

# Decision Making Within and Between Organizations: Rationality, Politics, and Alliance Performance

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*This study extends research on strategic decision making into the realm of strategic alliances by examining the interactive effect of decision process characteristics at the firm and alliance levels on alliance performance. Located both within and at the boundary between partners, alliance-related decision processes have to balance each partner's self-interest on one hand and collective actions on the other hand, with both partners being dependent on each other's collaboration. Using primary, cross-sectional data obtained from 103 high-technology alliances, the authors study the effects of procedural rationality and politics in decision making. The results corroborate the importance of procedural rationality that facilitates collective actions between alliance partners but also uncover the pitfall of an unconditional reliance on procedural*

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*rationality at the firm level. The results further show that politically charged decision processes impair decision makers' ability to reconcile individual interests both within and between alliance partners and therefore jeopardize alliance performance.*

**Keywords:** *strategic alliances; alliance performance; decision process characteristics; procedural rationality; politics*

Strategic alliances are recognized as effective means for the realization of a variety of motives, ranging from growth, learning, or cost saving to international expansion or risk sharing (Kale, Dyer, & Singh, 2002). Although alliance-formation rates have strongly increased in recent years—particularly in high-technology industries (Hagedoorn, 1993)—several studies indicate that these collaborations may incur substantial coordination costs, risk of proprietary knowledge leakage, disproportional rent appropriation, or free-rider problems (e.g., Hamel, 1991; Koh & Venkatraman, 1991). Not surprisingly, then, failure rates lie between 50% and 80% (e.g., Geringer & Hebert, 1991; Park & Ungson, 1997). As a consequence, the quest for factors associated with alliance performance has triggered both academic and managerial interest.

It is apparent that alliance partners have to make multiple crucial decisions during the life span of their collaboration; these decisions include selection of a partner (Saxton, 1997), definition of alliance scope (Oxley & Sampson, 2004), design of governance and monitoring systems (Das & Teng, 1998a; Gulati & Singh, 1998), allocation of resources (Das & Teng, 1998b), or determination of dissolution procedures (Park & Ungson, 1997). In spite of their importance, the literature has just begun to examine the phenomenon of alliance-related decision processes.

Recent studies in the alliance literature have corroborated the performance impact of decision process characteristics at the alliance level, such as trust (Krishnan, Martin, & Noorderhaven, 2006; Lui & Ngo, 2004; Luo, 2002; Robson, Katsikeas, & Bello, 2008), procedural justice (Luo, 2007, 2008), conflict, and behavioral integration (Li & Hambrick, 2005). Other studies have found support for the impact of decision process characteristics at the firm level, such as procedural rationality, openness, recursiveness, and politics (Walter, Lechner, & Kellermanns, 2008). Notwithstanding this recent surge in interest, the literature on decision processes in alliances remains largely fragmented, and studies rarely cross-reference each other (Bell, den Ouden, & Ziggers, 2006; Hennart, 2006; Walter, in press). More importantly, research at the intersection of firm and alliance levels is virtually nonexistent. As a result, our understanding of how firm- and alliance-level decision processes interact with each other is limited. This stands in contrast to the prevalent argument that the ability of firms to realize alliance benefits critically depends on their interactions with the partner (Doz, 1996). It also neglects the few studies on trust (Currall & Inkpen, 2002), absorptive capacity (Lane & Lubatkin, 1998), and learning (Holmqvist, 2003) that have argued that crucial alliance-related phenomena require the simultaneous investigation of both firm- and alliance-level influences.

The purpose of this study is therefore to explore alliance-related strategic decision-making processes at *both* the firm and alliance levels. We examine how managerial perceptions of decision process characteristics at both levels interact with each other and jointly affect alliance performance. Located both within and at the boundary between partners, decision processes

have to balance each partner's self-interest on one hand and collective actions on the other hand, with partners being dependent on each other's cooperation (Doz, 1996). To capture this interplay between individual and mutual interests, we take into account both boundedly rational (e.g., March & Simon, 1958; Simon, 1957)<sup>1</sup> as well as political (e.g., Cyert & March, 1963; Mintzberg, Raisinghani, & Théorêt, 1976; Quinn, 1980) aspects of decision making.

With this study, we intend to make several contributions to the literature. As part of a larger research and data collection project (Walter et al., 2008), our study extends research on decision-making processes into the realm of strategic alliances. This offers new insights, as alliance-related decision making is characterized by repeated interaction cycles among partners, higher degrees of uncertainty and ambiguity, and mutual dependence among decision-making centers. Thus, this context is likely to require a distinct decision-making approach (Isabella, 2002). Second, although previous studies used experimental techniques to study managers' assessments of alliances (Tyler & Steensma, 1995, 1998), we examine managerial decision making in its natural organizational and political context and explicitly incorporate interactions with the alliance partner into our analysis, which previous studies deemed critical for explaining any alliance-related benefits (Doz, 1996). Third, by considering both rational and political theories of decision-making processes, we extend previous research that has largely focused on either rational choice theory—for example, the resource-based view (Das & Teng, 1998b, 2000b) and transaction cost economics (e.g., Dyer, 1997; Parkhe, 1993)—or political aspects of decision making (e.g., Lui & Ngo, 2005; Shenkar & Yan, 2002). Fourth, previous research has found alliance management to account for a significant amount of alliance performance (Kale, Dyer, & Singh, 2001). We open up the “black box” of alliance management by disentangling the relationship between decision-making processes and alliance performance. Our research shows that effective alliance management is contingent on the quality of decision processes both within *and* between partners and complements the impact of structural factors such as partner selection and alliance governance.

## Alliance-Related Decision Making

Strategic alliances are voluntary agreements between independent firms to develop and commercialize new products, technologies, or services (Gulati, 1998). This broad definition encompasses joint ventures, joint R&D or production agreements, marketing or distribution agreements, and technological exchange (Kale et al., 2002). Building on Mintzberg and colleagues (1976: 246), we define *alliance-related decision making* as firm- and alliance-level processes dealing with the strategic judgments—“in terms of the actions taken, the resources committed, or the precedents set”—that a focal organization makes with respect to an interfirm collaboration. We use *firm level* when referring to those decision processes that take place exclusively within the examined organization, whereas *alliance level* pertains to decision-making processes at the boundary between partner organizations, for example, within the alliance steering committee or within the joint venture management team. Although a joint venture management group may be a more distinct interorganizational level, no matter how the alliance is structured, the management of an alliance commonly represents a “factional group,” that is, its members are representatives of both alliance partners and are aware of their delegate status (Li & Hambrick, 2005). The distinction between firm and alliance level is therefore likely to be salient in managers' mind.

Although managing decision processes in business units and corporations is challenging by itself, strategic alliances add even more complexity and uncertainty to managers' agendas (Isabella, 2002). Alliance managers not only are involved in decision processes within their own organizations but also have to cope with and integrate processes across internal and external organizational boundaries. For example, the continuous flow of resources such as technology, human capital, and shared business systems has to be managed by both partners at the firm and alliance levels (Pillemer & Racioppo, 2003). Moreover, learning from the partner, as one of the rationales for alliances, takes place at the individual, organizational, and interorganizational levels (Ingram, 2002). Depending on the salience alliance managers attach to the demarcation line between their organizations, the partners may engage in more conflict and less mutual and collective interaction with each other, which may have a negative effect on the performance of the collaboration (Li & Hambrick, 2005).

Alliances are further characterized by a high degree of interdependence; that is, the interests of each party cannot be achieved without reliance on one another (Doz, 1996). This internal tension of cooperation and competition (Das & Teng, 2000a; Khanna, Gulati, & Nohria, 1998) is also reflected in alliance-related decision processes, which have to balance each partner's self-interest on one hand and collective actions on the other hand, to create collaborative advantages otherwise unavailable to individual firms. Moreover, ambiguous power and control relationships (Doz, 1988), as well as an information asymmetry between partners (Reuer & Koza, 2000), which is often aggravated by a lack of information sharing (Borys & Jemison, 1989; Mohr & Spekman, 1994), make it especially difficult to prespecify the contingencies that arise in alliance-related decision making.

In such a decision context, a comprehensive and rational-analytical approach seems to be the preferable option. Alliance managers have to make sense of ambiguous information, understand interdependencies between both partners' interests, and select the most promising decision alternative. In addition, however, the interplay between cooperative and competitive interests makes careful and balanced political maneuvering a necessary condition for the continuation and success of the alliance. Previous research has shown that rationality and politics coexist as distinct dimensions of the strategic decision-making process (Dean & Sharfman, 1993) but will be interwoven at all stages of the process (Mintzberg et al., 1976; Schoemaker, 1993). For instance, boundedly rational managers may strive to advance their own personal goals, which may be concordant with organizational goals or, more often, run counter to them (Simon, 1957). Applied to alliance-related decision making, the self-interest orientation of each partner may be individually rational yet produce a collectively suboptimal outcome (Shenkar & Yan, 2002). To capture this interplay between individual and mutual interests, we investigate both rational and political aspects of decision processes and their association with alliance performance.

## Alliance Performance

Despite the publication of numerous studies on alliance performance (e.g., Arino, 2003; Mohr & Spekman, 1994; Olk, 2002), there is no widespread agreement on how to conceptualize it. Some studies have found that neither survival nor financial indicators fully capture

the extent to which an alliance has achieved its objectives because survival or termination can hardly be distinguished from planned or unplanned terminations, and spillovers from the alliance or emergent returns are difficult to capture with financial measures (Gulati, 1998). Moreover, Reuer (2001) found that some alliance partners' stock prices rose for both alliance creation and termination announcements. Instead of relying on alliance survival or questionable judgments of outside investors, we therefore follow recommendations in the literature to define *alliance performance* as the level of satisfaction with the collaboration (e.g., Geringer & Hebert, 1991; Isobe, Makino, & Montgomery, 2000; Krishnan et al., 2006; Saxton, 1997). Accordingly, we conceptualized alliance performance as a composite of the achievement of a harmonious relationship, the fulfillment of objectives, the successful acquisition of new capabilities, and the attainment of an enhanced competitive position (Kale et al., 2001, 2002).

## Hypotheses

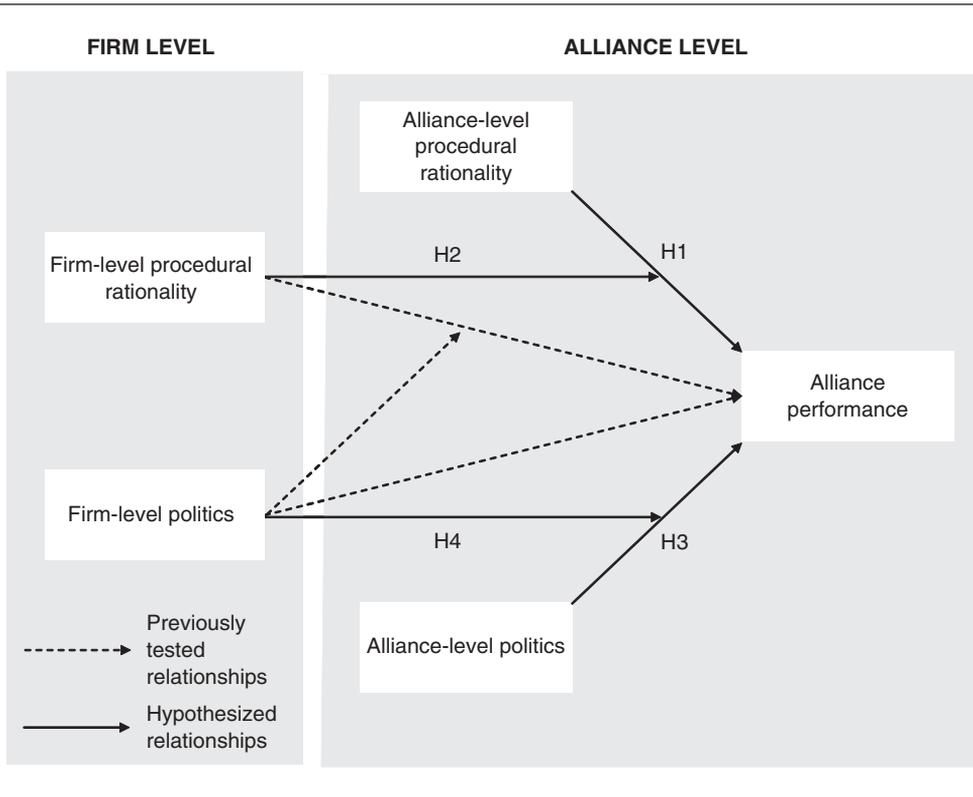
In this section, we first discuss the main effects of procedural rationality and politics at the firm and alliance levels and then develop our cross-level interaction hypotheses (see Figure 1 for an overview of our proposed framework).

### *Procedural Rationality*

In line with empirical studies on strategic decision processes (Dean & Sharfman, 1993, 1996; Ford & Gioia, 2000; Priem, Rasheed, & Kotulic, 1995), we operationalize *procedural rationality* as the extent to which decision makers engage in a comprehensive collection of the relevant information, analyze all that information, and attempt to select the best of all generated decision alternatives in the presence of incomplete information and bounded rationality (Dean & Sharfman, 1996; Ford & Gioia, 2000). In spite of its appeal, previous studies have been inconclusive with respect to the impact of procedural rationality. Early studies have found a positive association between procedural rationality and firm performance for stable environments (Fredrickson, 1984; Fredrickson & Iaquinto, 1989) and a negative association for dynamic environments (Fredrickson & Iaquinto, 1989; Fredrickson & Mitchell, 1984) and, based on these findings, have argued for a moderating impact of environmental dynamism. Subsequent studies, in contrast, have found a positive association between procedural rationality and firm performance in dynamic environments (Eisenhardt, 1989; Glick, Miller, & Huber, 1993; Goll & Rasheed, 1997; Priem et al., 1995) and a negative (Glick et al., 1993) or nonsignificant (Goll & Rasheed, 1997; Priem et al., 1995) association for stable environments. Yet another study has found no moderating effect of dynamism (Papadakis, Lioukas, & Chambers, 1998).

Opponents of procedural rationality in dynamic environments usually argue that time-consuming and comprehensive analysis is doomed to fail in fast-changing and unpredictable environments, whereas "decision speed and flexibility allow fast, low-cost action that can exploit and overcome a changing list of opportunities and threats that defy thorough understanding" (Fredrickson & Mitchell, 1984: 405) Proponents of procedural rationality in

**Figure 1**  
**Proposed Framework**



dynamic environments have countered, however, that fast decision makers actually use more information, develop more alternatives, and seek greater amounts of advice, which results in superior firm performance (Eisenhardt, 1989).

*Firm-Level Procedural Rationality.* This ambiguity is also reflected in a recent study that has examined the impact of procedural rationality at the firm level on the performance of strategic alliances in dynamic, high-technology industries (Walter et al., 2008). Although this study was unable to find a significant main effect of firm-level procedural rationality, the results demonstrated that the relationship between procedural rationality and alliance performance was contingent on the degree of politics present in the decision process: In a context of low politics, procedural rationality had a positive impact; in a context of high politics, procedural rationality exerted a negative impact. These results suggest that in decision-making processes characterized by high degrees of politics, formal analysis may be used solely for instrumental purposes (Dean & Sharfman, 1993), and a reliance on the information that is generated by such a process may actually jeopardize decision quality and alliance performance.

*Alliance-Level Procedural Rationality.* In contrast to its mixed effects on firm-level decision processes, we expect the benefits of procedural rationality at the alliance level to outweigh its negative effect. In particular, procedural rationality provides a counterbalance to two distinct decision biases. First, confronted with (relational) uncertainty, alliance managers might exhibit a tendency toward well-learned or habitual responses (cf. Staw, Sandelands, & Dutton, 1980). Such routinized responses, however, may be misleading in the dynamic and interdependent context of alliance-level decision processes (Spekman, Isabella, MacAvoy & Forbes, 1996). Procedurally rational decision processes, in contrast, tend to be less affected by partners' previous experiences and habits and may generate more creative strategic options that vary from the partners' existing strategies (cf. Ford & Gioia, 2000).

Second, decision makers tend to rely on "satisficing" behavior (March & Simon, 1958; Simon, 1957), attempting to attain or exceed their individual aspiration levels instead of trying to find the best decision alternative possible. Procedural rationality, in contrast, enables alliance managers to obtain a more comprehensive view of the options available to them, recognize trade-offs among rival options, select the option that best meets their joint objectives, and develop alternative or fallback options for cases when the selected alternative turns out to be infeasible or ineffective—a valuable backup strategy for coping with the high degrees of interdependency and relational uncertainty inherent in alliances (Anand & Khanna, 2000; Das & Teng, 1998a). Satisficing decision makers further tend to be more concerned with the risk of losing something they already possess than they are with the loss of something that is not yet possessed (March & Shapira, 1992). This bias might lead alliance managers to focus solely on protecting their companies from the risks of collaboration, such as losing proprietary knowledge and capabilities, and to neglect maximizing the opportunities the alliance provides (Dyer, 1997). A high degree of procedural rationality, in contrast, may enable alliance partners to strike a more beneficial balance between collaborative (i.e., opportunity-maximizing) and competitive (i.e., risk-minimizing) approaches.

In addition to its mitigating effect on decision biases, procedural rationality can also improve alliance-level decision processes indirectly through communication, direction and control, and symbolism (Langley, 1989). In particular, it can enhance decision effectiveness by ensuring that both partners' attention is focused on the crucial issues of a decision, ideas are thoroughly debated and verified, errors in decision alternatives are detected before implementation, and commitment to the decision is gained from both partners. In fact, research has suggested that the more decision-making power is shared among decision makers that do not fully trust each other, the more formal analysis becomes important (Langley, 1989). For these reasons, we propose,

*Hypothesis 1:* Procedural rationality at the alliance level will be positively related to alliance performance.

*Interaction.* Three arguments related to the coordination and integration of alliance-related decisions suggest an interactive effect of procedural rationality at the firm and alliance levels. First, alliance partners working toward a common goal will strongly benefit from coordination, that is, informing each other of planned behaviors so that they can utilize this information for their joint decisions (Simon, 1957), and more quickly and effectively assess

the viability of decision alternatives (Eisenhardt, 1989). A high degree of procedural rationality at the firm level—characterized by the comprehensive collection and analysis of the relevant information—can provide reliable anchors and guidelines for alliance-level decision processes. Such a firm-level process should therefore enhance the performance impact of any given degree of procedural rationality at the alliance level.

Second, in addition to comprehensiveness in making discrete decisions (i.e., analytical comprehensiveness), decisions have to be integrated into a consistent whole (i.e., integrative comprehensiveness) to be effective (Fredrickson & Mitchell, 1984). Procedurally rational decision processes tend to be exhaustive and inclusive (Dean & Sharfman, 1996) and therefore allow for a more effective integration of multiple decisions by conceptualizing a decision in terms of its broad impact, incorporating it into financial projections, and purposely involving other departments and divisions to ensure that a decision's overall effect is understood (Eisenhardt, 1989; Fredrickson, 1984). Although a high degree of procedural rationality at the alliance level ensures that both partners' decisions can be integrated and will reinforce each other, a high degree of procedural rationality at the firm level enhances alliance managers' ability to successfully integrate these joint decisions into their corporate strategies. This potential for firm-level integration, in turn, should enhance the performance impact of any given degree of alliance-level rationality.

A third explanation for an interaction effect can be found in the interdependent nature of alliance-related decision processes. Given information asymmetry between partners on one hand (Mohr & Spekman, 1994; Reuer & Koza, 2000) and the high degree of interdependence between partners on the other hand (Doz, 1996), decision processes at the alliance level are likely to be dependent on firm-level information and knowledge. In this case, the comprehensive collection of the information that is relevant for a particular decision—and the subsequent rational analysis of this information—will have a positive association with alliance performance only if the alliance management can rely on a high degree of procedural rationality at the firm level, and vice versa. Otherwise, although decisions at one level may be reached in a procedurally rational manner, they may be based on inadequate or even misleading information resulting from decision processes at the other level. For these reasons, we propose,

*Hypothesis 2:* The positive relationship between procedural rationality at the alliance level and alliance performance will be stronger when there is a higher degree of procedural rationality at the firm level.

### *Politics*

Complementing this rational-analytical aspect of decision-making processes, behavioral decision theory maintains that decisions are often the outcomes of bargaining and negotiation processes among individuals and organizational coalitions with competing or even conflicting interests (e.g., Cyert & March, 1963; Mintzberg, 1979; Narayanan & Fahey, 1982; Pfeffer & Salancik, 1974; Tushman, 1977). To capture this aspect of alliance-related decision processes, we define *politics* as intentional attempts to enhance or protect the self-interest of individuals or groups (Hickson, Wilson, Cray, Mallory, & Butler, 1986).

Decision making in a context of high uncertainty, which is typical for strategic alliances, is particularly susceptible to political influence attempts (Papadakis et al., 1998). As alliances and their governance are characterized by high levels of uncertainty (Anand & Khanna, 2000), executives are faced with ambiguity as to what behaviors are expected or acceptable; therefore, they are likely to develop their own, possibly self-serving rules (Kacmar & Carlson, 1997). Moreover, as discussed above, coalitions within the firm and at the alliance level have to engage in joint decision making because decision processes are interdependent and must share scarce resources (Pillemer & Racioppo, 2003). Under these conditions, the political perspective has been found to be particularly relevant for understanding organizational behavior (Tushman, 1977).

*Firm-Level Politics.* Some authors have emphasized a self-correcting effect of politics. In this view, individuals and coalitions within the firm who have preferential access to information might be able to more adequately assess the implications of strategic decisions (Simon, 1957); however, they must resort to politics to make their views known (Quinn, 1980). In contrast to this potentially positive effect, two arguments suggest a negative effect of firm-level politics on alliance-related decision making. First, the formation of opposing coalitions, lobbying attempts, and negotiations waste time, drain other resources, and divert decision makers' attention (Bourgeois & Eisenhardt, 1988)—even if these influence attempts turn out to be unsuccessful in the end. This is especially detrimental for alliance managers who already need to divide their attention and energy between their functional and alliance-related responsibilities.

Second, and more importantly, although effective alliance-related decisions must be based on organizational and collaborative goals, political decision processes evolve around the self-interests of certain individuals or groups within the organization, which might deviate from the former (Narayanan & Fahey, 1982). For example, in contrast to straightforward influence tactics, such as open discussion and full sharing of information, politics distort and restrict information flow (Cyert & March, 1963; Eisenhardt & Bourgeois, 1988). Commitment to a decision tends to evolve early and may lead to a conscious or unconscious distortion of information and promotion or suppression of alternatives over time (Narayanan & Fahey, 1982). Alliance managers with a specific interest may thus use information solely to support their own position and to discredit or oppress contrary arguments. If successful, therefore, the pursuit of individuals' self-interests likely undermines the effectiveness of the alliance-related decision process, with negative consequences for alliance performance. This is particularly destructive in the case of a "wounded prince" (Slowinski, 2003) whose internal standing (or even existence) is threatened by the alliance and who might become a skillful saboteur of any alliance-related effort. Corroborating these arguments, Walter et al., (2008) found a negative impact of firm-level politics on alliance performance.

*Alliance-Level Politics.* Similar to firm-level politics, some authors have argued for a self-correcting effect of politics at the alliance level. Thomas and Trevino (1993: 799), for instance, found in their qualitative study of alliance-building processes that "proactive politicking instigated by the focal manager became an important mechanism for reducing equivocality [i.e., multiple interpretations of the alliance issue] and bringing these multiple interpretations together." They suggest that politics may actually increase information flow

and conflict resolution, which, in turn, has a positive influence on decision outcomes. Other authors have argued that alliance-level politics are a “necessary evil” that partners may have to embrace amid the interplay of cooperative and competitive interests and relational uncertainty. These authors emphasize the risk of alliances degenerating into “learning races” in which a firm’s primary motive becomes to quickly acquire a partner’s skills and then underinvest in the alliance (Hamel, 1991). This argument suggests that partners should focus primarily on their individual interests to minimize the risk involved in strategic alliances (Hamel, Doz, & Prahalad, 1989).

With even more conflicting interests and preferences existing *between* partners (Hamel, 1991), however, the negative effects of politics mentioned above are likely to be aggravated at the alliance level. Moreover, despite a high level of interdependence, each partner is likely to maintain its own set of objectives and potentially competing goals at the alliance level (Luo, 2007). These can impede the flow of information between partners, as each takes precautions to limit its transparency and to guard itself against transferring proprietary knowledge (Steensma & Corley, 2000), which, in turn, may jeopardize a successful collaboration.

Because of the lack of information flow and partners’ attempts to disguise their intentions, alliance managers often misunderstand each others’ intentions and communicate poorly, thereby limiting their ability to form coalitions of interest and collaborate effectively (cf. Eisenhardt & Bourgeois, 1988). Moreover, such political behavior may create an atmosphere of distrust between alliance partners (Pillemer & Racioppo, 2003). This is especially problematic as cross-functional and cross-organizational cooperation are needed and ad hoc coalitions have to be formed to address the day-to-day business of the alliance (Doz, 1988). And last, a predominant focus on one partner’s unilateral goals is likely to narrow the variety of opportunities that a strategic collaboration might provide (Dyer, 1997). We therefore propose,

*Hypothesis 3:* Politics at the alliance level will be negatively related to alliance performance.

*Interaction.* The negative implications of alliance-level politics are likely to be amplified if they coincide with firm-level politics, for two reasons. First, extending recent research on interfirm justice (Luo, 2007) and interpartner legitimacy (R. Kumar & Das, 2007), a high degree of alliance-level politics might bias partners’ perceptions of and commitment to the favorability of collective gains. As a result, any given level of firm-level politics may be perceived as more justified or more legitimate when it claims to protect vital internal interests against the external “common enemy,” that is, the alliance partner. That is, any given degree of iconoclastic political maneuvering at the firm level is more likely to reward the instigators—and thereby more likely to unleash its detrimental effects on alliance performance—when alliance-level decision processes are perceived to be similarly motivated by the pursuit of unilateral interests. In contrast, low alliance-level politics—and therefore the belief that both partners’ interests will be served—likely mitigate the negative impact of firm-level politics by depriving political influence attempts of the fertile grounds of perceived procedural and distributive injustice at the alliance level.

Second, the outcomes of any political battles over alliance-level decisions and actions depend on the power and control of each partner (Shenkar & Yan, 2002). If firm-level decision processes are characterized by a high degree of politics and bargaining and negotiations

among incompatible interests abound, then this will fragment and thereby weaken the firm's external bargaining position. With the firm's position weakened, any political interest conflicts at the alliance level are more likely to be resolved in favor of the alliance partner, with a negative impact on managers' perceptions of the collaboration's performance. In contrast, a "united front" created by low degrees of firm-level politics may decrease the threat of the partner dominating alliance-level decision processes and thereby mitigate the negative effect of alliance-level politics on alliance performance. Based on these two arguments, we propose,

*Hypothesis 4:* The negative relationship between politics at the alliance level and alliance performance will be stronger when there is a higher degree of politics at the firm level.

## Method

### *Data and Sampling Procedure*

These hypotheses were tested using a subset of questionnaire items from a more extensive survey of companies that initiated strategic alliances between 1995 and 2002, as reported in the Securities Data Company's (SDC) Platinum Database. This database is widely considered a comprehensive and reliable source on interfirm collaborations (Anand & Khanna, 2000; Schilling, 2009), as it tracks a variety of publicly available sources, that is, SEC filings, trade publications, and other news sources. Our sample includes computers (SIC Codes 357 and 737), telecommunications (366), pharmaceuticals and chemicals (283, 284, 286, 289), and related services (874) industries. These industries were previously identified as high-technology industries (Hagedoorn, 1993; Kale et al., 2002) and are characterized by a high degree of uncertainty, competitiveness, entry costs, and rapidly changing technologies (J. S. Evans, 1991). Moreover, previous research provides evidence for a moderating effect of industry dynamism on the relationships between decision process characteristics and outcome variables (e.g., Bourgeois & Eisenhardt, 1988; Goll & Rasheed, 1997; Hough & White, 2003). By sampling only within highly dynamic industries, we implicitly controlled for industry dynamism. Focusing on dyadic alliances (i.e., consisting of only two partners) facilitated the data-collection process "since the multiparty case (three or more) complicates the measurement of most constructs used and differs in cooperation logic and behavior from the two-party case" (Luo, 2008: 35). For language and data-access reasons, we further restricted our sample to alliances with at least one partner located in the German-speaking area (e.g., Germany, Austria, and Switzerland). This focus provided us with a mailing list of 530 firms.

Because of the complexity of managing strategic alliances, we relied on the key informant method (N. Kumar, Stern, & Anderson, 1993). In particular, we were trying to identify boundary-spanning executives (Luo, 2007; Zaheer, McEvily, & Perrone, 1998) who are regularly interacting with alliance partners on behalf of their organizations and who are therefore knowledgeable about internal as well as boundary-spanning decision processes.

We contacted each sample company via telephone and requested that they identify the upper-echelon executive who is or was responsible for the specific alliance mentioned in the SDC database. We then addressed our questionnaire to this executive and asked him or her

to complete it only if he or she was familiar with the indicated alliance or to forward the questionnaire to the individual that was most knowledgeable in this respect. We assured respondents confidentiality to decrease the tendency to provide socially desirable answers (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Two follow-up e-mails resulted in completed questionnaires from 106 organizations, corresponding to a 20.0% response rate. (We had to subsequently exclude three questionnaires in which respondents reported only on decision-making processes at the firm level.) Given the seniority of our respondents and the strong research interest and sampling activity in high-technology industries, our response rate compares favorably to those of recent studies on strategic alliances (e.g., Isobe et al., 2000; Krishnan et al., 2006; Tsang, 2002).

The average participating company employed 3,074 people (with a standard deviation of 7,244); average age of participating companies was 20.3 years ( $SD = 25.0$ ). Our respondents' average age was 41.7 years ( $SD = 8.0$ ), 18.7% of whom were female. More than half of respondents had been with the organization for more than 5 years and more than a third for more than 10 years (average tenure at the firm was 8.0 years;  $SD = 5.2$ ). Our respondents held senior positions in their respective firms, such as CEO (10.8%), CFO or COO (4.1%), managing director (13.5%), president (6.8%), vice president (6.8%), or department head (18.9%). Moreover, a large majority of our respondents also held senior positions within the alliance, such as board or steering committee member (20.7%), CEO (8.6%), managing director (34.5%), or vice president (27.6%). Besides being actively involved in and having in-depth knowledge of their companies' alliances, respondents were therefore familiar with their firm's corporate strategy and the overall impact of the alliance. For this reason, we consider our respondents to be "boundary spanners" (Luo, 2007) between their own firms and the alliance partner, who are able to provide a high-quality and reliable assessment of a specific alliance at both the firm and alliance levels.

Both the privately held status of a number of organizations in our sample and the extremely high turnover among managers in high-technology industries in recent years made it difficult to identify additional respondents. Similar to other recent studies on strategic alliances (e.g., Isobe et al., 2000; Krishnan et al., 2006; Lui & Ngo, 2004, 2005; Steensma & Corley, 2000; Tsang, 2002; White & Lui, 2005)<sup>2</sup> and decision-making processes (e.g., Elbanna & Child, 2007; Goll & Rasheed, 1997), we therefore relied on the information from individual key informants to test our hypotheses.

## Measures

*Alliance Performance.* To capture our dependent variable, we used a self-reported measure of alliance performance, which previous research has found to be highly correlated with objective performance measures based on accounting data and abnormal stock market gains (Geringer & Hebert, 1991; Kale et al., 2002). This approach, which has been frequently used in the recent alliance literature (e.g., Child & Yan, 2003; Krishnan et al., 2006; Li & Hambrick, 2005; Robson et al., 2008), is particularly appropriate because our respondents represent the top management of their respective companies and of the alliance (Olk, 2002). We asked our respondents to assess the performance of the alliance by indicating their level of agreement

with the following statements (based on Kale et al., 2001, 2002): “This alliance is characterized by a strong and harmonious relationship between the alliance partners,” “Our company has achieved its primary objective(s) in forming this alliance,” “Our company’s competitive position has been greatly enhanced because of this alliance,” “Our company has been successful in learning some critical skill(s) or capabilities from its alliance partner” (all 1 = *strongly disagree*, 7 = *strongly agree*), and “Please give an overall assessment of this alliance, based on all the above dimensions” (1 = *unsatisfactory or failure*, 7 = *satisfactory or successful*). Interitem reliability was  $\alpha = .91$ . Given that the mean alliance age at the time of our survey was 2.7 years ( $SD = 1.4$ ), we are confident that the alliances in our sample have reached the outcome stage where “alliance performance becomes tangible and can, thus, be evaluated with some certainty” (Das & Teng, 2002: 737).

Concerning our independent variables, procedural rationality and politics, respondents were asked to “evaluate certain aspects both from the perspective of your own firm (‘firm level’) and from the perspective of your cooperative relationship with your alliance partner (‘alliance level’).” In line with previous cross-level research (Zaheer et al., 1998), we created parallel instruments (i.e., containing the same items) for both levels of analysis and confirmed interitem reliability and convergent validity of our parallel measurements.<sup>3</sup> We measured all items on Likert-type scales and then averaged the responses of each alliance manager across items.

*Procedural Rationality.* We adopted our measure of procedural rationality from Dean and Sharfman (1996) and asked our respondents the following questions: “How extensively did you look for information in making alliance-related decisions?” “How extensively did you analyze the relevant information before making an alliance-related decision?” “How important were quantitative analytic techniques (such as net present value or discounted cash flow analysis, etc.) in making alliance-related decisions?” “In general, how effective were you at focusing your attention on crucial alliance-related information and ignoring irrelevant information?” (all 1 = *not at all*, 5 = *extensively or highly*), and “How would you describe the decision processes that had most influence on alliance-related decisions?” (1 = *mostly intuitive*, 5 = *mostly analytical*). Interitem reliabilities were  $\alpha = .93$  (firm level) and  $\alpha = .92$  (alliance level).

*Politics.* To operationalize politics, we selected two items from Dean and Sharfman’s (1996) politics measure. In particular, we asked our respondents, “In alliance-related decisions, were people primarily concerned with their own goals or with the goals of their organizations?” (1 = *own goals completely*, 5 = *organizational goals completely* [reverse scaled in the analysis]) and “To what extent were people open with each other about their interests and preferences in alliance-related decisions?” (1 = *not at all*, 5 = *completely* [reverse scaled in the analysis]). As evident in our prior discussion of firm- and alliance-level politics, we focused on alliance partners’ dilemma to act in their collective interest and, at the same time, to protect their unilateral interests (Das & Teng, 2000a; Khanna et al., 1998), which is represented by the items we selected. The two additional items proposed by the original measure—the degree to which a decision process exhibited the use of power and influence and the degree to which it was characterized by negotiations among people—were deemed inappropriate for

our study context as strategic alliances are inherently characterized by power struggles and negotiations between interdependent partners (Das & Teng, 2000a, 2002). Interitem reliabilities were  $\alpha = .69$  for both levels.

*Control Variables.* Although all sample companies are located in European high-technology industries, we included *industry* as well as *country* dummy variables obtained from the SDC Platinum Database to control for industry- and country-specific differences (Kale et al., 2002; Krishnan et al., 2006). Moreover, *firm size* has been recognized as a key variable affecting both strategic decision processes (Fredrickson & Iaquinto, 1989) and interorganizational collaboration (Hagedoorn & Schakenraad, 1994). We therefore included firm size as a control variable and measured it as the logarithm of the number of employees. We obtained this data from the Compustat, Compact Disclosure, and Hoovers databases and, if available, validated it with companies' annual reports. The *age of a firm* may also affect its ability to learn from alliance partners (Lane & Lubatkin, 1998) and, subsequently, affect alliance performance. We therefore also controlled for firm age, measured as the logarithm of the number of years since the incorporation of the firm.

Low-performing firms may seek alliances to improve their performance, whereas strong performers may enter into a partnership to leverage some of their successes (Gulati, 1995). Because this may affect the assessment of alliance performance, we asked respondents to rate their *firm's past performance* compared to similar firms on sales growth, after-tax return on sales and total assets, and overall success, which previous studies have confirmed to be highly correlated with objective measures of firm performance (Dess & Robinson, 1984; Venkatraman & Ramanujam, 1987). Interitem reliability was  $\alpha = .89$ . Moreover, the availability of *slack* also affects strategic behavior and performance (Cyert & March, 1963; Singh, 1986). We therefore included slack as a control variable at both the firm and alliance levels. Respondents were asked for both levels (based on Sharfman & Dean, 1997), "How difficult would it currently be to get approval for a medium-sized capital project related to the alliance that is worth doing?" (1 = *very difficult*, 5 = *not at all difficult*) and "Businesses often go through cycles in the availability of money. Sometimes it is very tight, and other times very loose. How would you describe your current situation related to the alliance?" (1 = *very tight*, 5 = *very loose*). Interitem reliabilities for these controls were  $\alpha = .81$  at the firm level and  $\alpha = .76$  at the alliance level. Because decision speed was established as a critical success factor particularly in dynamic decision environments (Eisenhardt, 1989; Wally & Baum, 1994), we further included the *pace of the decision process* as a control variable. Based on Wally and Baum (1994), respondents were asked, "When we see a business opportunity related to the alliance, we can move faster than our competitors," "In the context of this alliance, our competitors consider us fast in responding to their actions," and "From start to finish, we respond faster than our competitors to alliance-related problems" (1 = *strongly disagree*, 5 = *strongly agree*). Interitem reliability was  $\alpha = .89$ .

We further included openness and recursiveness at the firm level as control variables in the model (adapted from Sharfman & Dean, 1997). *Openness* is the degree to which the process is receptive to new ideas and was measured with the following items: "How often did you rely on new sources of information in making alliance-related decisions?" "How often were novel or original ideas presented during alliance-related discussions?" "To what

extent were these novel or original ideas seriously considered?" and "To what degree were people able to contribute to the alliance-related decision in ways that did not strictly match their job description or level of authority?" *Recursiveness* is the degree to which decision makers cycle between the stages of a decision process to reexamine key assumptions and was measured with the following items: "To what extent did you reconsider any choices made during decision-making processes?" and "How often did individuals change their minds during decision-making processes?" Both measures had high interitem reliabilities:  $\alpha = .88$  (openness) and  $\alpha = .76$  (recursiveness).

Longer alliances could be associated with greater collaborative benefits but may also increase the likelihood of losing one's intellectual property to the partner (Das & Teng, 2002). Therefore, we controlled for *alliance duration*, that is, the logarithm of the number of years from alliance formation until dissolution or until the year of our study. The alliance literature has also found *alliance type* (i.e., joint venture vs. contractual alliance) to potentially affect alliance management and performance (Kale et al., 2002). We therefore included a control variable that took the value of 0 for contractual alliances and 1 for joint ventures, extracted from the deal text in the SDC Platinum Database and verified by our respondents. Last, ongoing and terminated alliances may be evaluated differently as alliances that were dissolved because of conflicts and so on may negatively bias alliance managers' assessments. We therefore included the *operational status* of the alliance as a control variable into our analysis (coded 1 if respondents indicated that the alliance was still operating at the time of our survey and 0 otherwise).

### *Construct Validity and Examination of Potential Biases*

We conducted a confirmatory factor analysis including all multi-item constructs. The analysis showed good convergent and discriminant validities, with a comparative fit index (CFI) of .890, a goodness-of-fit index (GFI) of .727, and  $\chi^2(538) = 808.672, p < .001$ . We also compared a four-factor model (procedural rationality and politics at both the firm and alliance levels) to a two-factor solution that combined firm- and alliance-level indicators. The four-factor solution showed acceptable fit with a CFI of .837, a GFI of .831, and  $\chi^2(28) = 131.300$ . The two-factor solution showed lower fit with a CFI of .421, a GFI of .648, and  $\chi^2(34) = 400.741$ . The chi-square difference test confirms this by indicating superior fit of the four-factor model,  $\chi^2$  difference  $(34-28) = 269.441, p < .001$  (Hu & Bentler, 1999). These results showed that respondents were able to distinguish decision process characteristics at both levels of analysis.

We tested for several biases that could potentially distort our results. Because incomplete recall and retrospective rationalization may confound the results of questionnaires based on respondents' recall of past events (Golden, 1992), we used various means to ensure high-quality responses: Firm-level and alliance-level items were spatially separated, some measures were composed of reverse-coded items, and items were arranged so that the dependent variable did not precede, but rather followed, the independent variables (Salancik & Pfeffer, 1977); the items that constituted a specific construct were separated from the others to limit consistency bias and reduce repetitiveness (Parkhe, 1993).

Similar to other studies on strategic alliances (e.g., Krishnan et al., 2006; Tsang, 2002; Zollo, Reuer, & Singh, 2002) and decision processes (e.g., Elbanna & Child, 2007), the possibility of a common method bias was addressed by Harman's (1967) single-factor test using the procedure suggested by Podsakoff and Organ (1986). We performed an exploratory factor analysis with a varimax rotation using the eigenvalue greater than one criterion and found that no single factor was able to explain more than 30% of the variance. The first factor captured only 17.7% of the variance in the data. We also obtained five of the control variables, that is, firm size, firm age, industry, country, and alliance type, from secondary sources, such as databases and company reports. Common method concerns are further mitigated by the complex data relationships created by our predicted interactions because respondents were unlikely to guess our moderation hypotheses or to respond in a socially desirable manner that may lead to spurious findings (Kotabe, Martin, & Domoto, 2002; Krishnan et al., 2006). Indeed, based on a series of Monte Carlo simulations, M. G. Evans (1985) concluded that the likelihood of obtaining significant interaction effects is reduced, not enhanced, to the extent that a method effect is present. Thus, if we are able to find empirical support for the predicted interaction effects, we do not expect these results to be inflated by a common method.

Similar to previous alliance studies (Krishnan et al., 2006; Mohr & Spekman, 1994; Poppo & Zenger, 2002), we examined nonresponse bias by separated early and late respondents into two groups and performed *t* tests on the responses of each group (Armstrong & Overton, 1977). These tests yielded no statistically significant differences between the two groups at the  $p = .05$  level. To further mitigate any nonresponse concerns, we have also compared our respondents to a random sample of 5% of the nonrespondents (e.g., Johnson, Korsgaard, & Sapienza, 2002; Robson et al., 2008). Also, *t* tests found no significant differences between respondents and nonrespondents.

Last, to assess the potential for reverse causality, we utilized instrumental variables for both procedural rationality and politics at the alliance level. Following suggestions in the literature (e.g., Argyres, Bercovitz, & Mayer, 2007), we used Stata 11.0 and the program IVENDOG (Baum, Schaffer, & Stillman, 2002) to calculate a two-stage least-squares regression (Hamilton & Nickerson, 2003). Nonsignificant *F* tests and nonsignificant chi-square tests as part of the Durbin–Wu–Hausman test suggest that the independent variables in question are exogenous and that their ordinary least squares (OLS) estimates are unbiased and thus can be reported (Davidson & Mackinnon, 1983). Indeed, when utilizing relationship conflict, cognitive conflict, and trust at the firm level as instruments, the resulting tests for alliance-level procedural rationality ( $F = 0.537, p = .47$ ; and  $\chi^2 = 0.67, p = .41$ ) and alliance-level politics ( $F = 0.866, p = .35$ ; and  $\chi^2 = 1.076, p = .30$ ) showed that the variables can be considered exogenous, and we accordingly report the OLS estimates in the article.

## Results

Descriptive statistics and correlations are provided in Table 1. To test our hypothesized relationships, we performed a hierarchical moderated regression analysis and entered the variables in five steps (see Table 2 for results). Model 1 represents the baseline model (Walter et al., 2008) with all firm- and alliance-level controls, firm-level procedural rationality and

**Table 1**  
**Descriptive Statistics and Correlation Matrix**

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Firm size (log)	5.98	2.42										
2. Firm age (log)	2.48	1.06	.47**									
3. Past firm performance	2.08	0.46	-.19	-.01								
4. Slack (firm level)	2.77	1.07	.09	.02	.07							
5. Pace of decision process	3.78	1.03	-.02	-.01	.06	.04						
6. Openness (firm level)	3.39	1.02	.07	.11	.08	.10	.45**					
7. Recursiveness (firm level)	3.02	1.09	.17	.15	-.01	.01	.21*	.69**				
8. Procedural rationality (firm level)	3.48	1.15	.20*	.10	-.12	-.04	.36**	.37**	.38**			
9. Politics (firm level)	2.49	0.87	.02	-.03	-.29**	-.01	-.28**	-.25**	-.04	-.17		
10. Alliance duration (log)	0.90	0.45	-.01	.08	.06	.05	-.05	.07	-.17	-.11	-.10	
11. Alliance type	0.31	0.43	.10	.22*	-.07	.12	.16	-.04	.02	.05	-.06	-.16
12. Operational status of alliance	0.67	0.45	-.11	-.08	.12	.13	.16	.07	-.19	.02	-.10	.38**
13. Slack (alliance level)	2.61	0.91	.13	.13	.06	.19	-.23*	-.09	-.21*	-.10	-.04	.33**
14. Procedural rationality (alliance level)	3.30	1.12	.20*	.02	-.11	-.16	-.18	-.21*	-.12	.16	.03	.17
15. Politics (alliance level)	2.83	0.90	-.20*	-.02	-.17	-.03	.06	-.02	.22*	.10	.26**	-.19
16. Alliance performance	4.69	1.55	-.06	-.12	.01	.04	.16	-.18	-.50**	.01	-.25*	.28**
Variable	11	12	13	14	15							
11. Alliance type												
12. Operational status of alliance	-.07											
13. Slack (alliance level)	-.07	.26**										
14. Procedural rationality (alliance level)	-.09	-.04	.12									
15. Politics (alliance level)	.10	-.22*	-.37**	-.28**								
16. Alliance performance	-.15	.33**	.35**	.36**	-.41**							

Note: *N* = 103.

\**p* < .05, two-tailed. \*\**p* < .01, two-tailed.

**Table 2**  
**Results of Hierarchical Regression Analysis**

	Model 1	Model 2	Model 3	Model 4	Model 5 <sup>a</sup>
Constant	5.63*** (1.20)	5.21*** (1.34)	5.08*** (1.30)	5.19*** (1.38)	-0.19 (0.87)
Controls (industry, country dummies not reported)					
Firm size (log)	-0.03 (0.06)	-0.10 (0.06)	-0.11 <sup>†</sup> (0.06)	-0.13 <sup>†</sup> (0.07)	0.02 (0.04)
Firm age (log)	0.00 (0.14)	0.02 (0.13)	0.01 (0.12)	-0.01 (0.13)	0.04 (0.08)
Past firm performance	-0.29 (0.29)	-0.28 (0.26)	-0.32 (0.26)	-0.44 (0.27)	0.21 (0.17)
Slack (firm level)	0.01 (0.12)	0.10 (0.11)	0.13 (0.10)	0.14 (0.11)	-0.02 (0.07)
Pace of decision process	0.35* (0.14)	0.42** (0.13)	0.39** (0.13)	0.47*** (0.13)	-0.13 (0.08)
Openness (firm level)	-0.02 (0.20)	0.02 (0.19)	0.00 (0.18)	-0.43** (0.13)	0.77*** (0.09)
Recursiveness (firm level)	-0.73*** (0.18)	-0.67*** (0.17)	-0.56** (0.17)		
Procedural rationality (firm level)	0.18 (0.12)	0.09 (0.12)	0.12 (0.12)	0.07 (0.12)	0.08 (0.08)
Politics (firm level)	-0.42** (0.16)	-0.33* (0.15)	-0.34* (0.14)	-0.37* (0.15)	0.07 (0.09)
Procedural rationality × politics (firm level)	-0.18 (0.11)	-0.08 (0.10)	-0.14 (0.10)	-0.18 (0.11)	0.07 (0.07)
Alliance duration (log)	0.22 (0.31)	0.02 (0.29)	0.08 (0.29)	0.24 (0.30)	-0.29 (0.19)
Alliance type	-0.57 <sup>†</sup> (0.30)	-0.52 <sup>†</sup> (0.27)	-0.58* (0.27)	-0.61* (0.28)	0.04 (0.18)
Operational status of alliance	0.39 (0.32)	0.36 (0.29)	0.58 <sup>†</sup> (0.30)	0.84*** (0.30)	-0.47* (0.19)
Slack (alliance level)	0.37* (0.15)	0.31* (0.14)	0.31* (0.14)	0.37* (0.15)	-0.10 (0.09)
Alliance-level independent variables					
Procedural rationality (alliance level)		0.39** (0.12)	0.38** (0.12)	0.33** (0.12)	0.08 (0.08)
Politics (alliance level)		-0.27 <sup>†</sup> (0.16)	-0.31 <sup>†</sup> (0.16)	-0.43** (0.16)	0.21* (0.10)
Cross-level interactions					
Procedural rationality (firm level) × procedural rationality (alliance level)			0.12 (0.08)	0.20* (0.08)	-0.13* (0.05)
Politics (firm level) × politics (alliance level)			-0.33* (0.14)	-0.39* (0.15)	0.10 (0.09)
$\Delta R^2$		.085	.030		
$\Delta F$		9.723***	3.611*		
$R^2$	.565	.650	.680	.633	.703
Adjusted $R^2$	.459	.554	.581	.526	.616
$F$	5.327***	6.757***	6.899***	5.930***	8.122***

Notes:  $N = 103$ . Unstandardized coefficients shown, with robust standard errors in parentheses. Two-tailed tests were used for controls, main effects, and interaction effects.  $\Delta R^2$ 's and  $\Delta F$ 's are based on Model 1 (for Model 2) and on Model 2 (for Model 3). Dependent variable for Models 1 to 4 is alliance performance.

a. Dependent variable for Model 5 is firm-level recursiveness.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

politics, and their interaction. This model explains 56.5% of the variance of the dependent variable. To test Hypotheses 1 and 3, Model 2 adds alliance-level procedural rationality and politics. This model explains 65.0% of the variance. In the third step, Hypotheses 2 and 4 are tested in Model 3, where we included the two cross-level interaction effects, explaining 68.0% of the variance. (The results were the same when we included each interaction effect separately.) As the cross-level interaction for procedural rationality is not significant, Models 4 and 5 present the results of a supplemental mediation analysis, which we describe below.

In Model 1, the pace of the decision process is positively associated with alliance performance ( $b = 0.35, p < .05$ ) and recursiveness ( $b = -0.73, p < .001$ ) and firm-level politics ( $b = -0.42, p < .01$ ) is negatively associated with alliance performance, all in line with previous results (Walter et al., 2008). Moreover, alliance type (joint venture vs. contractual alliance) is negative and marginally significant ( $b = -0.57, p < .10$ ) and alliance-level slack is positive and significant ( $b = 0.37, p < .05$ ).

In Model 2, adding the alliance-level variables to the control variables explains significantly more variance ( $\Delta R^2 = .085$ ), supporting the argument that decision process characteristics at the alliance level explain variance in alliance performance over and above firm-level decision process characteristics. In this model, alliance-level procedural rationality is positively related to alliance performance ( $b = 0.39, p < .01$ ), whereas alliance-level politics are negatively associated with alliance performance ( $b = -0.27, p < .10$ ). These results provide full support for Hypothesis 1 and marginal support for Hypothesis 3.

Hypothesis 2 proposes that the positive relationship between alliance-level procedural rationality and alliance performance will be stronger when there is a higher degree of firm-level procedural rationality. As indicated in Model 3, the interaction coefficient between the two variables is positive and therefore in the expected direction, but not significant ( $b = 0.12, ns$ ). This finding provides no support for our second hypothesis.

Given the strong theoretical arguments for a cross-level interaction effect of procedural rationality, we performed a post hoc test for potential mediating effects, that is, we analyzed whether other decision process characteristics at the firm level might explain our nonfinding.<sup>4</sup> In this respect, Walter et al. (2008) have provided empirical support for a negative effect of recursiveness on alliance performance. Although generally believed to enhance strategic flexibility, recursiveness in an alliance context may actually inhibit consistency in resource accumulation (Kellermanns & Floyd, 2005) and undermine irreversible commitments necessary for successful interfirm collaborations (Doz, 1988, 1996; Ring & Van de Ven, 1994). In addition to this negative main effect, however, the ability of alliance managers to reexamine key assumptions in light of changing circumstances and to recalibrate their decisions accordingly at the firm level (J. S. Evans, 1991) may provide an effective means to counteract the reliance on alliance-level decision processes—which may not be characterized by procedural rationality—as inputs for firm-level decision processes. Rather than taking the outcomes of alliance-level decision processes for granted, alliance managers may take a few tentative steps and then refine their decisions based on their revised perceptions of procedural rationality at the alliance level (Sharfman & Dean, 1997), which, in turn, may diminish the cross-level interaction effect of procedural rationality.

To investigate whether our nonfinding may be because of recursiveness mediating the hypothesized interaction effect, we performed a supplemental four-step mediation analysis.

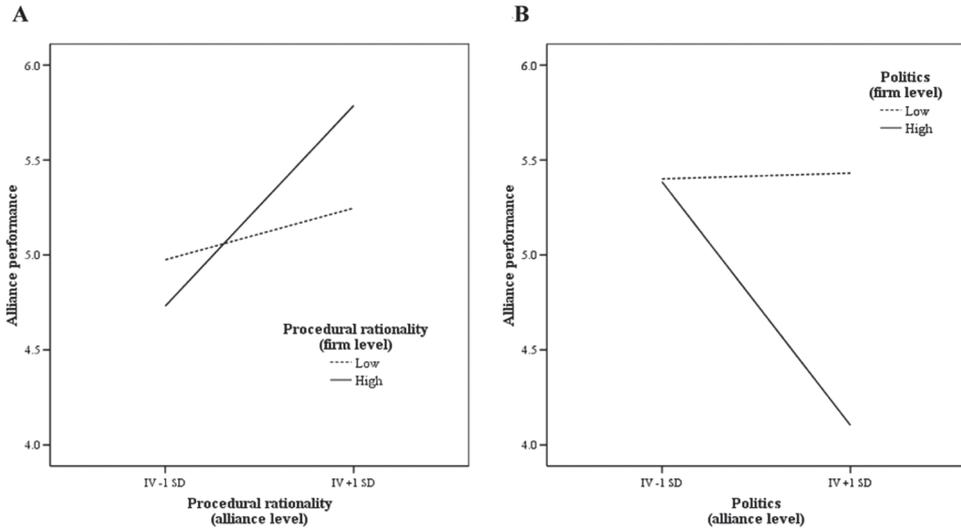
Following Baron and Kenny (1986), we first regressed alliance performance on the cross-level interaction for procedural rationality, excluding the potential mediator, that is, recursiveness, from our analysis (Model 4). The results show that the cross-level interaction for procedural rationality is indeed positively and significantly associated with alliance performance ( $b = 0.20, p < .05$ ). To interpret this interaction, we graphically plotted it (Figure 2a) and performed  $t$  tests for simple slopes (Aiken & West, 1991). Procedural rationality at the firm and alliance levels took the values of one standard deviation below (“low”) and above (“high”) the mean. Figure 2a suggests that the positive effect of alliance-level procedural rationality on alliance performance is more pronounced when procedural rationality at the firm level is high (as indicated by the steeper slope of the solid line). The figure further suggests that above a certain degree of alliance-level rationality, higher procedural rationality at the firm level enhances alliance performance. Below a certain degree of alliance-level rationality, however, alliance performance is diminished when there is higher procedural rationality at the firm level. Two  $t$  tests show that the simple slope for alliance-level procedural rationality is positive for high values of firm-level procedural rationality ( $b = 0.56, p < .001$ ), whereas the simple slope is not significantly different from zero for low values of firm-level procedural rationality ( $b = 0.11, p = .53$ ). Second, we regressed recursiveness on the cross-level interaction for procedural rationality (Model 5) and found that it was negatively and significantly associated with the potential mediator ( $b = -0.13, p < .05$ ). Third, Model 3 shows that recursiveness is negatively and significantly associated with alliance performance ( $b = -0.56, p < .01$ ). Fourth, when recursiveness and the cross-level interaction effect were both included (Model 3), recursiveness remained significant, but the cross-level interaction effect did not ( $b = 0.12, ns$ ). Mediation was also confirmed by a Sobel test ( $z = 1.99, p < .05$ ). Combined, these results suggest that firm-level recursiveness mediates the relationship between the cross-level interaction of procedural rationality and alliance performance.<sup>5</sup>

Hypothesis 4 proposes that the negative relationship between alliance-level politics and alliance performance will be stronger when there is a high degree of firm-level politics. The interaction coefficient in Model 3 is negative and significant ( $b = -0.33, p < .05$ ). Figure 2b indicates that the negative effect of alliance-level politics on alliance performance is more pronounced when there is a high degree of firm-level politics (indicated by the steeper slope of the solid line). Two  $t$  tests show that the simple slope for alliance-level politics is negative for high values of firm-level politics ( $b = -0.68, p < .01$ ), whereas the simple slope is not significantly different from zero for low values of firm-level politics ( $b = 0.05, p = .80$ ). These findings support our fourth hypothesis.<sup>6</sup>

## Discussion and Implications

This study has examined alliance-related decision-making processes at both the firm and the alliance levels. This cross-level analysis has allowed us to explore interactions across these levels of analysis. Two major implications can be drawn. First, taking into account empirical challenges associated with detecting interaction terms (Aguinis & Stone-Romero, 1997; McClelland & Judd, 1993), our two significant interactions provide support for our argument that it is imperative to consider decision processes at the firm and alliance levels

**Figure 2**  
**Interaction Effects Between Firm- and Alliance-Level Decision-Making**  
**Process Characteristics and Alliance Performance**



Note: Figure 2a shows the interaction effect when recursiveness is not included in the regression model.

*simultaneously*. Trying to optimize one without considering the other might lead to suboptimal results. This shall not overshadow findings of empirically distinct main effects at the firm and alliance levels; however, it suggests that studies of decision making in alliances that focus on one level of analysis only are unlikely to reveal all the ongoing relationships.

Second, theoretical frameworks reflecting the tensions between rational (e.g., March & Simon, 1958) and political models (e.g., Cyert & March, 1963; Narayanan & Fahey, 1982; Tushman, 1977) seem to be most promising to explain alliance-related decision making. This finding extends previous arguments employing “either-or” explanations toward a more realistic understanding of decision processes in alliances as comprising both aspects.

Examining our results in more detail, we recognized that at the alliance level—where decision makers have to deal with partners’ idiosyncrasies, interdependencies, asymmetric information, and relational uncertainty—a high degree of procedural rationality seems to be a valuable coping mechanism, as it enables managers to successfully coordinate and integrate their decisions with those of their partner. Moreover, when we do not control for recursiveness in our regression model, the significant interaction effect of procedural rationality supports our argument that high degrees of procedural rationality at both levels enable decision coordination and integration within and between firms and thereby enhance alliance performance. Our results also suggest, however, that alliance managers should not unconditionally rely on procedural rationality. In fact, below a certain degree of alliance-level procedural rationality, alliance performance is enhanced when combined with a low degree of firm-level procedural

rationality, as a reliance on procedural rationality at the firm level will be detrimental when decision making is based on inadequate or even misleading information resulting from alliance-level decision processes that do not exhibit high degrees of procedural rationality.

We further found in a post hoc test that the cross-level interaction for procedural rationality is mediated by recursiveness, which suggests that the ability to take a few tentative steps and then refine decisions based on revised perceptions of procedural rationality at the alliance level (Sharfman & Dean, 1997) may provide alliance managers with an effective means to escape the threats of an unconditional reliance on the procedural rationality of alliance-level decision processes. Combined with the negative main effect of recursiveness on alliance performance, our results suggest that alliance managers have to carefully select the degree of reconsidering their choices and changing their minds and possibly adjust them to their perceptions of the degree of procedural rationality that characterizes alliance-level decision processes.

We further found that the main effect of politics at the alliance level was negative, as expected, albeit only marginally significant. The significant interaction for the cross-level effect, however, supports our argument that a high degree of politics at the firm level amplifies the negative effect of politics at the alliance level. These findings not only corroborate and extend previous studies on organizational politics to the alliance context but also provide new insights into the requirements for managing interfirm collaborations. In particular, our findings shed new light on the two sets of arguments in the literature that emphasize the necessity for both partners to focus primarily on their individual interests to minimize the risk involved in strategic alliances (e.g., Hamel et al., 1989) or the self-correcting effect of politics on deficiencies and dysfunctions in other, legitimate, systems of influence (Mintzberg, 1985; Thomas & Trevino, 1993). In contrast to these arguments, our findings suggest that a focus on individual interests, as opposed to common interests, might actually jeopardize alliance performance. Alliances seem to depend on both partners' perceptions that their interests are represented at the alliance level, possibly because perceptions of justice and legitimacy are crucial for partners to continue allocating resources to the collaboration (R. Kumar & Das, 2007; Luo, 2007). Sensitivity toward the political undercurrent of alliances, therefore, seems to increase the likelihood of their success.

More generally, our study contributes to emerging research on alliance capabilities (Kale et al., 2002). Our analysis of successful alliance management processes complements more ubiquitous, content-driven research and provides empirical support for the importance of decision making as part of a firm's alliancing skills. The management of intangible, socially complex, and causally ambiguous decision processes, which requires intricate coordination between managers and resources (both internal and external), is difficult to comprehend and imitate; therefore, it is likely to provide a competitive advantage to those firms that master it. Addressing recent criticism of the academic and managerial relevance of alliance process research (Bell et al., 2006; Hennart, 2006), our results have direct applicability for alliance management practice by opening up the "black box" of alliance-related decision processes and providing detailed recommendations for their management. Moreover, by combining rational and political decision-making models, our study provides a response to the fragmented nature of research on alliance-related decision processes and empirically corroborates the usefulness of research that crosses theoretical, as well as organizational, boundaries. We hope future research will continue to tap the full potential of such an approach.

## Limitations and Future Research

Relying on a single respondent might be considered as a potential shortcoming of our research. However, similar to other recent studies on alliances (e.g., Isobe et al., 2000; Krishnan et al., 2006; Lui & Ngo, 2004, 2005; Steensma & Corley, 2000; Tsang, 2002; White & Lui, 2005) and corporate decision-making processes (e.g., Elbanna & Child, 2007; Goll & Rasheed, 1997), we employed several procedural and statistical remedies. We separated scale items for dependent and independent variables (Parkhe, 1993; Salancik & Pfeffer, 1977), included reverse-coded items, obtained data from different sources for five of the control variables, and applied Harman's (1967) one-factor test. Also, as discussed previously, the significance of our interaction terms is unlikely to be an artifact of our single-informant method (M. G. Evans, 1985; Kotabe et al., 2002; Krishnan et al., 2006).

Although our self-reported performance variable has been widely adopted in the literature as a reliable assessment of alliance performance (e.g., Das & Teng, 2000b; Geringer & Hebert, 1991; Lane & Lubatkin, 1998; Parkhe, 1993; Saxton, 1997), an objective measure would have been desirable to further corroborate our findings. Unfortunately, the privately held status of a number of companies in our sample prevented us from collecting reliable performance data.

The remaining limitations of this study, at the same time, offer avenues for future research. First, our findings specifically relate to strategic alliances in high-technology industries. Future research might examine the generalizability of our findings for different industries and other environmental contingencies as well as for different types of alliances. Our findings might have implications, for instance, for other contexts where joint decision making is necessary, such as R&D, technology exchange agreements, and customer-supplier relations (Kale et al., 2002). As the degree of interdependence between partners decreases, however, decision makers might perceive less necessity to engage in joint decision making, and interaction effects should decrease. Future research might follow up on this proposition and develop a decision model at the firm and interfirm levels that incorporates the degree of interdependence between partners as a moderating effect.

In addition to investigating the effects of procedural rationality and politics on alliance performance, other variables, such as constructive confrontation (Burgelman, 2002), power (Pfeffer, 1992), and strategic consensus about goals and outcomes of alliance-related decisions (Inkpen, 2008)—at both the firm and alliance levels—deserve further attention. It would be particularly interesting to investigate, for instance, how the power of individual actors in the decision-making process relates to alliance performance. For example, political behavior by a powerful individual who is not committed to the success of the alliance may be significantly more destructive than moderate levels of politics throughout the entire organization. Similarly, consensus among select influential decision makers may significantly improve alliance performance, even in the face of political opposition (Inkpen, 2008). Moreover, it would be interesting to examine the impact of process characteristics on intermediary variables, such as decision effectiveness. Examining such a more proximate outcome would allow for even more nuanced insights into decision-making processes and their impact on alliance performance.

Examining the distinctive alliance life cycle stages (Kale et al., 2002) could provide additional insights into alliance-related decision processes. Although we controlled for alliance duration—which was found to be a significant control variable—a longitudinal approach examining the impact of decision-making characteristics on alliance performance in each life cycle stage separately and assessing whether there are differences across the stages of an alliance could result in an improved understanding of whether and how decision process characteristics and their benefits change over time.

For the purpose of our study, we focused on the analysis of one party to the collaboration only. However, as a recent study by Luo (2005) has shown, as soon as the focus is expanded to include both partners, perceptions of processes may differ substantially. Thus, it may be beneficial for future research to create a comprehensive, multilevel model of decision processes that assesses both partners (and, in the case of independent joint venture, the alliance itself) separately to more fully portray the complex interactions within alliance-related decision making.

In conclusion, this study investigated the impact of strategic decision-making processes at both the firm and the alliance levels on alliance performance. Our results suggest that over and above their direct and distinct effects at both levels, decision process characteristics interact between levels and jointly affect alliance performance. Our analysis therefore provides valuable insights into these crucial behavioral processes that constitute an important part of a firm's alliance capability.

## Notes

1. Although decision makers may have the best intentions to act rationally, incomplete information, cognitive constraints, and the finite amount of time limit their ability to incorporate all available information into their decision processes (March & Simon, 1958; Simon, 1957).

2. Steensma and Corley (2000) conducted a two-phase data collection: the first phase yielded two respondents for 13.9% (29 out of 208) of the technology-sourcing partnerships they received surveys on, and 86.1% of partnerships were assessed by single respondents; for the second phase, all partnerships were assessed by a single respondent.

3. In contrast to Zaheer, McEvily, and Perrone (1998), however, factor analyses suggested that our measurement items should be kept parallel, that is, contain the same items, for both levels of analysis.

4. We are indebted to an anonymous reviewer who suggested such a supplemental analysis.

5. We also replicated the results of our mediated moderation with the procedure recommended by Muller, Judd, and Yzerbyt (2005).

6. To further test the robustness of our results, we have added two additional firm-level interaction effects as controls (i.e., politics  $\times$  openness and politics  $\times$  recursiveness) that have been found to influence alliance performance (Walter, Lechner, & Kellermanns, 2008). The main effect for alliance-level rationality remains fully significant ( $p < .001$ ), and the same mediation analysis as conducted in Models 4 and 5 shows that the cross-level interaction effect for rationality remains marginally significant ( $p = .088$ ) and is mediated by recursiveness ( $p = .049$ ). The main effect for alliance-level politics, however, goes from marginally significant to nonsignificant ( $p = .137$ ), and the cross-level interaction effects for politics ( $p = .127$ ) are no longer significant in Model 3. We felt that adding these controls in our final model was not appropriate because they were not correlated with the dependent variable (correlations are  $-.144$  and  $-.079$ , both *ns*)—which makes them “impotent controls” (as defined by Becker, 2005) that could lead to a Type II error (i.e., concluding that there is no effect when, in fact, there is)—and because they were highly correlated with each other ( $.81, p > .01$ ), raising multicollinearity concerns.

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