeneity problem is more prevalent the more an option is based on an investment object that consists of intangible or illiquid assets such as social capital or knowledge creation (Barnett, 2008). In the words of Adner and Levinthal (2004, pp.

121-122), “in a world in which the set of possible outcomes cannot be fully specified ex ante, in which firms can continue to act to affect outcomes, and in which firms can discover new possibilities for a given initiative through these actions, even well-motivated intentionally rational organizations will confront difficulties in the efficient abandonment of opportunities, and therefore in the application of real options”.

Moreover, it would be difficult to estimate the values and probabilities of options with acceptable levels of precision, even if they were exogenous. This lack of available concise estimate for crucial values in the analysis increases decision-makers’ leeway to plug in their own estimates, which are likely to be biased by the effects described under propositions 2 to 4. Taken together, these arguments suggest that real option analysis would increase managerial discretion and thus the likelihood of an overvaluation of the net benefits of a JV due to biases stemming from individual, interpersonal and organizational characteristics. Hence, without predicting a direct effect, we propose the following moderating effect of real option analysis on JV persistence:

> *Proposition 10. Compared to conventional NPV analysis, decisions made using real option analysis are more likely to be affected by individual, interpersonal and organizational biases that lead to an overvaluation of the net benefits of a JV.*

CONCLUSIONS AND FUTURE RESEARCH

This paper offers several contributions to advance our understanding why managers may persist with an organizational form, such as a JV, beyond their optimal time of termination. Firstly, we provide a sharp conceptualization of the phenomenon of dysfunctional JV persistence, which integrates the decision-making and assessment rationale regarding the decision of whether to continue or exit a JV. Hence, we expect our conceptualization of dysfunctional JV persistence to facilitate systematic theory building and testing in this important area of research.

Second, research in international business has analyzed switches of operation modes in the context of internationalization processes, yet has recently been criticized for the failure to account for the underlying decision rationale (Barnett, 2008; Buckley et al., 2007; Cuypers and Martin, 2007; Hutzschenreuter et al., 2007; Li et al., 2009; Tallman and Shenkar, 1994). Strategic decisions

regarding formation, maintenance, and exit of JVs are complex processes of strategic resource allocation that incorporate various sub-processes. Therefore, a definition and conceptualization of dysfunctional JV persistence has to account for the underlying "microprocesses" (Sutton and Staw, 1995, p. 378). Accordingly, we start out from an economic decision-making model (Figure 1) that explains JV decisions as strategic choices between competing organizational forms that should be frequently revised by respective decision-makers. We thus extend recent research (Delios et al., 2004; Inkpen and Ross, 2001; Patzelt and Shepherd, 2008) by clarifying the relevant benchmark for decisions to continue an operation or not.

Third, we have developed a conceptual framework of biases causing dysfunctional JV persistence (Figure 2), and derived testable propositions regarding why and when JVs may persist despite the existence of superior alternatives. These propositions integrate resource-based perspectives of joint ventures (notably their objectives) with insights from "neighbouring concepts" (Sutton and Staw, 1995), in particular behavioural decision theory. Moreover, our argumentation builds on the determinants suggested by Delios et al. (2004) and Inkpen and Ross (2001), which in turn draw upon Staw and Ross (1987). We extend this line of work by demonstrating some of the causal relationships between these determinants.

Like all studies, our analysis has limitations. One might argue that biases, whether on an individual, interpersonal and/or organizational level, would indicate poor governance structures. Organizational procedures, including corporate governance, tools, procedures and monitoring processes are designed to minimize decision-making biases. Such governance structures are generally expected to enhance decision-making and to ensure that profit enhancing alternatives are chosen. However, the effectiveness of corporate governance systems is subject to debates as influential stakeholders may impose their own interests at the costs of third parties and induce self-justifying behaviour by dependent managers (Nippa and Petzold, 2005). Organizational safeguards such as more frequent monitoring may backfire and create unexpected side effects that exacerbate the original decision problem (e.g. McNamara et al., 2002). Future research may explore these interdependencies.

Similarly, decision support systems may have their own flaws. Periodical reviews based on real options models may help decision-makers to 'kill' failing projects under certain conditions (Kogut

and Kulatilaka, 2004; Reuer and Tong, 2005). Yet, we have argued that in themselves open new avenues in which managers are given degrees of freedom to adjust decision analysis outcome to their preferred outcomes. More specifically, the less specified a JV is in terms of its objectives and duration, and the more managers can manage the specific uncertainty affecting a JV, the less useful the real options analysis is likely to be. Future studies may investigate how fixed conditions (e.g. in a JV contract), and control systems or the design of the organization (Cuypers and Martin, 2009) influence the effectiveness of real options analysis for assessing JVs.

****** Table 1 about here ******

Our propositions invite empirical testing. Survey methodologies may be employed to collect data; in Table 1 we provide possible measurements of the dependent variable. Firstly, studies may aim to capture decision-makers' valuation of a JV, perhaps by asking respondents to assess alternative settings. Alternatively, researchers may study incidences of JV prolongation and termination, and regress them on the direct effects by the primary sources of biases, with moderating effects by the characteristics of the JV and the decision tools in use. Moreover, in-depth analyses of decision-making processes that focus on initial or early events in a historical sequence could be especially significant (e.g. Doz, 1996; Yan, 1998). Researchers may investigate how and why such 'small events' are decisive for JV persistence by using decisions or events as units of observation (Ring and Van de Ven, 1994), and tracing sequences of decisions, events and actions in detail.

Memory biases in interview data may however inhibit some of the study designs. These may be overcome by experimental modelling of JV persistence (Buckley et al., 2007) or by policy capturing (Hitt, et al. 2000). These methods seem to be appropriate as they (a) capture human judgement policies, (b) account for decision models that involve multiple decision criteria, and (c) have been already applied in diverse research settings. Moreover, they permit to confront decision-makers with a series of case scenarios on which they have to make a decision on the basis of the information available at the time.

MANAGERIAL IMPLICATIONS

What does our model propose to improve managerial decision-making? The literature suggests a number of procedures that aim to make decision making processes more objective and less subject to biases. For instance, Büchel (2002) suggests creating fixed reference points by laying out JV goals ahead of time, Kumar and Nti (1998) recommend periodical benchmarking of alliance outcomes, Lovallo and Kahneman (2003) propose taking "the outside view", while Inkpen and Ross propose to "make the intangibles tangible" (2001, p. 144) by constructing scenarios. Principally, our approach suggests that such tools and procedures are useful in mitigating the effects of primary biases as long as they are used in a similar and regular way and on every project. Top management should be extremely suspicious of project champions pushing, for example, for the inclusion of option values in the analysis of their project. This could actually increase the leverage for personal biases to impact on the outcome of the valuation (it is less of a concern if an organization always includes option value in valuation and has established rigorous procedures to do so).

A critical issue of any valuation tool, such as NPV, real options or decision trees (Contractor, 2001; Tallman and Shenkar, 1994), is their dependence on the quality of the data. Yet, the data prescribed by decision models, including the values of assets at some point in the future, probabilities, duration, volatility and discount rates, are rarely available. Moreover, managers may often find it difficult to handle the interrelationships among these factors (e.g. Barnett, 2008; Miller and Shapira, 2004). Advanced computer programming might help; yet, even this approach may not be able to handle the kind of fuzzy data discussed in this paper (Miller and Shapira, 2004).

Hence, organizations may focus directly on the underlying psychological and social sources, notably the justification pressures faced by decision makers. This would suggest, for example, reducing the costs of failure by reducing implicit penalties, and motivating decision makers to ask questions themselves (Staw and Ross, 1987). This surely is also a question of organizational culture.

The main message of our analysis, however, is that managers should aim to enhance the objectivity of their valuations by considering their own potential biases. The better they understand their likely biases, the more they are able to avoid dysfunctional JV persistence and its negative consequences.

Endnotes

[1] Interviews conducted by one of the authors in May 2006. A similar case is told by Leblanc (2008).

[2] For example, Zollo and Winter (2002) propose to proxy costs of building knowledge and organizational routines through direct costs such as time, resources or managerial attention spent and through indirect costs such as inertia arising from poorly performed knowledge and routine building.

[3] *FV* is commonly approximated by the assumption of cash flow (i.e. *B*-*C*) growing at a constant rate *g*, which yields $FV = (B\text{-}C) / (r - g)$.

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Table 1: Towards empirical testing: Concepts and possible measurements

Proposition	Concept(s)	Possible measurements
1	Overvaluation of net JV benefits	Delta between a subjective valuation of net JV benefits and an objective reference point; objective reference points could be defined goals with the JV that are fixed to explicit dates during the evolution of the JV (Büchel, 2002).
2	Status quo bias	Status quo bias, measured by decision alternatives, where one alternative occupies the position of status quo (Samuelson and Zeckhauser, 1988).
3	Groupthink, mimetic isomorphism	Groupthink, operationalized as a compound measure consisting of antecedents and symptoms of groupthink (Park, 2000). Mimetic behaviour, measured by the rate of JVs as compared to other organizational forms held by peers (Yiu and Makino, 2002).
4	Dominant logic	Administrative heritage, defined as cultural values and historical practices that have been successful in a firm's core business (Côté et al., 1999); distribution of a firm's JVs according to geographical / value chain activity-based scope (Lampel and Shamsie, 2000).
5a,b	Benefits from learning and knowledge generation	Change of estimated beneficial effects from knowledge transfer and learning in the beginning and end of the JV (Delios et al., 2004); importance of and expected value of estimated future knowledge transfer (Lyles and Salk, 1996).
6a,b	Benefits from social capital generation	Change of estimated benefial effects from strong social ties in the beginning and end of the JV (Delios et al., 2004); importance of and expected value of estimated future social tie / trust / attachment building (Lane et al., 2001); information volume, diversity and richness (Koka and Prescott, 2002).
7a,b	Future partner-specific costs	Change of estimated costs for enabling knowledge transfer and learning in the beginning and end of the JV (Delios et al., 2004; Zollo and Winter, 2002); compatibility of operating and management styles (Tyler and Steensma, 1998).
8a,b	Future tacit investments	Change of estimated costs for enabling strong social ties in the beginning and end of the JV (Delios et al., 2004; White and Lui, 2005); compatibility of operating and management styles (Tyler and Steensma, 1998).
9	Planning horizon	Number of months / years for which detailed data are obtained and included in the decision support system.
10	Real options analysis	Dummy variable: real options analysis was used or not.

Figure 1: An economic decision-making model of dysfunctional JV persistence

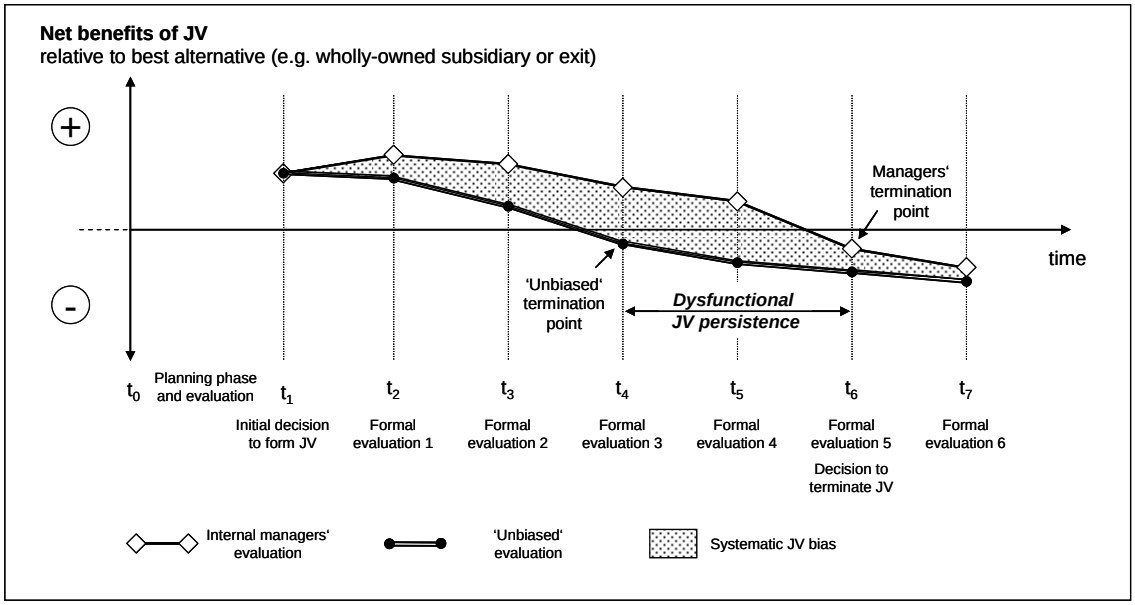

Figure 2: A conceptual framework of biases causing dysfunctional JV persistence